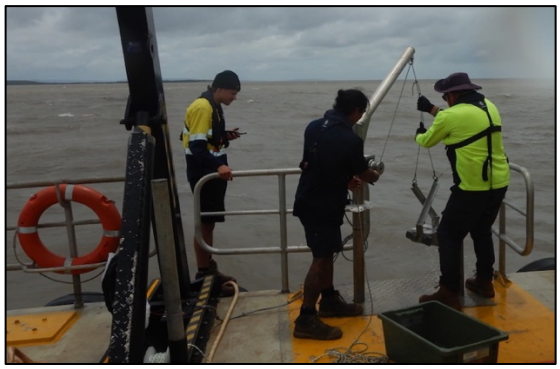
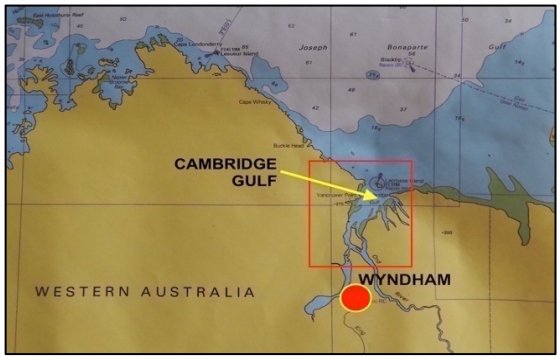
EPBC Referral Supplementary Report No. 5

Boskalis Cambridge Gulf Marine Sand Proposal

Western Australia

RESPONSE TO
REQUEST FOR FURTHER INFORMATION (RFI)





Prepared for Boskalis Australia Pty Ltd by EcoStrategic Consultants

In support of Project Referral under Part 7 of Commonwealth *Environment Protection & Biodiversity Conservation Act*

AUGUST 2025

Boskalis

ecostrategic
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CONTENTS

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REFERRAL DOCUMENTATION

This report is part of a larger set of documents submitted as part of Boskalis Australia's referral under Part 7 of the Commonwealth *Environment Protection & Biodiversity Conservation Act* (EPBC Act), as listed in the table below.

Doc No.	**Reference** (Author/yr)	**Electronic File Names (PDFs)** (except Doc No.s 9 & 10 which are Excel files). As required, these file names are how the reports are referenced in the online referral submitted via the EPBC Act Business Portal https://epbcbusinessportal.environment.gov.au
0	-	EPBC Referral - Boskalis Cambridge Gulf - *List of Preliminary Documents.*
1	BKA (2024a)	EPBC Referral Report No. 1 - Boskalis Cambridge Gulf - *Description of Proposed Action & Regulatory Framework.*
2	BKA (2024b)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - *Setting & Existing Environment.* Includes in same document: • Annex 3 - *Drop Camera Video Extracts.* • Annex 4 - *Dry Season Sample Point Specs.* • Annex 5 - *Wet Season Sample Point Specs.* • Annex 6 - *Benthic Taxa per Sample Point - Dry Season Maps.* • Annex 7 - *Benthic Taxa per Sample Point - Wet Season Maps.* • Annex 8 - *Benthic Taxa per Sample Point - Dry Season Graphs.* • Annex 9 - *Benthic Taxa per Sample Point - Wet Season Graphs.* • Annex 11 - *Sediment Contamination Assessment.* • Annexes 1, 2, 10, 12, 13 and 14 are submitted as separate documents as listed below.
3	BKA (2024c)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - Annex 1 - *Sand Assessment.*
4	MScience (2024)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - Annex 2 - *MScience BCH Methods.*
5	Sensorem (2024)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - Annex 10 - *Aerial Drone Lidar Report.*
6	Price & Raaymakers (2024)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - Annex 12 - *Cape Domett Turtle Data Report.*
7	Univ. Canberra (2024)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - Annex 13 - *Marine eDNA Report.*
8	BKA (2024d)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - Annex 14 - *Marine Mega-fauna Surveys Report.* Includes in same document: • Appendix 1 - *MMF Sightings Master Data Tables.* • Appendix 2 - *MMF Images.* • Appendix 3 - *MMF Sighting Locations.* • Appendices 4 and 5 are submitted as separate Excel files as listed below.
9	BKA (2024e)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - Annex 14 - *Appendix 4 - Species Data - Dry Season* (Excel).
10	BKA (2024f)	EPBC Referral Report No. 2 - Boskalis Cambridge Gulf - Annex 14 - *Appendix 5 - Species Data - Wet Season* (Excel).
11	BKA (2024g)	EPBC Referral Report No. 3 - Boskalis Cambridge Gulf - *Traditional Owner Matters.* Includes in same document: • Annex 1 - *BAC Native Title Determination Map.* • Annex 2 - *MG Native Title Determination Map.* • Annex 3 - *Letter from BAC.*

Doc No.	**Reference** (Author/yr)	**Electronic File Names (PDFs)** (except Doc No.s 9 & 10 which are Excel files). As required, these file names are how the reports are referenced in the online referral submitted via the EPBC Act Business Portal https://epbcbusinessportal.environment.gov.au
		• Annex 4 - *Letter from MG.*
12	BKA (2024h)	EPBC Referral Report No. 4 - Boskalis Cambridge Gulf - *Impact Assessments.* Includes in same document: • Annex 1 - *Main Datasets Used to Inform Impact Assessments.* • Annex 2 - *Shipping & Oil Spill Risk Assessment.* • Annex 3 - *Plume Mitigation Capability Statement.* • Annex 4 - *Marine Mega-fauna Capability Statement.*
13	PCS (2024a)	EPBC Referral Report No. 5 - Boskalis Cambridge Gulf - *Metocean & Sed Dynamics Initial Report.* • Includes in same document Annex 1 - *Supplementary Technical Note.* • Annex 2 is submitted as a separate document as listed below.
14	PCS (2024b)	EPBC Referral Report No. 5 - Boskalis Cambridge Gulf - Annex 2 - *Factual Data Report.* (NOTE: Superseded by *Updated Factual Data Report* - see Doc No. 19, Referral Report No. 8 - Annex B below).
15	BKA (2024i)	EPBC Referral Report No. 6 - Boskalis Cambridge Gulf - *Consultation.* • Includes in same document Annex 1 - *List of Meeting Minutes.*
16	BKA (2024j)	EPBC Referral Report No. 7 - Boskalis Cambridge Gulf - *Commonwealth Matters.* • Includes in same document Annex 1 - *PMST Report for POA & 10 Km Buffer.*
17	PCS (2025a)	EPBC Referral Report No. 8 - Boskalis Cambridge Gulf - *Metocean & Sed Dynamics Full Modelling Report.* • Appendices and Annexes are submitted as a separate document each, as listed below.
18	PCS (2025b)	EPBC Referral Report No. 8 - Boskalis Cambridge Gulf - *Appendices.* • Appendix A - *Model Calibration and Validation Plots.* • Appendix B - *Hydrodynamic and Wave Impact Plots.* • Appendix C - *Sediment Transport Impact Plots.* • Appendix D - *Sediment Plume Modelling Results.*
19	PCS (2025c)	EPBC Referral Report No. 8 - Boskalis Cambridge Gulf - *Annexes.* • Annex A - *Independent Expert Review.* • Annex B - *Updated Factual Data Report.*
NOTE: The documents listed above were submitted in the initial referral. The documents listed below were submitted after the initial referral.		
20	Nocterra (2025)	EPBC Referral Supplementary Report No. 1 - Boskalis Cambridge Gulf - *Light Assessment.*
21	Resonate (2025)	EPBC Referral Supplementary Report No. 2 - Boskalis Cambridge Gulf - *Noise Assessment.*
22	BKA (2025a)	EPBC Referral Supplementary Report No. 3 - Boskalis Cambridge Gulf - *Commonwealth Environmental Management Plan (C-EMP).*
23	BKA (2025b)	EPBC Referral Supplementary Report No. 4 - Boskalis Cambridge Gulf - *Additional Information*. • *Current Speeds in the POA & Turtle Swimming Speeds.* • *Analysis of Turtle Satellite Tracking - Cape Domett*. • *Boskalis Capability Sheet - Trailer Suction Hopper Dredgers.*
24	BKA (2025c)	**THIS DOCUMENT:** EPBC Referral Supplementary Report No. 5 - Boskalis Cambridge Gulf - *Response to Request for Further Information.*

ACRONYMS

BIA	Biologically Important Area
BKA	Boskalis Australia Pty Ltd
BWM Convention	International Convention for the Control & Management of Ships' Ballast Water & Sediments
C-EMP	Commonwealth Environmental Management Plan (as presented in Supplementary Report No. 3)
CEO	Commonwealth Environmental Outcome (as contained in the C-EMP)
CG	Cambridge Gulf
CMS	Convention on Migratory Species
DAFF	Commonwealth Department of Agriculture, Fisheries & Forestry
DBCA	WA Department of Biodiversity, Conservation & Attractions
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment & Water
DEMIRS	WA Department of Energy, Mines, Industry Regulation & Safety
EIS	Environmental Impact Statement (under EPBC Act)
EPA	WA Environmental Protection Authority
EP Act	WA Environmental Protection Act
EPBC Act	Commonwealth *Environment Protection & Biodiversity Conservation Act*
IMO	International Maritime Organization
LAT	Lowest Astronomical Tide
LiDAR	Light Detection & Ranging
MARPOL	International Convention for the Prevention of Pollution from Ships
MFOA	Marine Fauna Observation and Avoidance
MNES	Matters of National Environmental Significance (under Commonwealth EPBC Act)
PMST	(Commonwealth) Protected Matters Search Tool
Ramsar	Convention on Wetlands of International Importance
RFI	Request for Further Information
SPV	Sand Production Vessel
TO	Traditional Owner
TSHD	Trailer Suction Hopper Dredger
WA	Western Australia (State of)
WHA	Wildlife Health Australia

PROJECT LOCATION

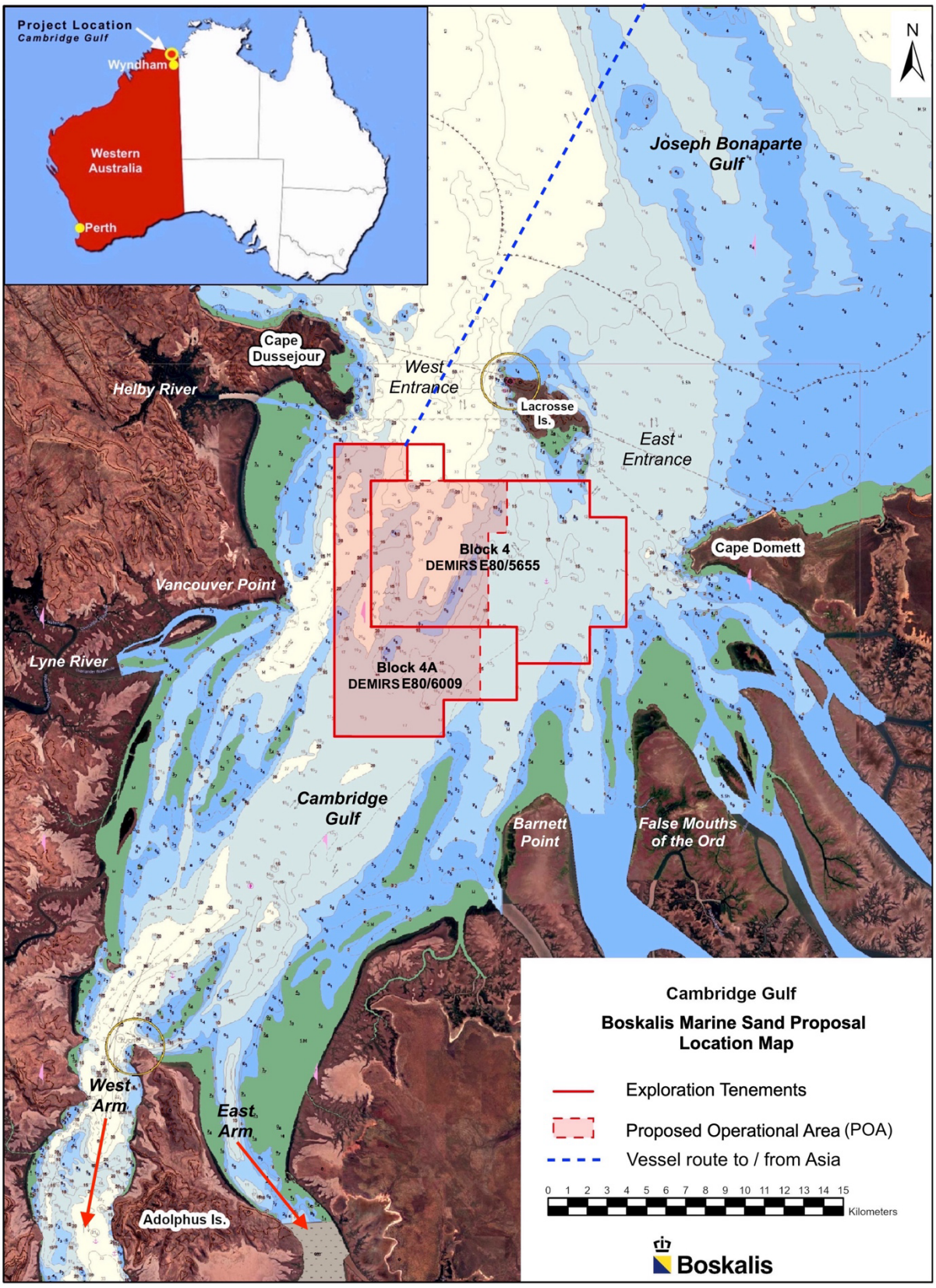

FIGURE 1: *Location of the proposed action in Cambridge Gulf near Wyndham in the northeast of WA.*

1. BACKGROUND & PURPOSE OF THIS REPORT

1. Boskalis Australia Pty Ltd (BKA) is assessing the feasibility of developing a marine sand-sourcing operation (the proposed action) in Cambridge Gulf (CG) near Wyndham in the northeast of Western Australia (WA) (Figure 1). BKA currently holds two sand exploration tenements in CG under the WA *Mining Act*, as the basis for the proposed action.

2. A detailed description of the proposed action is presented in EPBC Referral Report No. 1 - *Description of the Proposed Action & Regulatory Framework* and is not repeated in this report for reasons of economy.

3. To support its assessment BKA has undertaken a wide range of comprehensive studies since 2018. These studies find that the proposed action is feasible and viable and unlikely to cause significant environmental impacts, as defined under the WA *Environmental Protection Act* (EP Act) and the Commonwealth *Environmental Protection & Biodiversity Conservation Act* (EPBC Act). Never-the-less, as a responsible company with stringent environmental and social policies, BKA self-referred the proposal to both the State and the Commonwealth under their respective Acts, for their determination of what further environmental assessments might be required, if any. The EPBC Act referral was submitted in January 2025.

4. Subject to the outcomes of the State and Commonwealth EPBC Act referral processes, BKA plans to apply to the WA Department of Energy, Mines, Industry Regulation & Safety (DEMIRS) to convert a reduced part of the two Exploration Tenements to a single Mining Tenement, shown as the 'proposed operational area' (POA) on Figure 1.

5. On 27 June 2025 a delegate of the Commonwealth Minister for the Environment decided that:

    a) the proposed action is a controlled action under the EPBC Act,

    b) it will be assessed by preliminary documentation; and

    c) further information was required to assess relevant impacts of the proposed action.

6. On 16 July 2025 DCCEEW issued a letter to BKA with a Request for Further Information (RFI), under section 95A(2) of the EPBC Act. The purpose of this report is to provide BKA's response to the RFI.

2. SUMMARY RESPONSES TO RFI

1. Table 1 presents each item and sub-item of DCCEEW's RFI along with a summary of BKA's response to each, with reference to the more detailed responses in the following sections below. The item numbering has been introduced by BKA to assist in organizing the responses, and are not used in DCCEEW's RFI letter. However, the headings and contents are exactly the same.

2. There is considerable repetition of material in the responses to each item of the RFI. This is because responses to all items have been included and addressed in turn, so as to provide a complete picture of how BKA has addressed all aspects of the RFI. Where possible, repetition has been reduced by referencing other sections of this report and relevant sections of the various Referral Reports already submitted, where the relevant responses have already been provided.

TABLE 1: *Summary responses to RFI*

DCCEEW Request	Summary BKA Response
Item 1: Listed threatened species (sections 18 & s 18A of EPBC Act)	
Item 1.1: Potential significant impacts: The department considers that the proposed action is *likely to have a significant impact* on: – Flatback Turtle (*Natator depressus*) – Vulnerable (Migratory). – Australian Snubfin Dolphin (*Orcaella heinsohni*) – Vulnerable (Migratory). – Australian Humpback Dolphin (*Sousa sahulensis*) – Vulnerable (Migratory).	Refer section 3.1 below for detailed response. BKA does not understand on what bases the department considers that the proposed action is *likely to have a significant impact* on the three listed species, as described by the EPBC Act significant impact criteria, and considering the nature of the proposed operation and proposed impact prevention, mitigation, monitoring and response measures. BKA has sought clarification on this from the department, which has not been received. BKA's systematic and scientific impact assessment, conducted in accordance with the EPBC Act significant impact criteria and the impact mitigation hierarchy, as presented in BKA's referral reports, finds that it is highly unlikely that the proposed action would cause significant or residual or irreversible impacts on the listed species. This is further supported by the information submitted in this response to the RFI.
Item 1.2: Diseases & pathogens: The department notes that i) the *Marine bioregional plan for the North-west Marine Region,* ii) the *Conservation Advice for* Orcaella heinsohni *(Australian snubfin dolphin*), iii) the *Conservation Advice for* Sousa sahulensis *(Australian humpback dolphin)* and iv) the *Recovery Plan for Marine Turtles in Australia* identify disease (and pathogens) as pressures/threats to these species. Please provide further discussion of this threat, together with management measures (mitigation, early-warning monitoring, research programs) aimed at early detection of new diseases affecting populations of the threatened species mentioned above. Please discuss these threats in the Preliminary Documentation and in the EMP. **Note**: This is separate and additional to the measures proposed in EO 4 - "no marine pest species are introduced via the SPV's ballast water discharges or hull bio-fouling".	Refer section 3.2 below for detailed response. The *Marine bioregional plan for the North-west Marine Region* is not relevant as it applies to Commonwealth waters only, while CG is within internal State waters, landward of the baseline and thus not even in 3nm coastal State waters. The *Marine bioregional plan* contains a single reference to 'disease' as being a potential 'pressure' on biodiversity of the region, with potential sources of disease being identified as aquaculture, fishing, tourism and shipping (with only the latter being relevant to the project, as the SPV is a ship). Potential diseases from shipping relate to ballast water discharges, which have been fully addressed in accordance with both IMO and Commonwealth requirements. BKA is not aware of any other potential vectors / mechanisms whereby the SPV could cause introductions of diseases of the listed species. BKA has sought advice from DCCEEW on examples of other similar marine projects in Australia where diseases and pathogens have been an issue, and the management measures that have been required by DCCEEW in order to address this - so that BKA can follow established best-practices. Such advice has not been received. The *Recovery Plan for Marine Turtles in Australia* contains a dedicated section on diseases and pathogens, and implies that diseases in marine turtles are natural but may be exacerbated by poor water quality. The project will not have negative impacts on water quality. The *Recovery Plan* also states that *'To date, there are no recorded occurrences of diseases and pathogens affecting the viability of a marine turtle stock in Australia.'* DCCEEW's *Conservation Advice for Snubfin Dolphins* and for *Humpback Dolphins* similarly imply potential links between poor water quality and dolphin skin diseases. As above, the project will not have negative impacts on water quality. Some of the documents do make specific reference to bacterial infections which can result from injuries caused by vessel strikes – this is addressed through measures to prevent and mitigate vessel strikes.

DCCEEW Request	Summary BKA Response

Item 1.3: Consideration of relevant conservation advice, recovery plans and/or threat abatement plans:
 	
Please demonstrate that the proposal has had regard to relevant conservation advices, and is not inconsistent with recovery plans and/or threat abatement plans, including but not limited to those listed in Annex 1 of Attachment B.
	Much of this was addressed in BKA's Referral Reports as submitted, and especially:
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment*.
	  – Section 9 - *Marine Fauna*
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*.
	
	– EPBC Referral Report No. 4 - *Impact Assessments*.
	  – Section 10 - *Impact Assessment - Marine Fauna*,
	
	– EPBC Referral Report No. 7 - *Commonwealth Matters*.
	  – Section 10 - *Potential Impacts on Species-based MNES.*
	
	– EPBC Supplementary Report No. 1 - *Light Assessment*.
	
	– EPBC Supplementary Report No. 2 - *Noise Assessment*.
	
	Section 3.3. below assesses the following seven Conservation Advice documents:
	– *Conservation Advice for Orcaella heinsohni (Australian Snubfin Dolphin), March 2025.*
	– *Conservation Advice for Sousa sahulensis (Australian Humpback Dolphin), March 2025.*
	– *Conservation Advice for Glyphis glyphis (Speartooth Shark), April 2014.*
	– *Conservation Advice for Glyphis garricki (Northern River Shark). April 2014.*
	– *Conservation Advice for Pristis pristis (Largetooth Sawfish), April 2014.*
	– *Conservation Advice for Pristis zijsron (Green Sawfish), undated.*
	– *Conservation Advice for Pristis clavata (Dwarf Sawfish), October 2009.*
	
	Section 3.4. below assesses the following two Species Recovery Plans:
	– *Sawfish & River Sharks Multi-species Recovery Plan, 2015.*
	– *Recovery Plan for Marine Turtles in Australia, 2017-2027.*
	
	Section 3.5 below assesses the following Threat Abatement Plan:
	– *Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (2018)* (short title *Marine Debris Threat Abatement Plan).*

Item 2: Economic and social matters Please provide further detail on the social and economic costs and/or benefits of undertaking the proposed action, including: – An estimate of any anticipated economic costs and/or benefits (in AUD), particularly with – reference to the domestic market. – The basis for any estimations of costs and/or benefits. – Detail any social matters around the proposed action. This includes benefits to the local – Traditional Owners. – Any potential employment opportunities expected to be generated by the proposed – action, including any potential opportunities for local Traditional Owners groups. – Any funding the project has received from federal departments or agencies.	Refer section 4 below. DCCEEW has since advised that the information on economic and social matters contained in the Referral Reports as already submitted is adequate and no further response is required on this item.

DCCEEW Request	Summary BKA Response
Item 3: Environmental Management Plan (EMP) A separate Attachment B was provided by DCCEEW with detailed comments on the Draft EMP that had been submitted to them several weeks previously. Responses to each comment are provided in *Attachment B - DCCEEW Comments on the EMP v.1 - BK Responses.*	Refer section 5 below. Draft 2 of the proposed EMP has been developed, addressing DCCEEW's review comments on Draft 1. This is submitted separately as EPBC Supplementary Report No. 3 – *Commonwealth Environmental Management Plan (C-EMP)*, along with a table listing how each of DCCEEW's review comments have been addressed.

3. RESPONSE TO RFI ITEM 1 - LISTED THREATENED SPECIES

3.1 Potential for Significant Impacts

1. BKA does not understand on what bases DCCEEW considers that the proposed action is *likely to have a significant impact* on the three listed species (Flatback Turtle, Snubfin Dolphin and Humpback Dolphin), as described by the EPBC Act significant impact guidelines (DCCEEW 2021), and considering the nature of the proposed operation and associated impact-causing mechanisms, and proposed impact prevention, mitigation, monitoring and response measures. BKA has sought clarification on this from the department, which has not been received.

2. BKA's systematic and scientific impact assessments, conducted in accordance with the EPBC Act significant impact criteria and the impact mitigation hierarchy, as presented in BKA's Referral Reports, finds that it is highly unlikely that the proposed action would cause significant, residual or irreversible impacts on the listed species. This is further supported by the information submitted in this response to the RFI.

3. BKA's systematic impact assessments with regard to the three listed species are detailed in the following Referral Reports, and the details are not repeated in this report, for reasons of economy.

    a) **Flatback Turtles:**

    - EPBC Referral Report No. 2 - *Setting & Existing Environment*.
        - Section 9.4 presents a detailed description of marine turtles, including Flatback Turtles in the CG area, supported by Annex 12 to that report - *DBCA Cape Domett Turtle Data Report*.

    - EPBC Referral Report No. 4 - *Impact Assessments.*
        - Potential impacts of the proposed operation on Flatback Turtles are assessed in Section 10.3.2 of in accordance with WA EPA guidelines and impact mitigation hierarchy, and find no significant or residual impacts in accordance with those guidelines.

    - EPBC Referral Report No. 7 - *Commonwealth Matters.*
        - Potential impacts of the proposed operation on Flatback Turtles are assessed in Section 10.2 of in accordance with EPBC Act significant impact criteria and impact mitigation hierarchy, and finds no significant or residual impacts in accordance with those criteria.

    - EPBC Supplementary Report No. 1 - *Light Assessment*
        - Potential impacts of light emissions from the SPV on nesting and hatching turtles in the CG area are assessed in accordance with both the *National Light Pollution Guidelines for Wildlife* (DCCEEW 2023) and WA EPA requirements, and finds no significant impacts.

    - EPBC Supplementary Report No. 2 - *Noise Assessment*
        - This includes detailed modelling of predicated noise emissions from the SPV and assessment of potential auditory injury and behavioural impacts on marine turtles, in accordance with the US NMFWS criteria (as required by WA EPA), using a risk assessment approach, and finds that potential impacts are negligible.

    - EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*
        - This includes best practice impact avoidance, mitigation, monitoring and response actions for marine turtles in accordance with the impact mitigation hierarchy.

    - EPBC Referral Supplementary Report No. 4 - *Additional Information.*
        - Additional information on marine turtle issues is presented in Section 2 - *Current Speeds in the POA & Turtle Swimming Speeds*, and Section 3 - *Analysis of Turtle Satellite Tracking - Cape Domett*.

    Further assessment is provided for marine turtles in Table 10 in section 3.4 below, which assesses how BKA has taken account of the Recovery Plan for Marine Turtles.

    b) **Snubfin & Humpback Dolphins** (combined as the assessments are the same):

    - EPBC Referral Report No. 2 - *Setting & Existing Environment*.
        - Section 9 - *Marine Fauna* describes marine fauna in the area based on all available information and the site surveys commissioned by BKA.
        - Section 9.4.1 - *Australian Snubfin Dolphin* and Section 9.4.2 - *Australian Humpback Dolphin* provide specific descriptions of these species in the area, based on all available information and the site surveys commissioned by BKA.

- EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*.
  - This presents the methods and results of marine fauna surveys commissioned by BKA, including for Snubfin and Humpback Dolphins, including literature review, consultations with relevant experts and stakeholders, assessment of previous surveys conducted by others in the area (e.g Brown et al 2016 & 2017), and the dry- and wet-season surveys carried out in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong* (DCCEEW 2024).

- EPBC Referral Report No. 4 - *Impact Assessments*.
  - Section 10 - *Impact Assessment - Marine Fauna*, assesses potential impacts of the proposal on marine fauna in accordance with WA EPA guidelines and impact mitigation hierarchy.
  - Section 10.3.1 - *Snubfin & Humpback Dolphins* applies the impact assessment to these species and finds no significant or residual impacts in accordance with WA EPA guidelines and impact mitigation hierarchy.

- EPBC Referral Report No. 7 - *Commonwealth Matters*.
  - Section 10.3 - *Specific Assessment for Snubfin Dolphins* assesses potential impacts of the proposal on this species in accordance with the EPBC Act significant impact criteria and impact mitigation hierarchy, and finds no significant or residual impacts in accordance with these criteria. It applies equally to Humpback Dolphins given the similarity of these two species.

- EPBC Supplementary Report No. 2 - *Noise Assessment*.
  - This includes detailed modelling of predicated noise emissions from the SPV and assessment of potential auditory injury and behavioural impacts on Snubfin and Humpback Dolphins, in accordance with the US NMFWS criteria (as required by WA EPA), using a risk assessment approach, and finds that potential impacts are negligible.

- EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*
  - This includes best practice impact avoidance, mitigation, monitoring and response actions for Snubfin and Humpback Dolphins in accordance with the impact mitigation hierarchy.

Further assessment is provided for Snubfin Dolphins in Table 5 and for Humpback Dolphins in Table 6 in section 3.3 below, which assess how BKA has taken account of the Conservation Advice documents for these species.

4. When considering potential impacts under the EPBC Act, it is important to give due consideration to the listed threatened species criteria under the EPBC Act significant impact guidelines (DCCEEW 2021). As can be seen from EPBC Referral Report No. 7 - *Commonwealth Matters*, the significant impact guidelines have a focus on conservation at the population level, and it is clear from the assessments in that report that the proposed action is not likely to present a risk of impacts at the population level. Any suggestion to the contrary should be supported with scientific explanation of the bases for the assessment, considering the nature of the proposed operation and associated impact-causing mechanisms, and the proposed impact prevention, mitigation, monitoring and response measures.

3.2 Pathogens & Diseases

3.2.1 DCCEEW request & purpose of this section

1. A pathogen is any organism or agent that causes disease in a host plant or animal, and include viruses, bacteria, fungi and parasites. A disease is a disorder in the structure or function of a plant or animal that causes harm to and potentially death of the plant or animal, usually with certain signs and symptoms.

2. Like all living biota, marine fauna including dolphins and turtles can suffer from a wide range of diseases. As for all living biota, diseases are generally the result of natural causes. However, in some circumstances they can be exacerbated by human activities, for example a reduction in water quality from pollution from land-based industry, which can lower the resistance and immunity of marine fauna to disease, or physical injury to animals that create wounds followed by bacterial infection. Marine pathogens can also be translocated by humans and introduced to new areas, for example via the transfer of aquaculture stock that might carry pathogens to new areas, or via ballast water discharges from vessels.

3. As outlined in section 2 above, item 1.2 of DCCEEW's RFI states:

> *'The department notes that:*
>
> i) *the Marine bioregional plan for the North-west Marine Region,*
> ii) *the Conservation Advice for Orcaella heinsohni (Australian snubfin dolphin),*
> iii) *the Conservation Advice for Sousa sahulensis (Australian humpback dolphin); and*
> iv) *the Recovery Plan for Marine Turtles in Australia;*

identify disease (and pathogens) as pressures/threats to these species.

Please provide further discussion of this threat, together with management measures (mitigation, early-warning monitoring, research programs) aimed at early detection of new diseases affecting populations of the threatened species mentioned above.'

4. The purpose of this section is to provide BK's response to DCCEEW's request relating to pathogens and diseases, including:

   a) a discussion of each of the statutory documents listed in DCCEEW's request (as above), as they relate to pathogens and diseases and to the proposed operation,

   b) a review of the main pathogens and diseases that affect dolphins and marine turtles,

   c) a risk assessment of the potential pathways whereby the proposed operation might potentially introduce pathogens to CG, or cause an outbreak of a disease through other mechanisms; and

   d) proposed management and monitoring actions, as may be relevant given the assessment of potential pathways.

3.2.2 Statutory documents as they relate to pathogens & diseases

1. Table 2 lists each of the statutory documents listed in DCCEEW's request (as above), summarizes their main provisions relating to pathogens and diseases, and their implications for the proposed operation. As outlined in Table 2, the proposed operation will not increase the risk of pathogens and diseases in marine fauna in CG in terms of the pathogen- and disease-related elements contained in each of the listed statutory documents.

TABLE 2: *Statutory documents listed in DCCEEW's request, provisions relating to pathogens and diseases, and implications for the proposed operation*

Document	Provisions relating to pathogens & diseases	Implications for the proposed operation
Marine Bioregional Plan for the North-west Marine Region (Commonwealth of Australia 2012):	The *Marine Bioregional Plan* contains a single reference to 'disease' as being a potential 'pressure' on biodiversity of the region, with potential sources of disease being identified as aquaculture, fishing, tourism and shipping (with only the latter being relevant to the project, as the SPV is a ship).	The *Marine bioregional plan* is not relevant to the proposed action as it applies to Commonwealth waters only, while CG is within internal State waters, landward of the baseline and thus not even in 3 nm coastal State waters. Potential diseases from shipping relate to ballast water discharges, which have been fully addressed in the Referral Reports and the proposed EMP in accordance with both IMO and Commonwealth requirements, as per Commonwealth Environmental Outcome (CEO) 6 - *Marine Pests* in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).* There are no other potential vectors / mechanisms whereby the SPV could cause introductions of diseases of the listed species into CG, as assessed in Section 3.2.5 below.
Conservation Advice for *Orcaella heinsohni* (Australian snubfin dolphin) (DCCEEW 2025):	The *Conservation Advice* states potential links between poor water quality and exacerbation of natural skin diseases in dolphins.	The project will not have negative impacts on water quality, as assessed in accordance with WA EPA guidelines on marine environmental quality and the impact mitigation hierarchy, in Section 9 - *Impact Assessment - Marine Environmental Quality* of EPBC Referral Report No. 4 - *Impact Assessments*.
	The *Conservation Advice* implies that bacterial infections which can result from injuries caused by vessel strikes.	Potential vessel strikes are addressed through prevention, mitigation and monitoring measures, as per CEO 7 - *Vessel Strikes* in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*
	The *Conservation Advice* states that there have been no known mass outbreaks of pathogens in Australian Snubfin Dolphins.	There are no operational mechanisms whereby the operation of the SPV in CG would change this situation, by causing a mass outbreak of pathogens in Australian snubfin dolphins.

Document	Provisions relating to pathogens & diseases	Implications for the proposed operation
Conservation Advice for *Sousa sahulensis* (Australian humpback dolphin) (DCCEEW 2025):	As per Snubfin Dolphins above.	As per Snubfin Dolphins above.
Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia 2017):	The *Recovery Plan* contains a dedicated section on diseases and pathogens (section 4.1-4M), and states that natural diseases in marine turtles may be exacerbated by poor water quality, primarily from pollution from land-based industry and other sources.	As above, the proposed operation will not have negative impacts on water quality, so this is not a risk for this project.
	The *Recovery Plan* also states that disease outbreaks in food sources, such as seagrass, can indirectly affect the health of marine turtles.	This is not a risk for this proposed action as there are no seagrasses in CG and the area does not provide foraging habitat for marine turtles, as described in Section 6 - *Benthic Communities & Habitats*, of EPBC Referral Report No. 2 - *Setting & Existing Environment.*
	The *Recovery Plan* also states that *'To date, there are no recorded occurrences of diseases and pathogens affecting the viability of a marine turtle stock in Australia.'*	There are no operational mechanisms whereby the operation of the SPV in CG would change this situation, by affecting the viability of the marine turtle stock in the area through diseases and pathogens.

3.2.3 Pathogens and diseases in dolphins

1. All animals have communities of bacteria living on their skin, in their tissues and digestive systems, and healthy bacteria loads are critical to dolphins. For example, *Lactobacillus* strains with beneficial probiotic features have been identified in the gastrointestinal tract of bottlenose dolphins. Potentially pathogenic bacteria may also reside in tissues and have no health consequences, so presence alone does not signal a cause for poor health (Diaz et al. 2013).

2. Like all living biota, dolphins can be affected by a wide range of pathogens and suffer from a wide range of diseases. Dolphin diseases can be caused by viral, bacterial and fungal infections, as well as parasitic infestations and other disorders. Common viral diseases are caused by morbilliviruses and herpesviruses, while bacterial diseases include brucellosis and gastric disorders from helicobacter. Parasites like lungworms and tapeworms can also affect dolphins (Field 2024) (Barratclough et al 2019) (Wildlife Health Australia 2020) (Woodard et al 1969).

3. Pathogens that may impact on the health of coastal dolphins can be endemic in the population, introduced from within their natural ecosystem, or introduced by human activities, such as via wastewater discharges (Jaing et al. 2015).

4. Table 3 summarizes some of the main pathogens and their associated diseases in dolphins.

TABLE 3: *Examples of some of the main pathogens and their associated diseases in dolphins*

NOTE: This list is not intended to be exhaustive. It presents key examples from the main pathogen groups so as to illustrate the range of potential risk pathways and factors in relation to the proposed operation.

Pathogen & Health Effects in Dolphins	**Mortality?**	**Typical Causes**	**Project-related risks**
VIRUSES:			
Cetacean morbillivirus (CeMV): Pneumonia, encephalitis and immuno-suppression, which in combination greatly impair the cetacean's ability to swim and stay afloat (Guardo et al 2005) (Stone et al 2001).	**Yes - Including mass mortalities** Since its discovery in 1987, CeMV has been responsible for numerous epizootic outbreaks causing mass mortality in cetacean populations (Guardo et al 2005). CeMV has been determined as the cause of death in Australian inshore bottlenose dolphins (*Tursiops truncates*), Indo-Pacific bottlenose dolphins (*T. aduncus*) and short-beaked common dolphins (*Delphinus delphis*) (Stephens at al 2014) (Stone et al 20011) (Kemper et al 2016). There are currently no records of CeMV being found in Australian Snubfin and Humpback Dolphins, which are the only species found in CG.	**CeMV occurs naturally in various cetacean species.** Some species may act as reservoir hosts, without health impairment. It is assumed that the main route of transmission between dolphins is through aerosolized virus when they breath at the sea-surface, facilitated by their gregarious nature (Van Bressem et al 2014). CeMV can be highly contagious and unusual mortality events usually occur in naïve populations not previously exposed to the virus (WHA 2023a). Unusual mortality events associated with CeMV may be stimulated by compounding factors that reduce dolphin immunity, such as a prolonged period of elevated sea temperature, algae bloom, coinfections with other pathogens etc (WHA 2023a).	**The project will not affect the risk of CeMV in CG dolphins.** In order to be introduced into CG, CeMV would require a dolphin host - the SPV will not provide a biological pathway for introduction. The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to CeMC in CG dolphins.
Herpesviruses: **Herpesviruses** are not uncommon in various dolphin species. Infected animals can show no symptoms or exhibit localised genital and dermal lesions, through to systemic disease when compounded by other infections such as CeMV **(Bento et al 2019).**	**Not usually** Individual mortality can occur if compounded by other infections – but not mass mortalities. In extreme cases individual dolphins can die if h**erpesvirus infection is compounded by other factors including CeMV and general immune-suppression. Mass mortalities have not been attributed to** h**erpesvirus themselves (Bento et al 2019).**	**Herpesviruses occur naturally in dolphins. Transmission between individuals is via mucous transfer during sexual activity and similar physical contact.** **Non-symptomatic carriage of the virus can become symptomatic when animals become stressed and immune-depressed, e.g. through changes in environmental conditions and infections by other pathogens (Field 2025).**	**The project will not affect the risk of herpesviruses in CG dolphins.** There is no mechanism whereby the project could cause increased sexual and other physical contact between dolphins. The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to herpesviruses in CG dolphins.

Pathogen & Health Effects in Dolphins	**Mortality?**	**Typical Causes**	**Project-related risks**
Adenoviruses: **Adenoviruses are common in vertebrate animals and cause cold- and flu-like symptoms.** **In addition to** respiratory symptoms, some adenoviruses cause ocular, gastrointestinal, hepatic or encephalitic pathologies (Rubio-Guerri et al 2015). Rare cases of adenoviruses been detected in captive cetaceans, with no clear correlation between presence of the virus and disease status (Rubio-Guerri et al 2015). In general, they are not known to be a disease risk for wild dolphins.	**None known**	N/A – not known to affect wild dolphins.	N/A – not known to affect wild dolphins.
Poxviruses: **Poxviruses cause smallpox and similar diseases in vertebrate animals.** Poxvirus infections of dolphins are characterized by pinhole or ring-like skin lesions that appear as solitary or coalesced circular gray blemishes (Geraci et al 1979) (Fury & Reif 2012).	**None known** Poxvirus infection has never been documented as the cause of death in adult dolphins (Stephen et al 2011).	Stress, environmental conditions and general health appear to play a major role in the clinical manifestation of dolphin pox (Fury & Reif 2012).	**The project will not affect the risk of poxviruses in CG dolphins.** The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to poxviruses in CG dolphins.
BACTERIA:			
Brucella: **Brucella** bacteria are found widely throughout vertebrate animals, and infections can lead to placentitis, abortions, pneumoni and other issues. Marine strains of *Brucella* are genetically and biochemically distinct. Isolates from cetaceans have been proposed as a new species, *B. ceti* (WHA 2020). There have been very few cases of *B. ceti* being detected in marine mammals from Australian waters (isolated individuals subject to autopsy following death by other causes). Marine mammals carrying *Brucella* may not show any clinical signs. Stranded dolphins in Costa Rica showed symptoms of neurological illness possibly caused by *B. ceti* (Hernandez-Mora et al 2008).	**Not clearly established.**	Microbiological and serological evidence suggest that cetacean species are natural hosts for *B. ceti* (WHA 2020). The routes of transmission of marine *Brucella* have not been definitively established. Possible routes include sexual transmission, bites when fighting and ingestion of infected prey items (fish etc) (WHA 2020).	**The project will not affect the risk of Brucella infection in CG dolphins.** There is no mechanism whereby the project could increase the likely routes of transmission.

Pathogen & Health Effects in Dolphins	**Mortality?**	**Typical Causes**	**Project-related risks**
Helicobacter: *Helicobacter spp.* are bacteria that can live in the lining of the stomach of vertebrates. Some species can cause stomach inflammation (gastritis) and more serious conditions such as stomach ulcers and cancer. Some species such as *H. delphinicola and H. cetorum have been found in the gastrointestinal tracts of dolphins*, and have been linked to chronic gastric diseases, especially in captive dolphins (Segawa et al 2023) (Gonzalez-Bergner et al 2013).	**Not clearly established.** While there is evidence that there may be an association between *Helicobacter* and gastric diseases in dolphins, the role that this bacterium plays in these illnesses, and whether or not the illnesses result in mortality, is unclear.	The routes of transmission of *Helicobacter* in dolphins have not been definitively established. Possible routes include bites when fighting and ingestion of infected prey items (fish etc). Transmission between captive dolphins can occur quickly within enclosed pools (Segawa et al 2024).	**The project will not affect the risk of Helicobacter infection in CG dolphins.** There is no mechanism whereby the project could increase the likely routes of transmission.
FUNGAE:			
Aspergillus: Aspergillus molds are Fungai found in natural environments. The spores can be inhaled by vertebrates, usually with no negative effects. However, they can cause allergic reactions, chronic lung conditions and invasive disease that spreads to brain, kidneys, lungs or other organs. Fatal pulmonary aspergillosis has been diagnosed in several species of captive and stranded dolphins, globally (Garcia-Bustos et al 2025).	**Individuals only – not population level** Usually when compounded by other infections - especially morbillivirus.	The routes of transmission of *Aspergillus* in dolphins have not been definitively established. The most likely route is directly from the surrounding environment. Many animals assessed were also infected with other pathogens, especially viruses, suggesting that environmental stress and immune-suppression are key factors contributing to *Aspergillus* infections in dolphins (Garcia-Bustos et al 2025).	**The project will not affect the risk of *Aspergillus* in CG dolphins.** The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to *Aspergillus* in CG dolphins.
Cryptococcus: *Cryptococcus* are Fungi that are found widely in the environment which can be acquired by mammals through inhalation of cryptococcal aerosols, potentially causing fatal fungal infection of mainly the lungs, presenting as a pneumonia, and in the brain, where it appears as a meningitis. *Cryptococcus* has been found to be present in and affect dolphins, including manifesting as cryptococcal pneumonia (Miller et al 2002).	**Individuals only – not population level** Usually when compounded by other infections - especially morbillivirus.	The routes of transmission of *Cryptococcus* in dolphins have not been definitively established. The most likely route is from the surrounding marine environment and inhalation of cryptococcal aerosols, including transmission between dolphins when they breath together at the sea-surface (Miller et al 2002). Many animals assessed were also infected with other infective agents, especially viruses, suggesting that environmental stress and immune-suppression are key factors contributing to *Cryptococcus* infections in dolphins (Miller et al 2002).	**The project will not affect the risk of *Cryptococcus* in CG dolphins.** The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to *Cryptococcus* in CG dolphins.
Candida: *Candida* is a yeast that can be naturally present in mucous membranes of the mouth, throat, gut, vagina and penis of mammals, without causing negative health impacts. It can cause health symptoms when it grows	**None known** *Candida* infection has never been documented as the cause of death in dolphins (Garcia-Bustos et al 2024).	As with all mammals, *Candida* can be present naturally in Dolphins. Associated disease symptoms have only been documented in captive dolphins and are likely caused by environmental stress and/or immuno-suppression in the host (Garcia-Bustos et al 2024).	**The project will not affect the risk of *Candida* in CG dolphins.** The SPV will not cause changes to marine environmental factors

Pathogen & Health Effects in Dolphins	**Mortality?**	**Typical Causes**	**Project-related risks**
out of control due to changed environmental conditions and/or immuno-suppression in the host. In captive dolphins, when the animals are more susceptible to stress, *Candida can cause* respiratory tract infections, skin lesions and systemic fungal dissemination (Garcia-Bustos et al 2024). Candida has been sampled from the blow-hole, anus, feces and gastric fluid of wild dolphins, with no indication of disease (Garcia-Bustos et al 2024).			such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to *Candida* in CG dolphins.
PARASITES:			
Lungworms: Parasitic lungworms are extremely common in many dolphin species. Most host animals seem to be able to keep them under control, without adverse health effects (Woodard et al 1969) (Caldwell et at 1968). Severe infections have been linked to secondary bacterial infections and the subsequent onset of pneumonia, and may contribute to fatalities, including strandings (Pool et al 2024).	**Not usually** Mortality can occur if infections are severe and compounded by other infections and immuno-suppression – but not mass mortalities.	It is unlikely that larvae directly reinfect the same individual hosts. Transmission is likely to be horizontal through contact with infected spray or water or, more likely, with infected prey (Measures 2001).	**The project will not affect the risk of lungworms in CG dolphins.** There is no mechanism whereby the project could cause increased transmission of lungworms between dolphins. The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to lungworms in CG dolphins.
Intestinal worms: A range of intestinal worms are common in dolphins. Most host animals seem to be able to keep them under control, without adverse health effects.	**None known**	Transmission is likely to be via infected prey.	**The project will not affect the risk of intestinal worms in CG dolphins.** There is no mechanism whereby the project could cause increased transmission of intestinal worms between dolphins.
Toxoplasmosis: ***Toxoplasmosis*** is caused by *Toxoplasma gondii*. These are parasitic alveolates, which are eukaryotic unicellular organisms that penetrate individual cells of host organisms. They infect many types of mammals, including humans and dolphins.	**Implicated but not proven** Toxoplasmosis has been implicated (but not proven) as a cause of death in Hector's and Māui dolphins, which are endemic to New Zealand (Roe et al 2013) (www.doc.gov.nz). Strains of *T. gondii* were found in 13 dead stranded dolphins,	Cats are the only animal in which *T. gondii* can sexually reproduce. The parasite creates oocysts (eggs) in the guts of cats that are spread into the environment via cat feces, where they can survive for many months. Researchers in New Zealand suggest that rainwater run-off can transport the oocysts from cat feces into stormwater drains, streams and rivers and then to the	**The project will not affect the risk of *Toxoplasmosis* in CG dolphins.** There is no mechanism whereby the project could cause increased transmission of *T. gondii* oocysts from cats to dolphins in CG.

Pathogen & Health Effects in Dolphins	**Mortality?**	**Typical Causes**	**Project-related risks**
It is rare for host animals with a fully functioning immune system to develop severe symptoms following infection. Hosts with suppressed immune systems can develop a wide range of negative and sometimes severe disease symptoms through to mortality (https://www.cdc.gov/).	however there were multiple other pathogens and disease symptoms present (Roe et al 2013).	sea, where dolphins can become infected when they ingest contaminated water or prey (www.doc.gov.nz). However, this has not been conclusively proven.	

3.2.4 Pathogens and diseases in marine turtles

1. Like dolphins and other animals, marine turtles have communities of bacteria living on their skin, in their tissues and digestive systems, and healthy bacteria loads are critical to turtles. Potentially pathogenic bacteria may also reside in tissues and have no health consequences, so presence alone does not signal a cause for poor health (Diaz et al. 2013).

2. Like dolphins and other animals, marine turtles can be affected by a wide range of pathogens and suffer from a wide range of diseases. Turtle diseases can be caused by viral, bacterial and fungal infections, as well as parasitic infestations and other disorders. Common viral diseases are caused by herpesviruses, while fungal diseases include egg-fusariosis, resulting in embryo death and a reduction in hatching success. Various parasites including flukes (blood worms) can also affect marine turtles. Conditions such as 'soft-shell disease' can be caused by poor nutrition when key food sources, such as seagrasses for Green Turtles, are reduced due to environmental impacts.

3. Table 4 summarizes some of the main pathogens and their associated diseases in marine turtles.

TABLE 4: *Examples of some of the main pathogens and their associated diseases in marine turtles*

NOTE: This list is not intended to be exhaustive. It presents key examples from the main pathogen groups so as to illustrate the range of potential risk pathways and factors in relation to the proposed operation.

Pathogen & Health Effects in Marine Turtles	**Mortality?**	**Typical Causes**	**Project-related risks**
VIRUSES:			
***Fibropapillomatosis* (FP).** Associated with Chelonian alphaherpesvirus 5 (ChAHV5): Fibropapillomatosis (FP) is a disease mainly affecting Green Turtles (*Chelonia mydas*) that causes benign but debilitating tumors to grow on their skin and internal organs. It is strongly linked to the Chelonian alphaherpesvirus 5 (ChHV-5) and is believed to spread through direct contact with other infected animals or contaminated water (NOAA 2025). While the disease can range from mild to severe, large tumors can hinder a turtle's ability to forage, swim and avoid predators, often leading to death (NOAA 2025).	**Individuals only – not population level** (usually when compounded by other infections).	While FP is associated with the presence of ChAHV5, the exact cause has not been established. The development of tumors is likely caused by multiple factors, including infection by other pathogens and immuno-suppression from environmental stress (NOAA 2025). It is known that FP can be transmitted between turtles, but it is not known how this occurs. Other marine animals may play a role. The associated herpesvirus has been found in parasitic marine leeches that attach to turtle skin and suck their blood, and on the mouths of cleaner fish. The virus also will survive in seawater and may be transmitted between turtles (NOAA 2025).	**The project will not affect the risk of FP in CG turtles.** There is no mechanism whereby the project could cause increased transmission of FP between turtles. The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to FP in CG turtles.
BACTERIA:			
Streptococcus iniae *S. iniae* is a bacterium that is widely present in the marine environment and in teleost fishes and other marine animals globally, usually without causing diseases. Under favourable environmental conditions for the bacteria and/or stress conditions in the host animals, the bacteria can multiply and cause disease and death in the hosts (Agnew & Barnes 2007) (Young et al 2020).	**Not proven for turtles.** **Yes for fishes - Including mass mortalities.** *S iniae* is mainly a problem in high-intensity, closed-system, fish farming operations, where it can cause mass-mortalities of the farmed fish (Agnew & Barnes 2007). A 'wild' multi-fish species mass mortality event was recorded north of Broome in WA in March 2016. An estimated 17,000 dead and moribund fish from several different species were observed along a remote 70 km stretch of beach, attributed to an outbreak of *S. iniae* (Young et al 2020). Amongst the dead fish were small numbers of dead post-hatchling flat-back turtles and seasnakes. Twelve dead post-hatchling flat-back turtles were collected for analysis. None had any gross or microscopic pathological abnormalities. Initial gram stain tests for bacterial infection were	Outbreaks of *S. iniae* are caused when environmental conditions are favourable for the bacteria and/or cause stress in the host animals (Agnew & Barnes 2007). The 2016 'wild' event near Broome was linked to an extended period of above average sea temperatures (Young et al 2020).	**The project will not affect the risk of *S. inae* infection in in marine turtles.** The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to FP in CG turtles.

Pathogen & Health Effects in Marine Turtles	**Mortality?**	**Typical Causes**	**Project-related risks**
	indeterminant (Young et al 2020). The dead turtles were frozen with fish and seasnake samples, for future analyses, which was undertaken over 12 months later. *S. iniae* was isolated from just three of the turtles (Young et al 2020). This extremely limited sampling and low rate of return (*S. inae* found in just 3 of 12 animals), in no way links *S. iniae* to the death of the turtles. The presence of *S. iniae* was perhaps not surprising given the prevalence of the bacteria in the masses of fishes around the turtles, and the potential for cross-contamination, both in the environment and between samples. It is possible and perhaps even likely that the small numbers of dead post-hatchling turtles found amongst the masses of dead fishes could have died from causes other than *S. iniae*, including deoxygenation of the seawater environment from the masses of rotting dead fish, and noting that post-hatchling turtles are tiny and highly vulnerable to environmental impacts.		
FUNGAE:			
Fusarium spp These fungi are ubiquitous in terrestrial soils, and are often found naturally in healthy animals. They can become pathogenic when soils are disturbed and the host is immunocompromised due to other stressors. Some species, particularly from the *Fusarium solani species complex* (FSSC), can affect turtle eggs and cause egg fusariosis, resulting in embryo death and a reduction in hatching success (Gleason et al 2020). Fusariosis has been identified in the eggs of all seven species of marine turtles in various parts of the world (Gleason et al 2020).	**Yes – outbreaks can cause a reduction in egg hatching success.**	Phillott (2002) provides a clear description of the causal mechanisms of fusariosis in marine turtle eggs, as follows: Fusarium fungi are ubiquitous in terrestrial soils including in beach sands that are used by turtles for nesting – so they are often naturally present in the sands of turtle nesting beaches. Fusarium spores and hyphae in the sand can be disturbed when the mother turtle digs and then covers the nest during the nesting process, and may settle on the exterior of the eggs. Infection of viable eggs is inhibited by the anti-fungal properties of mucus secreted by the mother during egg laying, and the egg albumen and dense ultra-structure of the eggshell.	**The project will not affect the risk of *Fusarium* infections in in marine turtles.** There is no mechanism whereby the project could cause or facilitate increased natural failure of turtle eggs in nests in the CG area, which would in turn drive an increase in *Fusarium* infections. The project does not involve any land-based activities and will not disturb any turtle nesting beaches. Except for one site protected behind mangroves at Barnett Point inside CG (6 km from the closest boundary of the POA), the turtle nesting beaches in the CG area are all located on the

Pathogen & Health Effects in Marine Turtles	**Mortality?**	**Typical Causes**	**Project-related risks**
		Within the nest, fungi first appear on an egg that has failed (died) from other (natural) causes. Using the failed egg as a nutrient source, *Fusarium* hyphae then expand to adjacent, viable eggs, spreading the infection. Embryo mortality as hyphae spread across viable eggs is probably due to inhibition of the respiratory surface area or calcium deprivation. The probability and rate of Fusarium infections increases in nests with characteristics that enhances natural egg failure, such as nests subject to tidal inundation, higher or lower temperatures or disturbance by predators.	seaward coast outside of CG, well-distant from the POA.
PARASITES:			
Coccidiosis Coccidiosis is a parasitic disease of the intestinal tract of animals caused by the protozoan *Caryospora chelonae*. It was first described in 1991, from an epidemic affecting Green Turtles (*Chelonia mydas*) in south-east Qld and northern NSW (Gordan 2005) (Gordan et al 1993). Subsequent epidemics and sporadic cases have been recorded in Qld and NSW (Chapman et al 2016).	**Yes - Including mass mortalities** Most turtle mortalities from *Coccidiosis* occur in older animals (Chapman et al 2016).	The full life cycle of *C. chelonae* is not yet fully understood, but it is believed to be a direct life cycle, where Green Turtles are the only known natural hosts (WHA 2023b). For most coccidian protozoans, the parasite is transmitted via the fecal-oral route, and after ingestion, the sporozoites penetrate the hosts intestinal epithelial cells, where they cause disease and shed oocysts in the feces, which then sporulate in the environment to become infectious (Upton & Sundermann 1990).	**The project will not affect the risk of *Coccidiosis* in CG turtles.** Green Turtles are generally not found in CG, where seagrasses are not present due to the extreme natural turbidity and highly dynamic seabed. There is no mechanism whereby the project could cause increased transmission of *Coccidiosis* between turtles.
Spirorchidiasis *Spirorchidiasis* is caused by a range of digenetic trematodes or flukeworms. They are found throughout the world and have been recognised in Green, Loggerhead and Hawksbill Turtles (WHA 2023) and in Flatback Turtles (which are the main species found in the CG area) (Young 2022). The 1-3 mm adult spirorchids occur in the heart and greater blood vessels. Eggs are laid, which may become trapped in terminal blood vessels producing a granulomatous response (clusters of inflamed tissue and immune cells) (WHA 2023b).	**Yes** Mortality can occur if infections are severe and compounded by other infections and immuno-suppression (Young 2022) (Flint et al 2010).	Flukeworms in the heart and blood vessels of turtles may penetrate the gut and are passed via the feces into the water. Once in the water they hatch to produce miracidia which penetrate the intermediate host, likely a mollusc. The miracidia develop into cercariae, which either leave the intermediate host or are eaten with it, and penetrate the skin or mucous membranes of the definitive turtle host where they mature in the blood vessels (WHA 2023b).	**The project will not affect the risk of *Spirorchidiasis* in CG turtles.** There is no mechanism whereby the project could cause increased transmission of *Spirorchidiasis* between turtles. The SPV will not cause changes to marine environmental factors such as sea temperature, salinity pH, turbidity, nutrients, chemicals, other water quality parameters etc, which in turn could reduce immunity to

Pathogen & Health Effects in Marine Turtles	**Mortality?**	**Typical Causes**	**Project-related risks**
			Spirorchidiasis in CG turtles.
OTHER CONDITIONS ***Soft-shell Syndrome*** In 2023, researchers at the University of the Sunshine Coast investigated *soft-shell syndrome*, a new disorder affecting Green Turtles (*Chelonia mydas*) in Queensland, particularly on the Fraser Coast. The condition causes skin and scales to shed and expose the shell's bone (Kay 2023).	**Yes** Mortality can occur if the condition is severe and compounded by other infections and immuno-suppression (Kay 2023).	The condition is thought to be linked to the loss of the primary seagrass food source of Green Turtles, caused by floods, potentially forcing them to eat other less nutritious food items. This is likely a form of metabolic bone disease caused by a lack of proper nutrition (Kay 2023). Cases have fallen in the Fraser Coast area as seagrass beds have recovered (Townsend pers. comms 2025).	**The project will not affect the risk of *Soft-shell Syndrome* in CG turtles.** Green Turtles are generally not found in CG, where seagrasses are not present due to the extreme natural turbidity and highly dynamic seabed. Other turtle species also do not feed in CG due to lack of their specific food sources.

3.2.5 Potential pathogen pathways & disease mechanisms of the proposed operation

1. As detailed in EPBC Referral Report No. 1 - *Description of the Proposed Action & Regulatory Framework*, the proposed operation involves a single Sand Production Vessel (SPV) based on the design of a large Trailer Suction Hopper Dredger (TSHD), which will only operate in CG, loading sand, for up to two-days every two weeks. Between each sand-loading cycle the SPV will sail to Asia to deliver the sand, and then return to CG, with the round-trip taking two-weeks.

2. In order to assess the potential for the proposed operation to cause or increase the incidence of diseases in marine fauna, and especially dolphins and marine turtles, in CG, it is necessary to consider potential pathogen pathways and disease-causing mechanisms that could be presented by the SPV. This should include consideration of the biology and transmission pathways of the main pathogens of concern in dolphins and marine turtles, and how these relate to the operational mechanics of the SPV, as illustrated in Tables 3 and 4 above.

3. The four main potential pathogen pathways and disease-causing mechanisms associated with the SPV are a) discharges of ballast water, b) vessel strikes and subsequent infection of the injury, c) disturbance of seabed sediments and potential mobilization of pathogens in the sediments, and d) changes to environmental conditions creating ecological stress. Each of these is discussed as follows:

    a) Discharge of ballast water:

    As per most commercial vessels, in order to maintain safe-stability and structural integrity, the SPV will carry ballast water when it is not carrying cargo (in this case when it is not carrying sand). The ballast water will be discharged on each arrival at CG, and sand will be loaded. If the ballast water is not managed and treated properly, it could potentially introduce any marine pathogens that may have been taken on at the source port.

    This potential risk will be prevented and mitigated through the measures described under CEO 6 - *Marine Pests* in the C-EMP (EPBC Referral Supplementary Report No. 3). These measures are based on compliance with the *International Convention for the Control and Management of Ships' Ballast Water and Sediments* (BWM Convention), and the Commonwealth *Biosecurity Act* and *Regulations*, which *inter alia* implement the BWM Convention in Australia. Prevention and mitigation measures that will be implemented include:

    - fitting the SPV with ballast water treatment system(s) that meet the type-approval and efficacy standards of the BWM Convention and as required under the Commonwealth *Biosecurity Act* and *Regulations*, and ensuring that all ballast water on the SPV is treated before discharge,

    - implementing a shipboard Ballast Water and Sediment Management Plan, as required under the BWM Convention and *Biosecurity Act* and *Regulations*; and

    - recording and reporting all of the SPV's ballast water management operations, as required under the BWM Convention and *Biosecurity Act* and *Regulations*.

The EPBC Act Significant Impact Guidelines recognize the effectiveness of the above arrangements. Additionally, the Commonwealth Government in cooperation with the WA State Government is establishing a biosecurity compliance facility at the Port of Wyndham, as part of expansion of international trade through that port, which will be staffed by trained biosecurity compliance officers. This will provide a locally-based capability that can also undertake monitoring and enforcement of the SPV's compliance with ballast water management and treatment requirements.

It should also be noted that the typical pathways and causes of the pathogens listed in Tables X and X above do not involve transfer from one part of the world to another in ship's ballast water. Most of them are naturally present in the animals' immediate environment and/or in the host animals themselves, and only multiply and become pathogenic when environmental conditions are favourable for the pathogen and/or stress conditions affect the host animals.

Given the points above, it can be concluded that the residual risk of ballast water discharges from the SPV potentially causing pathogens and diseases in CG, is negligible.

b) Vessel Strikes:

Vessel strikes on marine fauna including dolphins and turtles can cause lacerations and other injuries, which can be susceptible to bacterial and other infections, compounding the strike injury and sometimes leading to death of the animal in severe cases. This potential risk will be prevented and mitigated through the following measures, as described under CEO 7 - *Vessel Strikes* in the C-EMP (EPBC Referral Supplementary Report No. 3):

- The likelihood of encounters between the SPV and dolphins and marine turtles is extremely low.
- The numbers of dolphins and marine turtles that utilize CG are low and they only occasionally pass through POA (as indicated by site surveys).
- Snubfin and Humpback Dolphins are naturally shy and elusive, which unlike other dolphin species, avoid vessels.
- The SPV will only be present in CG for one to two days every two weeks, with zero presence for 86% of the time throughout the project lifetime.
- The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away.
- The SPV will implement a soft-start procedure and Marine Fauna Observation and Avoidance (MFOA) measures, with an extended observation zone of 1km and an extended exclusion zone of 500m.
- The POA is an extremely large area (100 km^2), providing significant space for the SPV to implement marine fauna avoidance measures, and the main body of CG is significantly larger (nearly 2000 km^2), providing significant space for marine fauna.
- In the highly unlikely event of a vessel strike, if feasible and safe to do so, the animal will be rescued and sent to a wildlife rescue centre in Darwin for treatment and rehabilitation, including to prevent / address potential infection.

Given the points above, it can be concluded that the residual risk of vessel strikes from the SPV occurring is very low, and of causing subsequent infections in dolphins and turtles in CG is negligible. In the highly unlikely event that a vessel strike and subsequent infection does occur, the result may not be fatal for the animal, and would not cause population-level impacts.

c) Disturbance of seabed sediments:

In their communications about the pathogens and diseases issue, DCCEEW has raised the possibility that the sand-loading operation will physically disturb the seabed sands, potentially mobilizing any pathogens that might be present in the sand (e.g resting cysts of dinoflaggellates), and spreading them into the water column where they may in turn infect marine fauna and cause diseases.

This mechanism could be plausible in locations with calm seas, low tidal current velocities and quiet seabed conditions, where sediments can accumulate and are not subject to constant natural suspension, mobilization and mixing, and where pathogens can therefore also accumulate over time. This can be the case in certain sheltered, enclosed bays and ports and harbours. However, this is not the case in CG.

The seabed in the POA where sand-sourcing is proposed, comprises highly dynamic sand-waves, which are constantly mobilised, suspended and mixed by the extreme tidal currents in CG (measured in excess of 2 m/s or >4 knots). Repeat, high-resolution hydrographic surveys in the POA measured horizontal migration of sand-waves across the seabed by over 10m during a single lunar tidal cycle (27 days) (see Referral Report No. 8 - *Full Modelling*). It is highly implausible that pathogens and cysts could be 'buried' and persist in such highly dynamic sands. The seabed-sands in the POA are constantly disturbed naturally by the extreme tidal currents (every six-hours in perpetuity), and even if they did host pathogens and cysts, these would be mobilized into the water column naturally, through the constant suspension and mixing-effect of strong tidal currents. The proposed sand-loading operation will not change this. A detailed description of the environmental conditions in the POA is provided in sections 5, 6.4.2, 6.4.3, 6.4.4 and 6.4.4.8 of EPBC Referral Report No. 2 - *Setting & Existing Environment*, and also in Referral Report No. 8 - *Full Modelling.*

It should also be noted that the typical pathways and causes of the pathogens listed in Tables 3 and 4 above do not involve phases where they reside in highly-mobile, constantly-disturbed seabed sands. Most of them are naturally present in the animals' immediate environment and/or in the host animals themselves, and only multiply and become pathogenic when environmental conditions are favourable for the pathogen and/or stress conditions affect the host animals.

Given the points above, it can be concluded that the residual risk that the proposed sand-loading could cause disturbance and mobilization of pathogens in seabed sands, to in turn cause diseases in dolphins, marine turtles and other marine fauna in CG, is negligible.

d) Changes to environmental conditions creating ecological stress:

As outlined in Tables 3 and 4 above, most of the key pathogens of dolphins and turtles are naturally present in the animals' immediate environment and/or in the host animals themselves, and only multiply and become pathogenic when environmental conditions are favourable for the pathogen and/or stress conditions affect the host animals, suppressing their immune systems. Therefore, any mechanisms whereby the proposed operation might affect environmental conditions in CG, including sea temperature, salinity pH, turbidity, nutrients, chemicals and other water quality parameters, could in-turn cause environmental stress and immunosuppression in dolphins turtles, and thus stimulate outbreak of disease, including those listed in Tables 3 and 4.

As described in Annex 11 - *Sediment Contamination Assessment* of EPBC Referral Report No. 2 - *Setting & Existing Environment,* the seabed sediments in the POA are free of contaminants as assessed in accordance with the *National Assessment Guidelines for Dredging* (NAGD) (Commonwealth of Australia 2009). There is therefore no potential for the proposed sand-sourcing operation to release contaminants from the seabed sands.

As detailed in Section 9 (Marine Environmental Quality) of Referral Report No. 4 - *Impact Assessments*, the proposed operation will not cause negative impacts on marine environmental quality in CG. The proposed operation does not involve any land-based facilities, infrastructure or processes that could be potential sources of pollution discharges to the marine environment. There will be no refuelling of the SPV when present in Australian waters. The SPV will comply in full with the *International Convention for the Prevention of Pollution from Ships* (MARPOL Convention), and the Commonwealth *Protection of the Sea (Prevention of Pollution from Ships) Act* (which implements MARPOL in Australia). There will be no discharges of vessel operational wastes (sewage, garbage and waste oil) or other pollutants from the SPV into Australian waters. The sand-loading will be a purely mechanical operation with no use of chemicals.

As detailed in EPBC Referral Report No. 8 - *Full Modelling*, natural turbidity in CG is extreme and any changes from the proposed sand sourcing will be negligible.

As detailed in Referral Report No. 8, the water column in CG is extremely well-mixed due to the extreme tidal currents, and is therefore well oxygenated. There is no mechanism whereby the proposed sand sourcing will alter oxygenation of the water column and cause any form of hypoxia.

Given the points above, it can be concluded that the residual risk that the proposed operation could potentially cause environmental stress in CG, to in turn cause immunosuppression and diseases in dolphins, marine turtles and other marine fauna in CG, is negligible.

3.2.6 Best practices from other similar projects

1. When assessing potential environmental impacts and risks and developing environmental management measures for a proposed project, it is important to benchmark with other similar projects, and to identify best-practices that have been applied to other similar projects, that might be applicable to the proposed project.

2. The proposed project is essentially a dredging operation, using a TSHD with a suction-arm and drag-head that is very similar to those used by other TSHD's in dredging projects across Australia every year, for many decades now.

3. Repeated requests have been made by BK to DCCEEW to provide examples of other similar projects (i.e. dredging projects) in Australia, where pathogens and diseases have been an issue, and what measures DCCEEW has required to address this issue – so that BK can assess and apply best practice. Such advice has not been provided by DCCEEW.

4. BK and its consultants are extremely familiar with dredging projects and their associated environmental management measures across Australia for many decades. Based on this combined experience and a comprehensive review of environmental assessment reports, environmental management plans and regulatory permit conditions for multiple, recent major dredging projects around Australia, the only cases where pathogens and diseases have been included as an issue, is in relation to dinoflagellate cysts. In some environmental settings there is potential for dinoflagellate cysts to be present in dredge spoil that is dumped at sea, under the Commonwealth *Environment Protection (Sea Dumping) Act*. No other examples where pathogens and diseases have been included as an issue in relation to dredging projects that are operationally similar to the proposed CG operation, have been identified. The lack of examples from DCCEEW vindicates this review.

5. Dinoflagellate cysts are not an issue for this proposed project. As outlined under 2c) above, it is highly implausible that cysts could be 'buried' and persist in the highly dynamic sands in the POA. The seabed-sands in the POA are constantly disturbed naturally, by the extreme tidal currents (every six-hours in perpetuity). Even if the seabed sands did host cysts, these would be mobilized into the water column naturally, through the constant suspension and mixing-effect of the tidal currents. The proposed sand-loading operation will not change this. The proposed operation will also not dump the loaded sand at sea, as is done for conventional port dredging – the sand will be retained onboard the SPV for export to the sand delivery port in Asia.

6. The fact that the broader issue of pathogens and diseases and potential impacts on marine fauna is not included as an environmental issue, and has not required specific environmental management measures, for multiple and ongoing dredging projects around Australia for many decades, clearly indicates that it is not seen as a plausible risk by regulators, scientists and stakeholders.

7. As reported in EPBC Act Referral Report No. 6 - *Consultation*, BK has undertaken a comprehensive consultation process with a wide range of stakeholders. These include Traditional Owners, Commonwealth and State regulatory and conservation agencies, local government, marine scientists, the commercial and recreational fishing sectors and environmental NGOs, as well as a seven-day State public comment period and 10-day Commonwealth public comment period. Apart from DCCEEW, no stakeholders have raised pathogens and diseases in marine fauna as an issue of concern in relation to the proposed project.

3.2.7 Overall assessment of risk & proposed monitoring measures

1. Overall, given all of the points under the sections above, it can be concluded that the residual risk that the proposed operation could potentially cause diseases in dolphins, marine turtles and other marine fauna in CG, is negligible, and targeted management measures are therefore not required.

2. Never-the-less, as precautionary measures, BK proposes to including the following monitoring and response measures (while noting that any signs of diseases in marine fauna in CG are highly unlikely to be caused by the proposed operation, and may well be natural occurrences):

    a) monitoring for signs of pathogens and diseases in marine fauna as part of the Marine Fauna Observation monitoring program,

    b) reporting any signs of pathogens and diseases in marine fauna to relevant parties,

    c) should diseased animals be encountered, if appropriate, feasible and safe to do so, rescue the animal and send to a wildlife rescue centre in Darwin for treatment and rehabilitation, and if the animal is dead, send for autopsy; and

    d) supporting the WA Department of Biodiversity Conservation & Attractions (DBCA) and local TO rangers to extend their current annual monitoring of turtle nesting at Cape Domett to the other nesting beaches in the CG area, including monitoring for turtle diseases, including turtle egg fusariosis.

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3.3 Species Conservation Advice

1. As outlined in section 2 above, item 1.3 of DCCEEW's RFI states *'Please demonstrate that the proposal has had regard to relevant conservation advices, and is not inconsistent with recovery plans and/or threat abatement plans, including but not limited to those listed in Annex 1 of Attachment B'* (to DCCEEW's RFI letter dated 16 July 2025).

2. When a native species or ecological community is listed as threatened under the EPBC Act, a Conservation Advice document is developed to assist its recovery. A Conservation Advice document guides recovery planning and identifies actions required for conservation and recovery of the threatened species or ecological community, and informs the Australian Government on required investments and regulatory decision-making.

3. Currently (August 2025) there are seven approved Conservation Advice documents that are directly relevant to the following seven key marine species in the CG area (web links):

   - *Conservation Advice for Orcaella heinsohni (Australian Snubfin Dolphin), March 2025.*
   - *Conservation Advice for Sousa sahulensis (Australian Humpback Dolphin), March 2025.*
   - *Conservation Advice for Glyphis glyphis (Speartooth Shark), April 2014.*
   - *Conservation Advice for Glyphis garricki (Northern River Shark). April 2014.*
   - *Conservation Advice for Pristis pristis (Largetooth Sawfish), April 2014.*
   - *Conservation Advice for Pristis zijsron (Green Sawfish), undated.*
   - *Conservation Advice for Pristis clavata (Dwarf Sawfish), October 2009.*

4. Apart from the two dolphin species, for which the Conservation Advice was developed in 2025, the advice for the two river shark species and three sawfish species date back over ten years to 2014 and 2009, and in some cases are based on even older data dating back to 2001, with very limited survey effort across northern Australia. More recent data based on more comprehensive, systematic surveys may well expand and refine the known geographical range and increase the population estimates for some species. An example is Kyne (2020), who recommends a down-listing of the Northern River Shark from 'endangered' to 'vulnerable', based on surveys that show a greater geographical range and larger population numbers than previously assessed.

5. Tables 5 to 11 present key elements of each of the Conservation Advice documents for the seven species listed above, and how these elements have been addressed by BKA for the CG marine sand proposal.

TABLE 5: *Conservation Advice for Orcaella heinsohni (Australian Snubfin Dolphin)*

In effect under EPBC Act from 5 March 2025.

Key element from the Conservation Advice	How addressed by BKA


Image credit: I Beasley
 	
Adult size: Up to 2.7 m.
 	
1. Conservation status:
 	
Australian Snubfin Dolphins are listed as Vulnerable under the EPBC Act and are also protected as both a Migratory species and as a cetacean (whales & dolphins), making the species a Matter of National Environmental Significance (MNES) under the EPBC Act.
	As an MNES species, BKA has given very high priority to assessing potential impacts of the proposal and developing relevant impact avoidance, mitigation and monitoring measures for this species, as presented in the following referral documents:
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment*.
	  – Section 9 - *Marine Fauna* describes marine fauna in the area based on all available information and the site surveys commissioned by BKA.
	  – Section 9.4.1 - *Australian Snubfin Dolphin* provides a specific description of this species in the area, based on all available information and the site surveys commissioned by BKA (see next item).
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*.
	  – This presents the methods and results of marine fauna surveys commissioned by BKA, including for Snubfin Dolphins, including literature review, consultations with relevant experts and stakeholders, assessment of previous surveys conducted by others in the area (e.g Brown et al 2016 & 2017), and the dry- and wet-season surveys carried out in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong* (DCCEEW 2024).
	
	– EPBC Referral Report No. 4 - *Impact Assessments*.
	  – Section 10 - *Impact Assessment - Marine Fauna*, assesses potential impacts of the proposal on marine fauna in accordance with WA EPA guidelines and impact mitigation hierarchy.
	  – Section 10.3.1 - *Snubfin & Humpback Dolphins* applies the impact assessment to these species and finds no significant or residual impacts in accordance with WA EPA guidelines and impact mitigation hierarchy.
	
	– EPBC Referral Report No. 7 - *Commonwealth Matters*.
	  – Section 10.3 - *Specific Assessment for Snubfin Dolphins* assesses potential impacts of the proposal on this species in accordance with the EPBC Act significant impact criteria and impact mitigation hierarchy, and finds no significant or residual impacts in accordance with these criteria.
	
	– EPBC Supplementary Report No. 2 - *Noise Assessment*.
	  – This includes detailed modelling of predicated noise emissions from the SPV and assessment of potential auditory injury and behavioural impacts on Snubfin Dolphins, in accordance with the US NMFWS criteria (as required by WA EPA), using a risk assessment approach, and finds that potential impacts are negligible.
	
	– EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*
	  – This includes best practice impact avoidance, mitigation, monitoring and response actions for Snubfin Dolphins in accordance with the impact mitigation hierarchy, as summarized against Element 6 below.

2. Distribution & populations: This species: – is shy, cryptic and elusive, and will tend to move away from vessels and other human activity (unlike some other dolphin species that can be attracted to vessels, including to ride bow-waves), – inhabits shallow, turbid, coastal, waters along coastline in the sub-tropical and tropical zones of Australia from Exmouth Gulf in the west to Brisbane in the east, and also coastal waters of	As reported in EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*, the marine fauna surveys commissioned by BKA and previous surveys in the area by Brown et al (2016 & 2107) indicate that numbers of Snubfin Dolphins that utilize waters within CG itself are unlikely to be more than a few individuals (<10) to a few tens of individuals at most. These appear to be part of a larger population that also ranges outside of CG throughout the inner coastal waters of Joseph Bonaparte Gulf and along the coast both to the west and east of CG, where larger numbers were sighted by previous surveys. During earlier surveys by Brown et al (2016, 2017) there was a total of 34 sightings over a nine-day survey period, noting that their survey area extended outside of CG into JBG and ~65 kms westwards along the coast to and up the Berkeley River, with many of their sightings being in these areas

Key element from the Conservation Advice	How addressed by BKA
southern Indonesia and Papua New Guinea (see Figure 2), – has an estimated total population of <10,000 mature individuals across its range in Northern Australia, – subpopulations studied to date generally do not contain more than 150 mature individuals; and – typically displays strong site fidelity to coastal areas but has also shown evidence of connectivity and movement (observed high rates of temporary emigration) between local sites. The closest areas to CG with important populations as identified in the Conservation Advice are (Figure 2): – Roebuck Bay at Broome (800 km west of CG), estimated population >130, – Cygnet Bay in the West Kimberley region (600 km west of CG), estimated population of ~50; and – Darwin Harbour and surrounding waters in the NT (400 km east of CG), estimated population up to 70.	outside of CG. They made no sightings in the Proposed Operational Area (POA). During BKA's dry-season survey in July 2023 there was a total of 11 sightings, including two sightings in the POA, over an eight-day survey period covering 823 km of transects. During BKA's wet-season survey in February 2024 there was a total of four sightings, including two in the POA, over a nine-day survey period covering 850 km of transects. It should be noted that separate sightings could be of the same individual(s), so the actual number of individuals may be less than the number of sightings. Positive photographic ID was only obtained for two separate individuals during the wet-season (Feb 2024) survey only, while Brown et al (2016, 2017) identified six distinct individuals (noting that their survey area included a much larger area outside of CG).
3. Foraging behaviour, diet & critical habitat: The species is a generalist-opportunistic predator feeding on a wide variety of fish associated with shallow coastal and estuarine environments. The Conservation Advice states that most of the prey identified within the stomachs of this species have been associated with shallow coastal-estuarine environments, suggesting feeding occurs near the coast and in river mouths. *Habitat critical to the survival of the species* is defined as shallow inshore coastal waters and estuarine habitats up to 10 km from a coastline and/or 20 km from a freshwater outflow. Within this range, sites with a high density of teleost fish and cephalopods, such as mangroves and seagrass meadows, are considered important foraging habitat. No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat.	This is consistent with the findings of EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report,* where most of the (very few sightings) within CG tended to be near and around Adolphus Island at the southern end of the main body of CG, and close to the shoreline where they feed. The POA is located in deeper, open waters in the central part of CG, away from coastal foraging areas. The sandy seabed within the POA, which is highly dynamic with constantly mobile sand-waves driven by extremely strong tidal currents, does not provide suitable foraging habitat. For the few sightings in the POA as listed against Element 2 above, the dolphins were swimming purposefully and directionally, indicating they were transiting the open, deeper water of the POA, likely enroute between their preferred near-coast foraging areas.
4. Significance to First Nations people: The Conservation Advice states that: – cetaceans generally can be significant to the culture of coastal First Nations people; and – in the CG and adjacent areas dolphins are known as yinga to the Balanggarra people and are recognised as important marine species.	Please refer: – EPBC Referral Report No. 3 - *Traditional Owner Matters*. – EPBC Referral Report No. 6 - *Consultation*. BKA has undertaken and continues to undertake comprehensive consultations and engagement with the two First Nations groups in the CG area, Balanggarra and Miriuwang-Gajerrong. Neither group has expressed concerns about Snubfin Dolphins and both groups have issued letters of support for the proposal, as presented in Annexes to EPBC Referral Report No. 3 - *Traditional Owner Matters*.
5. Main threats & potential impacts of the proposed operation: The Conservation Advice lists the main threats to Snubfin Dolphins as:	The proposed operation will not cause loss and degradation of habitat from climate change, marine pollution or coastal development, bycatch and entanglement in fishing gear or disease (pls refer section 3.2 above regarding disease). The main potential impacts of the proposed operation on Snubfin Dolphins are potential vessel strike and potential impacts of underwater noise from the Sand Production Vessel (SPV).

Key element from the Conservation Advice	How addressed by BKA
– loss and degradation of habitat from climate change, marine pollution and coastal development, – bycatch and entanglement in active fishing gear, – disease, – vessel interactions (vessel strikes); and – anthropogenic underwater noise.	Vessel Strikes: Potential vessel strikes are assessed in Section 10.3.1 - *Snubfin & Humpback Dolphins* of EPBC Referral Report No. 4 - *Impact Assessments* in accordance with WA EPA guidelines and impact mitigation hierarchy, and in Section 10.3 - *Specific Assessment for Snubfin Dolphins* of EPBC Referral Report No. 7 - *Commonwealth Matters* in accordance with the EPBC Act significant impact criteria and impact mitigation hierarchy. The assessments find no significant or residual impacts in accordance with respective guidelines, criteria and the impact mitigation hierarchy, including through the application of impact prevention and mitigation measures. Potential vessel strikes will be prevented, mitigated and monitored as described in CEO 7 - *Vessel Strikes* in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)* as follows: CEO 7: Vessel Strikes: No significant negative impacts are caused to populations of surface-dwelling marine fauna in CG from vessel strikes by the SPV. Impact prevention: Very low likelihood of encounters due to: – Very low occurrence of these species in the POA (as indicated by dedicated site surveys). – Very low presence of the SPV in CG (1-2 days every 2 weeks with zero presence in CG for 86% of the time during the project lifespan). – Naturally elusive species: The 2 dolphin species found in CG (Snubfins & Humpbacks) are naturally shy and elusive, which unlike other dolphin species, avoid vessels. – SPV Marine Fauna Observation & Avoidance (MFOA) measures (with TOs): – Very low vessel speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures. Impact mitigation: – SPV MFOA measures (with TOs) (this is both an impact prevention & mitigation measure). – Very low vessel speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures (this is both an impact prevention & mitigation measure). Trigger Criteria (TCs), Trigger Response Actions (TRAs), Threshold Criteria (THCs), Threshold Contingency Actions (TCAs) and monitoring and reporting measures for CEO7 are specified in the C-EMP, in accordance with WA EPA criteria, which DCCEEW advised is the accepted template for this proposal. Underwater Noise: The design and construction of the SPV will include relevant best-practice noise reduction measures in accordance with the *IMO Underwater Radiated Noise Guidelines* (IMO 2023), which constitute the international standard. Potential impacts of underwater noise are assessed in EPBC Supplementary Report No. 2 - *Noise Assessment*. This includes detailed modelling of predicated noise emissions from the SPV and assessment of potential auditory injury and behavioural impacts on Snubfin Dolphins, in accordance with the US NMFWS criteria (as required by WA EPA), using a risk assessment approach, and finds that potential impacts are negligible. Despite the assessment that potential impacts are negligible, as a precautionary measure BKA proposes to undertake monitoring of underwater noise in CG during commencement of operations to assess compliance with the findings of the Noise Assessment, as described in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*.

Key element from the Conservation Advice	How addressed by BKA
6. Survey & monitoring priorities: The Conservation Advice lists a number of survey and monitoring priorities, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level, and are not targeted at specific development proposals. The following are of direct relevance to the proposal: – undertake appropriate baseline surveys in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong* (DCCEEW 2024), – undertake continued monitoring; and – standardised monitoring in collaboration with First Nations Sea Ranger groups.	BKA commissioned appropriate baseline surveys in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong*, as reported in EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*. This included: – literature search and review, – consultations with relevant experts and stakeholders, – assessment of previous surveys conducted by others in the area (e.g Brown et al 2016 & 2017), – an eight-day dry-season survey carried out in July 2023, covering 823 km of transects, – a nine-day wet-season survey carried out in February 2024, covering 850 km of transects; and – 49 days of incidental marine fauna observations during other environmental survey work in CG, in both the dry- and wet-seasons. BKA proposes to undertake continued monitoring of Snubfin Dolphins during the project period, through the Marine Fauna Observation and Avoidance (MFOA) program described in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).* BKA proposes to contract, fund, train and equip the local First Nations rangers to undertake the proposed MFOA program, and discussions on this have been included in BKA's consultations with the First Nations groups to date.

7. Information & research priorities:
 	
The Conservation Advice lists a number of information and research priorities, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level, and are not targeted at specific development proposals. The following are of direct relevance to the proposal:
 	
– *Underwater anthropogenic noise:* Further understand the impact of noise pollution from increasing vessel traffic on dolphin distribution and behaviour.
 	
– *Vessel interactions:*
  – ensure the risk of vessel strike is considered when assessing actions that increase vessel traffic in areas where the species occurs, and, if required, implement appropriate mitigation measures; and
  – ensure all vessel strike incidents are reported in the National Ship Strike Database.
	Underwater noise:
	
	The design and construction of the SPV will include relevant best-practice noise reduction measures in accordance with the *IMO Underwater Radiated Noise Guidelines* (IMO 2023), which constitute the international standard.
	
	Potential impacts of underwater noise are assessed in EPBC Supplementary Report No. 2 - *Noise Assessment*. This includes detailed modelling of predicated noise emissions from the SPV and assessment of potential auditory injury and behavioural impacts on Snubfin Dolphins, in accordance with the US NMFWS criteria (as required by WA EPA), using a risk assessment approach, and finds that potential impacts are negligible.
	
	Despite the assessment that potential impacts are negligible, as a precautionary measure BKA proposes to undertake monitoring of underwater noise in CG during commencement of operations to assess compliance with the findings of the Noise Assessment, as described in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*
	
	Vessel interactions:
	
	As outlined in the responses to Elements 5 and 6 above, the issue of vessel interactions is comprehensively addressed, including a MFOA program and reporting via the National Ship Strike Database.

8. Recovery Plan: The Conservation Advice states that the Threatened Species Scientific Committee recommended that a Recovery Plan is not required for this species. The Conservation Advice itself provides sufficient guidance for implementing priority conservation actions, mitigating key threats and supporting recovery.	The measures to be implemented by BKA as summarized in this table, including the data that will be generated by the proposed monitoring program, will contribute to improved understanding of the species and to their conservation and recovery.

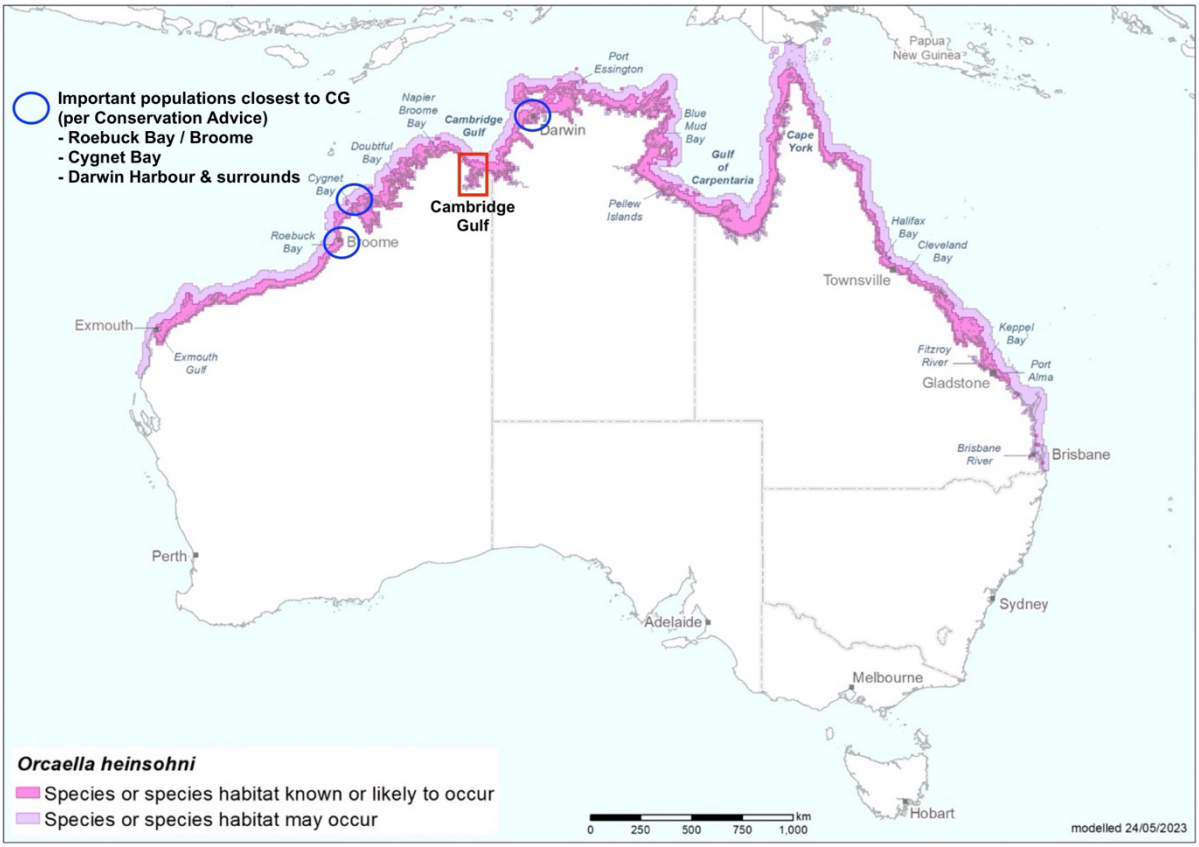


FIGURE 2: *Distribution of Australian Snubfin Dolphin in Australian waters (also found in southern Indonesia & PNG) (source: DCCEEW)*

TABLE 6: *Conservation Advice for Sousa sahulensis (Australian Humpback Dolphin)*

In effect under EPBC Act from 5 March 2025.

Key element from the Conservation Advice	How addressed by BKA


Image credit: A Brown
 	
Adult size: Up to 2.7 m.
 	
1. Conservation status:
 	
Australian Humpback Dolphins are listed as Vulnerable under the EPBC Act and are also protected as both a Migratory species and as a cetacean (whales & dolphins), making the species a Matter of National Environmental Significance (MNES) under the EPBC Act.
	As an MNES species, BKA has given very high priority to assessing potential impacts of the proposal and developing relevant impact avoidance, mitigation and monitoring measures for this species, as presented in the following referral documents:
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment*.
	  – Section 9 - *Marine Fauna* describes marine fauna in the area based on all available information and the site surveys commissioned by BKA.
	  – Section 9.4.2 - *Australian Humpback Dolphin* provides a specific description of this species in the area, based on all available information and the site surveys commissioned by BKA (see next item).
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*.
	  – This presents the methods and results of marine fauna surveys commissioned by BKA, including for Humpback Dolphins, including literature review, consultations with relevant experts and stakeholders, assessment of previous surveys conducted by others in the area (e.g Brown et al 2016 & 2017), and the dry- and wet-season surveys carried out in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong* (DCCEEW 2024).
	
	– EPBC Referral Report No. 4 - *Impact Assessments*.
	  – Section 10 - *Impact Assessment - Marine Fauna*, assesses potential impacts of the proposal on marine fauna in accordance with WA EPA guidelines and impact mitigation hierarchy.
	  – Section 10.3.1 - *Snubfin & Humpback Dolphins* applies the impact assessment to these species and finds no significant or residual impacts in accordance with WA EPA guidelines and impact mitigation hierarchy.
	
	– EPBC Referral Report No. 7 - *Commonwealth Matters*.
	  – Section 10.4 - *Specific Assessment for Snubfin Dolphins* assesses potential impacts of the proposal on this species in accordance with the EPBC Act significant impact criteria and impact mitigation hierarchy, finds no significant or residual impacts in accordance with these criteria, and applies equally to Humpback Dolphins.
	
	– EPBC Supplementary Report No. 2 - *Noise Assessment*.
	  – This includes detailed modelling of predicated noise emissions from the SPV and assessment of potential auditory injury and behavioural impacts on Humpback Dolphins, in accordance with the US NMFWS criteria (as required by WA EPA), using a risk assessment approach, and finds that potential impacts are negligible.
	
	– EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*
	  – This includes best practice impact avoidance, mitigation, monitoring and response actions for Humpback Dolphins in accordance with the impact mitigation hierarchy, as summarized against Element 6 below.

2. Distribution & populations: This species: – is shy, cryptic and elusive, and will tend to move away from vessels and other human activity (unlike some other dolphin species that can be attracted to vessels, including to ride bow-waves), – inhabits shallow, turbid, coastal waters along coastline in the sub-tropical and tropical zones of Australia from Shark Bay in the west to the Queensland / NSW border area in the east, and	As reported in EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report,* the marine fauna surveys commissioned by BKA and previous surveys in the area by Brown et al (2016 & 2107) indicate that numbers of Humpback Dolphins that utilize waters within CG itself are unlikely to be more than a few individuals (<10) to a few tens of individuals at most. These appear to be part of a larger population that also ranges outside of CG throughout the inner coastal waters of Joseph Bonaparte Gulf and along the coast both to the west and east of CG, where larger numbers were sighted by previous surveys. During earlier surveys by Brown et al (2016, 2017) there was a total of 42 sightings over a nine-day survey period, noting that their survey area extended outside of CG into JBG and ~65 kms westwards along the coast to and up the Berkeley River. Most Humpback Dolphin sightings where near

Key element from the Conservation Advice	How addressed by BKA
also coastal waters of southern Indonesia and Papua New Guinea (see Figure 3), – has an estimated total population of <10,000 mature individuals across its range in Northern Australia, – subpopulations studied to date generally do not contain more than 150 mature individuals; and – typically displays strong site fidelity to coastal areas but has also shown evidence of connectivity and movement (observed high rates of temporary emigration) between local sites. Surveys have highlighted the importance of riverine-estuarine systems to the species with a number of populations inhabiting river mouths, tidal rivers and estuaries across Northern Australia. The closest areas to CG with important populations as identified in the Conservation Advice are (Figure 3): – North West Cape to Pilbara region (1,500 km west of CG), estimated population up to 2,910, – Cygnet Bay in the West Kimberley region (600 km west of CG), estimated population up to 20; and – Darwin Harbour and surrounding waters in the NT (400 km east of CG), estimated population up to 99.	Cape Dussejour to the west of CG and outside CG and along the coast to the west. They made no sightings in the POA. During BKA's dry-season survey in July 2023 there were no sightings of Humpback Dolphins, over an eight-day survey period covering 823 km of transects. During BKA's wet-season survey in February 2024 there was a single, unconfirmed sighting of a possible Humpback Dolphin just to the north of the POA, towards Cape Dussejour, over a nine-day survey period covering 850 km of transects. It should be noted that separate sightings could be of the same individual(s), so the actual number of individuals may be less than the number of sightings. Brown et al (2016, 2017) identified 12 distinct individuals (noting that their survey area included a much a larger area outside of CG).
3. Foraging behaviour, diet & critical habitat: The species is a generalist-opportunistic predator feeding on a wide variety of fish associated with shallow coastal and estuarine environments. The species has been observed feeding in inshore coastal and estuarine habitats such as rivers and creeks, on exposed inter-tidal banks and flats and over seagrass meadows, rocks and reef. *Habitat critical to the survival of the species* is defined as shallow inshore coastal waters and estuarine habitats up to 20 km from a coastline or land body, such as an island group, with sand banks, mud flats, seagrass, rock and/or reef substrate. Within this range, sites with a high density of teleost fish, cephalopods and bivalves are important foraging habitat. No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat.	This is consistent with the findings of EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*, where most of the (very few) sightings were near near Cape Dussejour to the west to CG and outside and along the coast to the west of CG, and none within the POA. There is an area of expansive inter-tidal banks along the coast just south of Cape Dussejour, and Humpback Dolphins are known to target such areas for feeding. The POA is located in deeper, open waters in the central part of CG, away from coastal foraging areas. The sandy seabed within the POA, which is highly dynamic with constantly mobile sand-waves driven by strong tidal currents, does not provide suitable foraging habitat.
4. Significance to First Nations people: The Conservation Advice states that: – cetaceans generally can be significant to the culture of coastal First Nations people; and – in the CG and adjacent areas dolphins are known as yinga to the Balanggarra people and are recognised as important marine species.	Please refer: – EPBC Referral Report No. 3 - *Traditional Owner Matters*. – EPBC Referral Report No. 6 - *Consultation*. BKA has undertaken and continues to undertake comprehensive consultations and engagement with the two First Nations groups in the CG area, Balanggarra and Miriuwang-Gajerrong. Neither group has expressed concerns about Humpback Dolphins and both groups have issued letters of support for the proposal, as presented in Annexes to EPBC Referral Report No. 3 - *Traditional Owner Matters*.
5. Main threats & potential impacts of the proposed operation: The Conservation Advice lists the main threats to Snubfin Dolphins as:	The proposed operation will not cause loss and degradation of habitat from climate change, marine pollution or coastal development, bycatch and entanglement in fishing gear or disease (pls refer section 3.2 above regarding disease).

Key element from the Conservation Advice	How addressed by BKA
– loss and degradation of habitat from climate change, marine pollution and coastal development, – bycatch and entanglement in active fishing gear, – disease, – vessel interactions (vessel strikes); and – anthropogenic underwater noise.	The main potential impacts of the proposed operation on Humpback Dolphins are potential vessel strike and potential impacts of underwater noise from the Sand Production Vessel (SPV). Potential vessel strikes are assessed in Section 10.3.1 - *Snubfin & Humpback Dolphins* of EPBC Referral Report No. 4 - *Impact Assessments* in accordance with WA EPA guidelines and impact mitigation hierarchy, and in Section 10.3 - *Specific Assessment for Snubfin Dolphins* of EPBC Referral Report No. 7 - *Commonwealth Matters* in accordance with the EPBC Act significant impact criteria and impact mitigation hierarchy (which also applies to Humpback Dolphins). The assessments find no significant or residual impacts in accordance with respective guidelines, criteria and the impact mitigation hierarchy, including through the application of impact prevention and mitigation measures. Potential vessel strikes will be prevented, mitigated and monitored as described in CEO 7 - Vessel Strikes in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP),* as outlined for Snubfin Dolphins in Table 5 above, which is not repeated here for reasons of economy. Potential impacts of underwater noise are addressed as outlined for Snubfin Dolphins in Table 5 above, which is not repeated here for reasons of economy.
6. Survey & monitoring priorities: The Conservation Advice lists a number of survey and monitoring priorities, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level, and are not targeted at specific development proposals. The following are of direct relevance to the proposal: – undertake appropriate baseline surveys in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong* (DCCEEW 2024), – undertake continued monitoring; and – standardised monitoring in collaboration with First Nations Sea Ranger groups.	BKA commissioned appropriate baseline surveys in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong*, as reported in EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*. This included: – literature search and review, – consultations with relevant experts and stakeholders, – assessment of previous surveys conducted by others in the area (e.g Brown et al 2016 & 2017), – an eight-day dry-season survey carried out in July 2023, covering over 820 km of transects, – a nine-day wet-season survey carried out in February 2024, covering over 850 km of transects; and – 49 days of incidental marine fauna observations during other environmental survey work in CG, in both the dry- and wet-seasons. BKA proposes to undertake continued monitoring of Humpback Dolphins during the project period, through the Marine Fauna Observation and Avoidance (MFOA) program described in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).* BKA proposes to contract, fund, train and equip the local First Nations rangers to undertake the proposed MFOA program, and discussions on this have been included in BKA's consultations with the First Nations groups to date.
7. Information & research priorities: The Conservation Advice lists a number of information and research priorities, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level, and are not targeted at specific development proposals. The following are of direct relevance to the proposal: – *Underwater anthropogenic noise:* Further understand the impact of noise pollution from increasing vessel traffic on dolphin distribution and behaviour. – *Vessel interactions:* – ensure the risk of vessel strike is considered when assessing actions that increase vessel traffic in areas where the species occurs, and, if required, implement appropriate mitigation measures; and	Underwater Noise: The design and construction of the SPV will include relevant best-practice noise reduction measures in accordance with the *IMO Underwater Radiated Noise Guidelines* (IMO 2023), which constitute the international standard. Potential impacts of underwater noise are assessed in EPBC Supplementary Report No. 2 - *Noise Assessment*. This includes detailed modelling of predicated noise emissions from the SPV and assessment of potential auditory injury and behavioural impacts on Humpback Dolphins, in accordance with the US NMFWS criteria (as required by WA EPA), using a risk assessment approach, and finds that potential impacts are negligible. Despite the assessment that potential impacts are negligible, BKA proposes to undertake monitoring of underwater noise in CG during commencement of operations to assess compliance with the findings of the Noise Assessment, as described in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).* Vessel interactions: As outlined in the responses to Elements 5 and 6 above, the issue of vessel interactions is comprehensively addressed, including a MFOA program and reporting via the National Ship Strike Database.

Key element from the Conservation Advice	How addressed by BKA
– ensure all vessel strike incidents are reported in the National Ship Strike Database.	
8. Recovery Plan: The Conservation Advice states that the Threatened Species Scientific Committee recommended that a Recovery Plan is not required for this species. The Conservation Advice itself provides sufficient guidance for implementing priority conservation actions, mitigating key threats and supporting recovery.	The measures to be implemented by BKA as summarized in this table, including the data that will be generated by the proposed monitoring program, will contribute to improved understanding of the species and to their conservation and recovery.

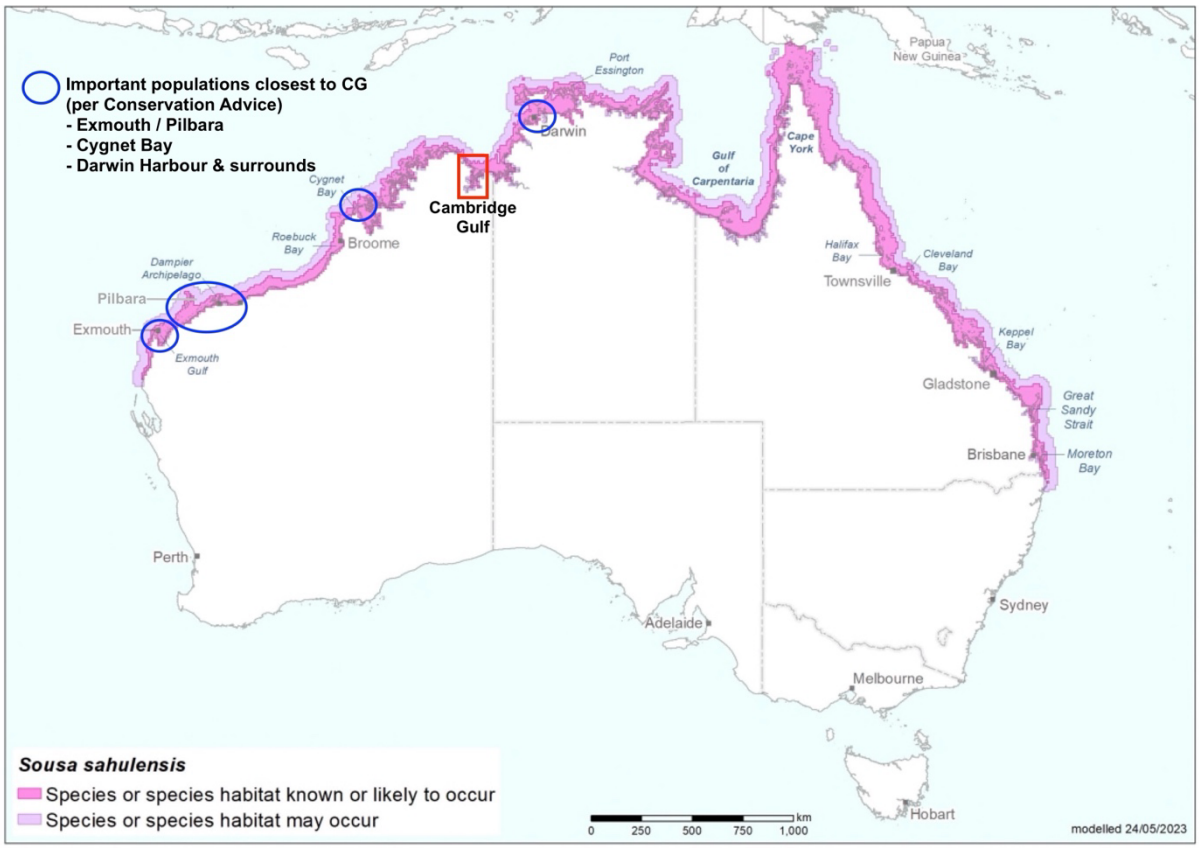


FIGURE 3: *Distribution of Australian Humpback Dolphin in Australian waters (also found in southern Indonesia & PNG) (source: DCCEEW)*

TABLE 7: *Conservation Advice for Glyphis glyphis (Speartooth Shark)*

In effect under EPBC Act from 11 April 2014.

Key element from the Conservation Advice	How addressed by BKA


Image credit: Marinewise
 	
Adult size: Up to 2 m.
 	
1. Conservation Status:
 	
Speartooth Sharks are listed as Critically Endangered under the EPBC Act, making the species a Matter of National Environmental Significance (MNES) under that Act.
 	
NOTE:
– The Conservation Advice is dated 11 April 2014 and states that the Conservation Status is based on limited data from nearly 25 years ago in 2001, which indicated a limited geographical distribution and low population numbers, but with significant gaps in survey effort across Northern Australia.
– Re-assessment using more recent data may likely suggest a down-listing of this species, as recommended by Kyne (2020) for the closely related Northern River Shark (*Glyphis garricki*) (see Table 8 below).
	As an MNES species, BKA has given very high priority to assessing potential impacts of the proposal and developing relevant impact avoidance, mitigation and monitoring measures for this species, as presented in the following referral documents:
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment*.
	  – Section 9 - *Marine Fauna* describes marine fauna in the area based on all available information and the site surveys commissioned by BKA.
	  – Section 9.4.6 - *River Sharks* provides a specific description of this species in the area, based on all available information and the eDNA site surveys commissioned by BKA (see below).
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 13 - *Marine eDNA Report*.
	  – This presents the methods and results of marine eDNA surveys commissioned by BKA and undertaken by the University of Canberra National eDNA Reference Centre.
	  – The surveys collected and analysed 60 seabed sediment samples and 26 water samples from across 20 separate sites within the POA, in other open-water parts of CG and up the inlets, creeks and rivers on both the eastern and western sides of CG (but not as far upstream as the Lower Ord River due to the long distance from the POA - > 35 km).
	  – No eDNA evidence of Speartooth Sharks was identified by this this survey.
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*.
	  – This presents the methods and results of marine fauna surveys commissioned by BKA, including for any shark species, including literature review, consultations with relevant experts and stakeholders, assessment of previous surveys conducted by others in the area (e.g Kyne et al 2020), and the dry- and wet-season surveys carried out in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong* (DCCEEW 2024). No Speartooth Sharks were observed during these surveys.
	
	– EPBC Referral Report No. 4 - *Impact Assessments*.
	  – Section 10 - *Impact Assessment - Marine Fauna*, assesses potential impacts of the proposal on marine fauna in accordance with WA EPA guidelines and impact mitigation hierarchy.
	  – Section 10.3.6 – *River Sharks* applies the impact assessment to these species and finds no significant or residual impacts in accordance with WA EPA guidelines and impact mitigation hierarchy.
	
	– EPBC Referral Report No. 7 - *Commonwealth Matters*.
	  – Section 10.4 assesses potential impacts of the proposal on listed species including river sharks in accordance with the EPBC Act significant impact criteria and impact mitigation hierarchy, and finds no significant or residual impacts in accordance with these criteria.
	
	– EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*
	  – This includes best practice impact avoidance, mitigation, monitoring and response actions for river sharks in accordance with the impact mitigation hierarchy, as summarized against Element 6 below.

2. Distribution & populations: The Conservation Advice states that: – Speartooth sharks are capable of living in and moving between freshwater and seawater. Juveniles and sub-adults utilise large tropical mangrove-lined river systems with lower salinities as their primary habitat, often being found well upstream, including in near-fresh waters.	As reported in Section 9.4.6 of EPBC Referral Report No. 2 - *Setting & Existing Environment,* Kyne et al (2021) reported sampling juvenile Speartooth Sharks in the Lower Ord River ~35 km upstream from the main body of CG, in 2015 and 2019, consistent with their preference for less saline, upstream waters of rivers and estuaries. There are no records of this species in the more saline, deeper marine waters of the main body of CG where the POA is located. As outlined above, the eDNA sampling commissioned by BKA did not identify evidence of Speartooth Sharks. However, the occasional adult could potentially pass through that area during inshore/offshore movements.

Key element from the Conservation Advice	How addressed by BKA
– Individuals have a tidally influenced movement pattern, moving up and downstream with the flood and ebb tides, and primarily swim well above the seabed. Surveys show that individuals repeatedly utilise small sections of the available habitat. – Based on physiological and life history similarities with Bull Sharks (*Carcharhinus leucas*), it is assumed that adult Speartooth Sharks may live outside of rivers in the coastal marine environment. – Their currently known geographical range covers the tropical river systems and coastal waters from the Kimberley region of WA to the east coast of tropical Queensland and rivers along the southern coast of PNG. The Conservation Advice (based on old 2001 data) states that there have been no confirmed records from Queensland's east coast since 1983, indicating that they may have become locally extinct in that area (possibly due to historically extensive commercial gill-netting for Barramundi and other finfish species). – Knowledge of their overall distribution is constrained by a lack of surveys across Northern Australia. Increased survey effort may likely expand their known geographical range, as reported by Kyne (2020) for the closely related Northern River Shark (*Glyphis garricki*) (see Table 8 below). – Knowledge of their population structure and numbers is also constrained by a lack of surveys across Northern Australia, and there is currently no overall population estimate available.	
3. Foraging behaviour, diet & critical habitat: The Conservation Advice does not contain information on the foraging behaviour and diet of this species. As a Carcharhinid shark it would actively hunt and opportunistically prey upon a wide variety of smaller marine species throughout the water column. As outlined above the habitat for this species is tropical mangrove-lined river systems and estuaries for juveniles and sub-adults, and is likely be the coastal waters offshore from these river and estuarine areas for adults, although very little data is available for the latter. The Conservation Advice states that the distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological communities.	The main habitat for juvenile and sub-adult Speartooth Sharks in CG is located in the Lower Ord River ~35 km upstream from the POA. There is therefore no overlap of the proposed operation with this habitat or potential for direct impacts on juveniles and sub-adults. As outlined above there are no records of this species in the more saline, deeper marine waters of the main body of CG where the POA is located, although the occasional adult could potentially pass through that area during inshore/offshore movements. Potential impacts on sharks moving through the POA, and proposed impact prevention, mitigation and monitoring measures are summarised against Element 5 below.
4. Significance to First Nations people: The Conservation Advice states that: – Fishing of sharks and rays is a part of traditional fishing practices and historically makes up an important part of the diet of coastal indigenous communities. – Indigenous Australians are allowed to take and eat Speartooth Sharks for personal, domestic or non-commercial communal needs.	Please refer: – EPBC Referral Report No. 3 - *Traditional Owner Matters*. – EPBC Referral Report No. 6 - *Consultation*. BKA has undertaken and continues to undertake comprehensive consultations and engagement with the two First Nations groups in the CG area, Balanggarra and Miriuwang-Gajerrong. Neither group has expressed concerns about shark species and both groups have issued letters of support for the proposal, as presented in Annexes to EPBC Referral Report No. 3 - *Traditional Owner Matters.*

Key element from the Conservation Advice	How addressed by BKA
5. Main threats & potential impacts of the proposed operation: The Conservation Advice lists the main threats to Speartooth Sharks as: – commercial fishing (especially gill netting and prawn trawling), – recreational fishing, – indigenous fishing, – illegal, unreported and unregulated (IUU) fishing, – entanglement in marine debris; and – habitat degradation and modification.	The proposed operation will not contribute to any of the threats listed in the Conservation Advice. It does not include any form of fishing, it will not discharge debris into the marine environment (see section 3.5 below) and it will not degrade or modify the species' habitat. As outlined above the occasional adult could potentially pass through the POA during inshore/offshore movements, which would present a very low potential for vessel strike by the SPV, or a negligible risk of being entrained in the SPV's drag-head when it is operating. Factors and measures to prevent, mitigate, monitor and respond to potential vessel strikes are the same as those described for both Snubfin and Humpback Dolphins against Element 5 in Tables 5 and 6 above, and are not repeated here for reasons of economy. The potential for this species to be entrained in the SPV's drag-head when it is operating is negligible for the following reasons: – Apparent absence of this species in the POA (based on surveys and eDNA sampling). – Very low presence of the SPV in CG (1-2 days every 2 weeks with zero presence in CG for 86% of the time during the project lifespan). – Very low vessel speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures. – Swimming behaviour: The fact that this species primarily swims well above the seabed (the drag-head operates on the seabed). – Single drag-head: The SPV will only have a single suction-arm and drag-head (standard TSHD's usually have a pair of suction-arms and drag-heads). – Marine fauna excluder ('turtle tickler chains'): Will be fitted in front of the drag-head. The potential entrainment of a river shark in the drag-head would not constitute significant impact on the species stock or population as defined by the EPBC Act significant impact criteria.
6. Research Priorities & Priority Actions: The Conservation Advice lists a number of research priorities and priority actions, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level. The research priorities and priority actions are designed primarily to address the key threats outlined against Element 5 above.	The proposed operation will not contribute to any of the threats listed in the Conservation Advice which are addressed by the research priorities and priority actions.
7. Recovery Plan: The Conservation Advice references a Draft *Sawfish and River Sharks Multispecies Recovery Plan*, which was published as a final plan in 2015.	Please refer Table 12 in section 3.4 below which presents BKA's response to relevant elements of the *Sawfish and River Sharks Multispecies Recovery Plan.*

TABLE 8: *Conservation Advice for Glyphis garricki (Northern River Shark)*

In effect under EPBC Act from 11 April 2014.

Key element from the Conservation Advice	How addressed by BKA
 *Image credit: Sam Lyne* Adult size: Up to 2.5 m. 1. Conservation Status: Northern River Sharks are listed as Endangered under the EPBC Act, making the species a Matter of National Environmental Significance (MNES) under that Act. NOTE: – The Conservation Advice is dated 11 April 2014 and states that the Conservation Status is based on limited data from 2001 which indicated a limited geographical distribution and low population numbers. – Kyne (2020) reported sampling for Northern River Sharks in 11 rivers in the NT and WA, starting in 2013. The species was found in the Lower Ord, Durack and Pentecost Rivers upstream from CG. The report estimates the total Australian population size to be between 2,500 and 10,000 adults, and recommends a down-listing of this species from 'endangered' to 'vulnerable'.	As an MNES species, BKA has given very high priority to assessing potential impacts of the proposal and developing relevant impact avoidance, mitigation and monitoring measures for this species, as presented for the Element in Table 7 for Speartooth Sharks above, which is not repeated here for reasons of economy.
2. Distribution & populations: The Conservation Advice states that: – Northern River Sharks have a similar distribution and populations to Speartooth Sharks as described in Table 7 above, including living in and moving between freshwater and seawater. As for Speartooth Sharks, juveniles and sub-adults utilise large tropical mangrove-lined river systems with lower salinities as their primary habitat, often being found well upstream, including in near-fresh waters, while adults may live outside of rivers in the coastal marine environment. – Their currently known geographical range covers the tropical river systems and coastal waters from the Kimberley region of WA to the NT side of the Gulf of Carpentaria and rivers along the southern coast of PNG. The Conservation Advice does not mention Queensland waters, although this may simply reflect a lack of survey coverage. – Increased survey effort may likely expand their known geographical range, as reported by Kyne (2020). – Knowledge of their population structure and numbers is also constrained by a lack of surveys across Northern Australia. As outlined above, Kyne (2020) estimates the total Australian population size to be	As reported in Section 9.4.6 of EPBC Referral Report No. 2 - *Setting & Existing Environment*, Kyne et al (2021) reported sampling juvenile Northern River Sharks in the Lower Ord River ~35 km upstream from the main body of CG, and in the Durack and Pentecost Rivers >80 km upstream from CG, in 2015 and 2019, consistent with their preference for less saline, upstream waters of rivers and estuaries. There are no records of this species in the more saline, deeper marine waters of the main body of CG where the POA is located. As outlined above, the eDNA sampling commissioned by BKA did not identify evidence of Speartooth Sharks. However, the occasional adult could potentially pass through that area during inshore/offshore movements.

Key element from the Conservation Advice	How addressed by BKA
between 2,500 and 10,000 adults, although he does not seem to have undertaken surveys in Queensland waters.	
3. Foraging behaviour, diet & critical habitat: The Conservation Advice does not contain information on the foraging behaviour and diet of this species. As a Carcharhinid shark it would actively hunt and opportunistically prey upon a wide variety of smaller marine species throughout the water column. As outlined above the habitat for this species is tropical mangrove-lined river systems and estuaries for juveniles and sub-adults, and is likely be the coastal waters offshore from these river and estuarine areas for adults, although very little data is available for the latter. The Conservation Advice states that the distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological communities.	The main habitat for juvenile and sub-adult Northern River Sharks in CG is located in the Lower Ord River ~35 km upstream from the POA, and in the Durack and Pentecost Rivers >80 km upstream from CG. There is therefore no overlap of the proposed operation with this habitat or potential for direct impacts on juveniles and sub-adults. As outlined above there are no records of this species in the more saline, deeper marine waters of the main body of CG where the POA is located, although the occasional adult could potentially pass through that area during inshore/offshore movements. Potential impacts on sharks moving through the POA, and proposed impact prevention, mitigation and monitoring measures are summarised against Element 5 below.
4. Significance to First Nations people: The Conservation Advice states that: – Fishing of sharks and rays is a part of traditional fishing practices and historically makes up an important part of the diet of coastal indigenous communities. – Indigenous Australians are allowed to take and eat Speartooth Sharks for personal, domestic or non-commercial communal needs.	Please refer: – EPBC Referral Report No. 3 - *Traditional Owner Matters*. – EPBC Referral Report No. 6 - *Consultation*. BKA has undertaken and continues to undertake comprehensive consultations and engagement with the two First Nations groups in the CG area, Balanggarra and Miriuwang-Gajerrong. Neither group has expressed concerns about shark species and both groups have issued letters of support for the proposal, as presented in Annexes to EPBC Referral Report No. 3 - *Traditional Owner Matters*.
5. Main threats & potential impacts of the proposed operation: The Conservation Advice lists the main threats to Speartooth Sharks as: – commercial fishing (especially gill netting and prawn trawling), – recreational fishing, – indigenous fishing, – illegal, unreported and unregulated (IUU) fishing, – entanglement in marine debris; and – habitat degradation and modification.	The proposed operation will not contribute to any of the threats listed in the Conservation Advice. It does not include any form of fishing, it will not discharge debris into the marine environment (see section 3.5 below), and it will not degrade or modify the species' habitat. As outlined above the occasional adult could potentially pass through the POA during inshore/offshore movements, which would present a very low potential for vessel strike by the SPV, or a negligible risk of being entrained in the SPV's drag-head when it is operating. Factors and measures to prevent, mitigate, monitor and respond to potential vessel strikes are the same as those described for both Snubfin and Humpback Dolphins against Element 5 in Tables 5 and 6 above, and are not repeated here for reasons of economy. The potential for this species to be entrained in the SPV's drag-head when it is operating is negligible for the following reasons: – Apparent absence of this species in the POA (based on surveys and eDNA sampling). – Very low presence of the SPV in CG (1-2 days every 2 weeks with zero presence in CG for 86% of the time during the project lifespan). – Very low vessel speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures. – Swimming behaviour: The fact that this species primarily swims well above the seabed (the drag-head operates on the seabed). – Single drag-head: The SPV will only have a single suction-arm and drag-head (standard TSHD's usually have a pair of suction-arms and drag-heads). – Marine fauna excluder ('turtle tickler chains'): Will be fitted in front of the drag-head. The potential entrainment of a river shark in the drag-head would not constitute significant impact on the species stock or population as defined by the EPBC Act significant impact criteria.

Key element from the Conservation Advice	How addressed by BKA
6. Research Priorities & Priority Actions: The Conservation Advice lists a number of research priorities and priority actions, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level. The research priorities and priority actions are designed primarily to address the key threats outlined against Element 5 above.	The proposed operation will not contribute to any of the threats listed in the Conservation Advice which are addressed by the research priorities and priority actions.
7. Recovery Plan: The Conservation Advice references a Draft *Sawfish and River Sharks Multispecies Recovery Plan*, which was published as a final plan in 2015.	Please refer Table 12 in section 3.4 below which presents BKA's response to relevant elements of the *Sawfish and River Sharks Multispecies Recovery Plan.*

TABLE 9: *Conservation Advice for Pristis pristis (Largetooth Sawfish) (also known as Freshwater Sawfish)*

In effect under EPBC Act from 11 April 2014.

Key element from the Conservation Advice	How addressed by BKA


Image credit: Fishes of Aus
 	
Adult size: Up to 6.5 m.
 	
1. Conservation Status:
 	
Largetooth Sawfish are listed as Vulnerable under the EPBC Act, making the species a Matter of National Environmental Significance (MNES) under that Act.
	As an MNES species BKA has given very high priority to assessing potential impacts of the proposal and developing relevant impact avoidance, mitigation and monitoring measures for this species, as presented in the following referral documents:
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment*.
	  – Section 9 - *Marine Fauna* describes marine fauna in the area based on all available information and the site surveys commissioned by BKA.
	  – Section 9.4.5 - *Sawfish* provides a specific description of this species in the area, based on all available information and the eDNA site surveys commissioned by BKA (see below).
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 13 - *Marine eDNA Report*.
	  – This presents the methods and results of marine eDNA surveys commissioned by BKA and undertaken by the University of Canberra National eDNA Reference Centre.
	  – The surveys collected and analysed 60 seabed sediment samples and 26 water samples from across 20 separate sites within the POA, in other open-water parts of CG and up the inlets, creeks and rivers on both the eastern and western sides of CG (but not as far upstream as the Lower Ord River due to the long distance from the POA - > 35 km).
	  – No eDNA evidence of Largetooth Sawfish was identified by this this survey.
	
	– EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*.
	  – This presents the methods and results of marine fauna surveys commissioned by BKA, including for any shark species, including literature review, consultations with relevant experts and stakeholders, assessment of previous surveys conducted by others in the area (e.g Kyne et al 2020), and the dry- and wet-season surveys carried out in accordance with the *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong* (DCCEEW 2024). No Largetooth Sawfish were observed during these surveys.
	
	– EPBC Referral Report No. 4 - *Impact Assessments*.
	  – Section 10 - *Impact Assessment - Marine Fauna*, assesses potential impacts of the proposal on marine fauna in accordance with WA EPA guidelines and impact mitigation hierarchy.
	  – Section 10.3.5 – *Sawfish* applies the impact assessment to these species and finds no significant or residual impacts in accordance with WA EPA guidelines and impact mitigation hierarchy.
	
	– EPBC Referral Report No. 7 - *Commonwealth Matters*.
	  – Section 10.4 assesses potential impacts of the proposal on listed species including sawfish in accordance with the EPBC Act significant impact criteria and impact mitigation hierarchy, and finds no significant or residual impacts in accordance with these criteria.
	
	– EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*.
	  – This includes best practice impact avoidance, mitigation, monitoring and response actions for sawfish in accordance with the impact mitigation hierarchy, as summarized against Element 6 below.

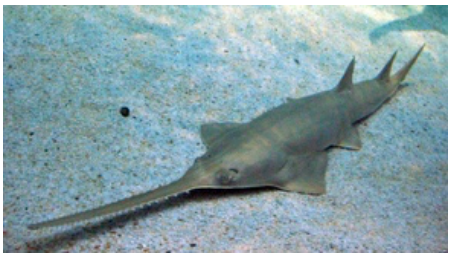
2. Distribution & populations: Largetooth Sawfish are found globally in all tropical coastal waters and estuarine and river systems in the Atlantic, Indian and Pacific oceans. They have an extremely broad distribution ranging from freshwater bodies up to 400 km inland to coastal and marine waters up to 100 km offshore. They have an ontogenetic shift in habitat	As reported in Section 9.4.5 of EPBC Referral Report No. 2 - *Setting & Existing Environment*, the upstream areas of the rivers and creeks that discharge into CG provide habitat that is suitable for neonate and juvenile Largetooth Sawfish, and the coastal waters of CG provide habitat that is suitable for adult Largetooth Sawfish. However, no previously published papers, reports or verifiable data could be found confirming their presence in CG. As outlined above the eDNA sampling and the marine fauna surveys commissioned by BKA found no evidence of their presence in CG.

Key element from the Conservation Advice	How addressed by BKA
utilisation with neonate and juvenile animals primarily occurring in the freshwater and less saline waters of rivers and estuaries and adult animals being found in more saline coastal and marine waters. In Australia they are found in coastal waters and estuarine and river systems across the tropical north of the country. The Conservation Advice for this species does not provide a population estimate.	Never-the-less, consistent with the precautionary principle, it is assumed that the occasional adult could potentially pass through the POA during inshore/offshore movements.
3. Foraging behaviour, diet & critical habitat: The Conservation Advice does not contain information on the foraging behaviour and diet of this species. The DCCEEW SPRAT profile for this species states that it feeds on fishes and benthic invertebrates. The saw is used to stun schooling fish, such as mullet, and for extracting molluscs and small crustaceans from the benthic sediment. The Conservation Advice states that the generally accepted model of movement of Largetooth Sawfish is that young are born at the mouths of rivers and then migrate upriver where they spend the first several years of life. As they reach maturity they move out of the rivers and into the marine environment. The Conservation Advice states that the distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological communities.	There is no overlap of the proposed operation with the upriver habitat that might be used by juvenile and sub-adult sawfish and no potential for direct impacts on juveniles and sub-adults. As outlined above, while there are no confirmed records of this species in CG, including in the deeper marine waters of the main body of CG where the POA is located, consistent with the precautionary principle it is assumed that the occasional adult could potentially pass through the POA during inshore/offshore movements. Potential impacts on adult sawfish moving through the POA, and proposed impact prevention, mitigation and monitoring measures are summarised against Element 5 below.
4. Significance to First Nations people: The Conservation Advice states that: – Fishing of sawfish is a part of traditional fishing practices and historically makes up an important part of the diet of coastal indigenous communities. – Indigenous Australians are allowed to take and eat sawfish for personal, domestic or non-commercial communal needs.	Please refer: – EPBC Referral Report No. 3 - *Traditional Owner Matters*. – EPBC Referral Report No. 6 - *Consultation*. BKA has undertaken and continues to undertake comprehensive consultations and engagement with the two First Nations groups in the CG area, Balanggarra and Miriuwang-Gajerrong. Neither group has expressed concerns about sawfish species and both groups have issued letters of support for the proposal, as presented in Annexes to EPBC Referral Report No. 3 - *Traditional Owner Matters*.
5. Main threats & potential impacts of the proposed operation: The Conservation Advice lists the main threats to sawfish as: – commercial fishing (especially gill netting and prawn trawling), – recreational fishing, – indigenous fishing, – illegal, unreported and unregulated (IUU) fishing, – entanglement in marine debris; and – habitat degradation and modification.	The proposed operation will not contribute to any of the threats listed in the Conservation Advice. It does not include any form of fishing, it will not discharge debris into the marine environment (see section 3.5 below), and it will not degrade or modify the species' habitat. As outlined above the occasional adult could potentially pass through the POA during inshore/offshore movements. As this is an epibenthic species (it swims near the seabed) there would be some potential of being entrained in the SPV's drag-head when it is operating. The potential for this species to be entrained in the SPV's drag-head is very low for the following reasons: – Apparent absence of this species in the POA (based on surveys and eDNA sampling). – Very low presence of the SPV in CG (1-2 days every 2 weeks with zero presence in CG for 86% of the time during the project lifespan). – Very low vessel speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures. – Single drag-head: The SPV will only have a single suction-arm and drag-head (standard TSHD's usually have a pair of suction-arms and drag-heads). – Marine fauna excluder ('turtle tickler chains'): Will be fitted in front of the drag-head.

Key element from the Conservation Advice	How addressed by BKA
6. Research Priorities & Priority Actions: The Conservation Advice lists a number of research priorities and priority actions, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level. The research priorities and priority actions are designed primarily to address the key threats outlined against Element 5 above.	The proposed operation will not contribute to any of the threats listed in the Conservation Advice which are addressed by the research priorities and priority actions.
7. Recovery Plan: The Conservation Advice references a Draft *Sawfish and River Sharks Multispecies Recovery Plan*, which was published as a final plan in 2015.	Please refer Table 12 in section 3.4 below which presents BKA's response to relevant elements of the *Sawfish and River Sharks Multispecies Recovery Plan.*

TABLE 10: *Conservation Advice for Pristis zijsron (Green Sawfish)*

(undated)

Key element from the Conservation Advice	How addressed by BKA
 *Image credit: R Pion* Adult size: Up to 5 m. 1. Conservation Status: Green Sawfish are listed as Vulnerable under the EPBC Act, making the species a Matter of National Environmental Significance (MNES) under that Act.	As an MNES species, BKA has given very high priority to assessing potential impacts of the proposal and developing relevant impact avoidance, mitigation and monitoring measures for this species, as presented for this Element in Table 9 for Largetooth Sawfish above, which is not repeated here for reasons of economy.
2. Distribution & populations: The Conservation Advice states that the species is currently known to be present across northern Australia from Broome in WA to Cairns in Queensland where it inhabits less saline riverine and estuarine and also marine waters, but does not move into purely freshwater areas. The Conservation Advice does not provide a population estimate.	As reported in Section 9.4.5 of EPBC Referral Report No. 2 - *Setting & Existing Environment*, the upstream areas of the rivers and creeks that discharge into CG provide habitat that is suitable for neonate and juvenile Green Sawfish, and the coastal waters of CG provide habitat that is suitable for adult Green Sawfish. However, no previously published papers, reports or verifiable data could be found confirming their presence in CG. As outlined above the eDNA sampling and the marine fauna surveys commissioned by BKA found no evidence of their presence in CG. Never-the-less, consistent with the precautionary principle, it is assumed that the occasional adult could potentially pass through the POA during inshore/offshore movements.
3. Foraging behaviour, diet & critical habitat: The Conservation Advice does not contain information on the foraging behaviour and diet of this species. Like all sawfish it feeds on fishes and benthic invertebrates. The saw is used to stun schooling fish, such as mullet, and for extracting molluscs and small crustaceans from the benthic sediment. Like other sawfish, less saline riverine and estuarine areas are used by neonates, juveniles and sub-adults, which migrate to coastal and offshore areas as adults.	As per this Element in Table 9 for Largetooth Sawfish above, which is not repeated here for reasons of economy.
4. Significance to First Nations people: The Conservation Advice does not state anything on this element.	As per this Element in Table 9 for Largetooth Sawfish above, which is not repeated here for reasons of economy.
5. Main threats & potential impacts of the proposed operation: The Conservation Advice lists the main threats to Green Sawfish as: – incidental capture as bycatch in gillnet and trawl fisheries, – illegal capture for fins and rostra, – habitat degradation through coastal development.	As per this Element in Table 9 for Largetooth Sawfish above, which is not repeated here for reasons of economy.

Key element from the Conservation Advice	How addressed by BKA
6. Priority Actions: The Conservation Advice lists a number of priority actions, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level. The priority actions are designed primarily to address the key threats outlined against Element 5 above.	The proposed operation will not contribute to any of the threats listed in the Conservation Advice which are addressed by the priority actions.
7. Recovery Plan: The Conservation Advice does not reference a Recovery Plan.	Please refer Table 12 in section 3.4 below which presents BKA's response to relevant elements of the *Sawfish and River Sharks Multispecies Recovery Plan.*

TABLE 11: *Conservation Advice for Pristis clavata (Dwarf Sawfish)*

In effect under EPBC Act from 7 October 2009.

Key element from the Conservation Advice	How addressed by BKA
 *Image credit: R Kuiter* Adult size: Up to 3.2 m. 1. Conservation Status: Dwarf Sawfish are listed as Vulnerable under the EPBC Act, making the species a Matter of National Environmental Significance (MNES) under that Act.	As an MNES species, BKA has given very high priority to assessing potential impacts of the proposal and developing relevant impact avoidance, mitigation and monitoring measures for this species, as presented for this Element in Table 9 for Largetooth Sawfish above, which is not repeated here for reasons of economy.
2. Distribution & populations: The Conservation Advice states that the species is currently known to be present across northern Australia from the Pilbara in WA to Cairns in Queensland where it inhabits less saline riverine and estuarine and also marine waters, but does not move into purely freshwater areas. The Conservation Advice does not provide a population estimate.	As reported in Section 9.4.5 of EPBC Referral Report No. 2 - *Setting & Existing Environment*, the upstream areas of the rivers and creeks that discharge into CG provide habitat that is suitable for neonate and juvenile Dwarf Sawfish, and the coastal waters of CG provide habitat that is suitable for adult Dwarf Sawfish. However, no previously published papers, reports or verifiable data could be found confirming their presence in CG. As outlined above the eDNA sampling and the marine fauna surveys commissioned by BKA found no evidence of their presence in CG. Never-the-less, consistent with the precautionary principle, it is assumed that the occasional adult could potentially pass through the POA during inshore/offshore movements.
3. Foraging behaviour, diet & critical habitat: The Conservation Advice does not contain information on the foraging behaviour and diet of this species. Like all sawfish it feeds on fishes and benthic invertebrates. The saw is used to stun schooling fish, such as mullet, and for extracting molluscs and small crustaceans from the benthic sediment. Like other sawfish, less saline riverine and estuarine areas are used by neonates, juveniles and sub-adults, which migrate to coastal and offshore areas as adults.	As per this Element in Table 9 for Largetooth Sawfish above, which is not repeated here for reasons of economy.
4. Significance to First Nations people: The Conservation Advice does not state anything on this element.	As per this Element in Table 9 for Largetooth Sawfish above, which is not repeated here for reasons of economy.
5. Main threats & potential impacts of the proposed operation: The Conservation Advice lists the main threats to Dwarf Sawfish as: – incidental capture as bycatch in gillnet fishing, – IUU fishing, – habitat degradation through coastal development.	As per this Element in Table 9 for Largetooth Sawfish above, which is not repeated here for reasons of economy.
6. Priority Actions:	The proposed operation will not contribute to any of the threats listed in the Conservation Advice which are addressed by the priority actions.

Key element from the Conservation Advice	How addressed by BKA
The Conservation Advice lists a number of priority actions, which are strategic in nature for adoption by relevant parties involved in the conservation of the species at the national level. The priority actions are designed primarily to address the key threats outlined against Element 5 above.	
7. Recovery Plan: The Conservation Advice does not reference a Recovery Plan.	Please refer Table 12 in section 3.4 below which presents BKA's response to relevant elements of the *Sawfish and River Sharks Multispecies Recovery Plan.*

3.4 Species Recovery Plans

1. As outlined in section 1.2 above, item 1.3 of DCCEEW's RFI states *'Please demonstrate that the proposal has had regard to relevant conservation advices, and is not inconsistent with recovery plans and/or threat abatement plans, etc.'*

2. The Australian Government Minister for the Environment may adopt and implement recovery plans for threatened fauna, flora (other than conservation dependent species) and ecological communities listed under the EPBC Act.

3. Recovery plans set out research and management actions to stop the decline of, and support the recovery of, listed threatened species or threatened ecological communities. The aim of a recovery plan is to maximise the long-term survival in the wild of a threatened species or ecological community. They should also state how to manage and reduce threatening processes.

4. Recovery plans provide a planned and logical framework for responsible government agencies and key interest groups. This helps them to coordinate their work to improve outcomes for threatened species and ecological communities.

5. Currently (August 2025) there are two approved species recovery plans, both covering multiple species, that are relevant to key threatened species in the CG area, as follows (web links):

    - *Sawfish & River Sharks Multi-species Recovery Plan, 2015.* Covers the following species:

        - Speartooth Shark *(Glyphis glyphis).*
        - Northern River Shark *(Glyphis garricki).*
        - Largetooth Sawfish *(Pristis pristis).*
        - Green Sawfish *(Pristis zijsron).*
        - Dwarf Sawfish *(Pristis clavata).*

    - *Recovery Plan for Marine Turtles in Australia, 2017-2027.* Covers the following species:

        - Flatback Turtle *(Natator depressus)* (the most relevant species to the CG area).
        - Hawksbill Turtle *(Eretmochelys imbricata).*
        - Green Turtle *(Chelonia mydas).*
        - Leatherback Turtle *(Dermochelys coriacea).*
        - Loggerhead Turtle *(Caretta caretta).*
        - Olive Ridley Turtle *(Lepidochelys olivacea).*

6. Tables 12 and 13 present key elements of each of these two recovery plans respectively, and how these elements have been addressed by BKA for the CG marine sand proposal.

TABLE 12: *Sawfish & River Sharks Multi-species Recovery Plan*

Published 2015.

NOTE: The Recovery Plan repeats much of the information that is presented in the Conservation Advice for each species that are assessed in section 3.3 above. This is not repeated in this section for reasons of economy.

Key element from the Recovery Plan	How addressed by BKA
1. Species covered: The Recovery Plan covers the following species: – Speartooth Shark (*Glyphis glyphis*). – Northern River Shark (*Glyphis garricki*). – Largetooth Sawfish (*Pristis pristis*). – Green Sawfish (*Pristis zijsron*). – Dwarf Sawfish (*Pristis clavata*). These species have been grouped together in a single recovery plan because of similarity in habitat use, distribution and threats to recovery. All of these species predominantly inhabit the rivers, estuaries and inshore marine habitats of northern Australia.	BKAs' approach to the protection of each of these species is presented in the same order as listed, in Tables 7 to 11 in section 3.3 above, in relation to relevant aspects of the Conservation Advice for each species.
2. Threats to the species: The Recovery Plan is consistent with the Conservation Advice for each species reviewed in section 3.3 above, in that it states that the principal threats to the sawfish and river shark species come from commercial, recreational and indigenous and IUU fishing, habitat degradation and modification, as well as the collection of animals for display in public aquaria and marine debris.	As outlined in Tables 7 to 11 in section 3.3 above the proposed operation will not contribute to any of the threats listed in the Recovery Plan. It does not include any form of fishing, it will not discharge debris into the marine environment, and it will not degrade or modify the species' habitat.
3. Overarching objective of the Recovery Plan: The overarching objective of the Recovery Plan is to assist the recovery of these species in the wild throughout their range in Australian waters by increasing their total population size, with a view to: – improving the population status leading to the removal of these species from the protected species list of the EPBC Act; and – ensuring that anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future.	As outlined in Tables 7 to 11 in section 3.3 above the proposed operation will not contribute to any of the threats listed in the Recovery Plan, and does not pose a risk of significant impact on these species that might affect their population or conservation status, consistent with the EPBC Act significant impact guidelines and criteria. The measures to be implemented by BKA as summarized in section 3.3 above, including the data that will be generated by the proposed monitoring program, will contribute to improved understanding of the species and to their conservation and recovery.
4. Specific objectives of the Recovery Plan: The Recovery Plan lists 10 specific objectives:	
– Objective 1: Reduce and, where possible, eliminate adverse impacts of commercial fishing on sawfish and river shark species.	The proposed operation does not involve commercial fishing.
– Objective 2: Reduce and, where possible, eliminate adverse impacts of recreational fishing on sawfish and river shark species.	The proposed operation does not involve recreational fishing.
– Objective 3: Reduce and, where possible, eliminate adverse impacts of indigenous fishing on sawfish and river shark species.	The proposed operation does not involve indigenous fishing.

Key element from the Recovery Plan	How addressed by BKA
– Objective 4: Reduce and, where possible, eliminate the impact of IUU fishing on sawfish and river shark species.	The proposed operation does not involve IUU fishing.
– Objective 5: Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species.	The proposed operation will not degrade or modify the species' habitat. The POA is located in deeper, open waters in the central part of CG, away from coastal foraging areas. The sandy seabed within the POA, which is highly dynamic with constantly mobile sand-waves driven by strong tidal currents, does not provide suitable foraging habitat.
– Objective 6: Reduce and, where possible, eliminate any adverse impacts of marine debris on sawfish and river shark species noting the linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.	The proposed operation will not discharge debris into the marine environment (see also section 3.5 below).
– Objective 7: Reduce and, where possible, eliminate any adverse impacts of collection for public aquaria on sawfish and river shark species.	The proposed operation does not involve collecting for public aquaria.
– Objective 8: Improve the information base to allow the development of a quantitative framework to assess the recovery of, and inform management options for, sawfish and river shark species.	This is not applicable to the proposed operation as it will not contribute to any of the key threats to the species as identified in the Recovery Plan, which are aligned with the 10 objectives.
– Objective 9: Develop research programs to assist conservation of sawfish and river shark species.	This is not applicable to the proposed operation as it will not contribute to any of the key threats to the species as identified in the Recovery Plan, which are aligned with the 10 objectives.
– Objective 10: Improve community understanding and awareness in relation to sawfish and river shark conservation and management.	This is not applicable to the proposed operation as it will not contribute to any of the key threats to the species as identified in the Recovery Plan, which are aligned with the 10 objectives.
5. Actions to achieve the 10 Objectives: The Recovery Plan outlines recommended actions to achieve the 10 objectives, with associated performance criteria and identification of responsible agencies and potential partners.	The recommended actions are not applicable to the proposed operation as they are aligned with the 10 objectives, which are not applicable to the proposed operation as outlined above. Depending on the recommended action, the responsible agencies are identified as Commonwealth, State and Territory and local government agencies, the commercial and recreational fishing sectors, research institutions, NGOs and First Nations groups, and potential partners also include the commercial and recreational fishing sectors, research institutions, NGOs and First Nations groups.

TABLE 13: *Recovery Plan for Marine Turtles in Australia, 2017-2027*

Key element from the Recovery Plan	How addressed by BKA
1. Species covered: The Recovery Plan covers all six species of marine turtle that are found in Australian waters, as follows: – Flatback Turtle *(Natator depressus)* (the most relevant species to the CG area). – Hawksbill Turtle *(Eretmochelys imbricata).* – Green Turtle *(Chelonia mydas).* – Leatherback Turtle *(Dermochelys coriacea).* – Loggerhead Turtle *(Caretta caretta).* – Olive Ridley Turtle *(Lepidochelys olivacea).*	BKA has given priority focus to Flatback Turtles as the most significant species found in the general CG area and given the significant Flatback nesting beach at Cape Domett to the east and just outside of CG. However, the impact prevention, mitigation, monitoring and response measures proposed by BKA apply equally to any species of marine turtle. A detailed description of marine turtles, including Flatback Turtles in the CG area, is presented in section 9.4 of EPBC Referral Report No. 2 - *Setting & Existing Environment*, supported by Annex 12 to that report - *DBCA Cape Domett Turtle Data Report*. Potential impacts of the proposed operation on Flatback Turtles are assessed in Section 10.3.2 of EPBC Referral Report No. 4 - *Impact Assessments* in accordance with WA EPA guidelines and impact mitigation hierarchy, and find no significant or residual impacts in accordance with those guidelines. Potential impacts of the proposed operation on Flatback Turtles are assessed in Section 10.2 of EPBC Referral Report No. 7 - *Commonwealth Matters* in accordance with EPBC Act significant impact criteria and impact mitigation hierarchy, and finds no significant or residual impacts in accordance with those criteria. Additional information on marine turtle issues is presented in Section 2 - *Current Speeds in the POA & Turtle Swimming Speeds*, and Section 3 - *Analysis of Turtle Satellite Tracking - Cape Domett*, of EPBC Referral Supplementary Report No. 4 - *Additional Information.* Proposed impact prevention, mitigation, monitoring and response measures for marine turtles are presented in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*.
2. Threats to the species: The Recovery Plan applies a risk assessment approach and states that the risk posed by anthropogenic threats to marine turtle stocks varies depending on the habitats they occupy, timing of habitat occupancy, life cycle stage affected, abundance and trends in nesting and foraging numbers, and the management and mitigation currently in place. The Recovery Plan identifies the following main anthropogenic threats to marine turtles:	
– climate change and variability;	The proposed operation will not contribute to climate change and variability to a degree that could affect marine turtles. Section 12 of EPBC Referral Report No. 5 - *Impact Assessments* assesses greenhouse gas (GHG) emissions from the proposed operation in accordance with WA EPA guidelines, and finds that emissions will not exceed the WA EPA trigger level of 100,000 tonnes CO2-e in any year, and therefore does not trigger assessment under the WA Environmental Protection Act. The SPV will comply with Annex VI (Air Pollution) of the MARPOL Convention and the implementing Australian regulations (AMSA Marine Order 97). These regulations set strict standards and limits on GHG emissions from ships, and require ships to implement a range of on-board energy efficiency and emissions reduction strategies and plans, including having an IMO-compliant ship-specific Energy Efficiency Design Index (EEDI) and Shipboard Energy Efficiency Management Plan (SEEMP).
– marine debris;	The proposed operation will not discharge debris into the marine environment (see also section 3.5 below).
– chemical and terrestrial discharge;	The proposed operation will not contribute to chemical and terrestrial discharge.

Key element from the Recovery Plan	How addressed by BKA
– international take;	The proposed operation will not contribute to international take.
– terrestrial predation;	The proposed operation will not contribute to terrestrial predation.
– fisheries bycatch;	The proposed operation will not contribute to fisheries bycatch.
– light pollution;	Potential impacts of light emissions from the SPV on nesting and hatching turtles in the CG area are assessed in EPBC Supplementary Report No. 1 - *Light Assessment* in accordance with both the *National Light Pollution Guidelines for Wildlife* (DCCEEW 2023) and WA EPA requirements, and finds no significant impacts. The SPV will be permanently fitted with turtle safe lighting as specified in DCCEEW (2023) and other light impact prevention, mitigation and monitoring measures will be implemented as outlined for CEO 10 - *SPV Lighting* in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*.
– habitat modification through infrastructure/coastal development and dredging and trawling;	The proposed operation will not cause habitat modification through infrastructure/coastal development as it does not involve any form of infrastructure/coastal development – it is a 100% vessel-based marine operation. The proposed operation will not involve trawling. The proposed sand-sourcing will involve a form of dredging, with the SPV being based on the design principles of a Trailer Suction Hopper Dredger (TSHD), albeit with only a single suction-arm and drag-head (standard TSHD's usually have a pair of suction-arms and drag-heads). The proposed sand sourcing will not modify habitat that is significant to marine turtles. Sand sourcing will be restricted to the POA which is located in the deeper open waters of the main body of CG, with an average depth of -20.6 m LAT and a max depth of -44 m LAT. The seabed in the POA comprises highly dynamic, constantly mobile sand-waves driven by extremely strong tidal currents, and does not provide suitable foraging or inter-nesting habitat for marine turtles. A detailed description of the environmental conditions and lack of benthic biota in the POA is provided in sections 5, 6.4.2, 6.4.3 and 6.4.4 of 6.4.4.8 of EPBC Referral Report No. 2 - *Setting & Existing Environment*. Although the environmental conditions within CG do not provide suitable inter-nesting habitat, DCCEEW has declared a Flatback Turtle inter-nesting 'buffer' Biologically Important Area (BIA) for a 60 km radius around Cape Domett and Lacrosse Island, which includes the waters within CG. This is discussed in detail in the response to Element 7 below. The most important turtle habitat in the CG area is a major Flatback Turtle nesting beach at the Cape Domett Seaward Beach, located outside and to the east of CG, and lesser nesting beaches at Turtle Bay on Lacrosse Island, at Turtle Bay West on the seaward coast outside of CG, west of Cape Dussejour, and a nesting site located on stranded sand ridges behind mangroves at Barnett Point, inside CG. Peak nesting is in August-September, in contrast to Flatback Turtles on the west coast of WA, where peak nesting is in Nov-Jan (Whiting et al 2008). A detailed description of the turtle nesting beaches in the CG area, including the results of aerial drone surveys, is presented in section 9.2.5 of EPBC Referral Report No. 2 - *Setting & Existing Environment*, supported by Annex 12 to that report - *DBCA Cape Domett Turtle Data Report*. Potential impacts of the proposed operation on the turtle nesting beaches in the CG area are assessed in detail in Section 5 - *Sediment Transport & Beach Processes*, of EPBC Referral Report No. 8 - *Full Modeling Report*. This included high-resolution aerial drone LiDAR surveys of the beaches, analysis of historical beach dynamics using satellite imagery, characterisation of sediment supply processes at each beach, and numerical modelling to predict potential changes at the beaches from potential changes to sediment supply from the proposed sand sourcing within CG. The assessment found that the proposed operation will not affect beach processes. Never-the-less, as a precaution, should the proposed operation go ahead, monitoring of the beaches is proposed, including regular high-resolution aerial drone LiDAR surveys, as outlined in CEO 9: *Coastal Processes & Beaches* of EPBC

Key element from the Recovery Plan	How addressed by BKA
	Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*
– indigenous take;	The proposed operation will not contribute to indigenous take.
– vessel disturbance;	The two main potential vessel disturbance impacts of the proposed operation on marine turtles are: – Vessel strike: Potential vessel strike from the Sand Production Vessel (SPV) on a turtle swimming at or near the sea surface; and – Drag-head entrainment: Potential entrainment in the SPV's drag-head, in the unlikely event that a marine turtle is sitting on the seabed in the path of the drag-head when it is operating. Potential impacts are assessed in Section 10.3.2 - *Flatback Turtles* of EPBC Referral Report No. 4 - *Impact Assessments* in accordance with WA EPA guidelines and impact mitigation hierarchy, and in Section 10.2 - *Specific Assessment for Flatback Turtles* of EPBC Referral Report No. 7 - *Commonwealth Matters* in accordance with the EPBC Act significant impact criteria and impact mitigation hierarchy. The assessments find no significant or residual impacts in accordance with respective guidelines, criteria and the impact mitigation hierarchy, including through the application of the following impact prevention, mitigation, monitoring and response measures. **Vessel strike** prevention, mitigation, monitoring & response measures: Potential vessel strikes will be prevented, mitigated and monitored as outlined in CEO 7 - *Vessel Strike*s in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*, as follows: CEO 7: Vessel Strikes: No significant negative impacts are caused to populations of surface-dwelling marine fauna in CG from vessel strikes by the SPV. Impact prevention: Very low likelihood of encounters due to: – Very low occurrence of these species in the POA (as indicated by lack of suitable seabed habitat, extreme tidal currents, dedicated site survey results and analysis of satellite tracking data). – Very low presence of the SPV in CG (1-2 days every 2 weeks with zero presence in CG for 86% of the time during the project lifespan). – SPV Marine Fauna Observation & Avoidance (MFOA) measures (with TOs): – Very low vessel speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures. – Western entry/exit route: Restricting entry & exit of the SPV into and out of CG to West Entrance, furthest from the main nesting beach at Cape Domett. Impact mitigation: – SPV MFOA measures (with TOs) (this is both an impact prevention & mitigation measure). – Very low speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures (this is both an impact prevention & mitigation measure). Trigger Criteria (TCs), Trigger Response Actions (TRAs), Threshold Criteria (THCs), Threshold Contingency Actions (TCAs) and monitoring and reporting measures for CEO 7 are specified in the Draft EMP, in accordance with WA EPA criteria, which DCCEEW advised is the accepted template for this proposal. **Drag-head entrainment** prevention, mitigation, monitoring & response measures: Potential drag-head entrainment will be prevented, mitigated and monitored as outlined in CEO 11 - Drag-head Entrainment in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)* as follows:

Key element from the Recovery Plan	How addressed by BKA
	– CEO 11: Drag-head Entrainment: No significant negative impacts are caused to populations of large epibenthic species in CG from entrainment in the SPV's drag-head. Impact prevention: Very low likelihood of encounters due to: – Very low occurrence of marine turtles on the seabed in the POA (as indicated by lack of suitable seabed habitat, extreme tidal currents, dedicated site surveys results and analysis of satellite tracking data). – Very low presence of the SPV in CG (1-2 days every 2 weeks with zero presence in CG for 86% of the time during the project lifespan). – Single drag-head: The SPV will only have a single suction-arm and drag-head (standard TSHD's usually have a pair of suction-arms and drag-heads). – SPV MFOA measures (with TOs). Very low speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures. Impact mitigation: – Soft-start procedure: This involves slowly lowering the drag-head to the seabed and starting at low pump revolutions, providing opportunity for any marine fauna on the seabed to move away. This is a recognized mitigation measure in the Recovery Plan and is has been accepted as best practice in dredging projects across marine turtle areas of Australia for over ten years. – Marine fauna excluder ('turtle tickler chains'): Will be fitted in front of the drag-head. This is a recognized mitigation measure in the Recovery Plan and is has been accepted as best practice in dredging projects across marine turtle areas of Australia for over ten years. – SPV MFOA measures (with TOs) (this is both an impact prevention & mitigation measure). – Very low speed: The SPV will operate at very low speeds (<2 knots) when loading sand in CG, allowing fauna to move away; and improving the effectiveness of MFOA measures (this is both an impact prevention & mitigation measure). Trigger Criteria (TCs), Trigger Response Actions (TRAs), Threshold Criteria (THCs), Threshold Contingency Actions (TCAs) and monitoring and reporting measures for CEO 11 are specified in the Draft EMP, in accordance with WA EPA criteria, which DCCEEW advised is the accepted template for this proposal. **Enhanced measures** during peak-nesting season: While the above measures are assessed as being more than adequate for preventing and mitigating the potential for significant impacts in all seasons, as an additional precaution enhanced vessel strike and drag-head prevention and mitigation measures are proposed during the peak Flatback Turtle nesting season in the CG area (Aug-Sept), including: – Very low presence of the SPV in CG during this period (4 loading cycles of up to 2 days each = max of 8 days presence during the season). – Spatial restriction on sand-sourcing operations to the western half of the POA (furthest from the main nesting beach at Cape Domett) during the season (please refer map of the proposed restricted area in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*. – Doubling the MFOA effort during the season (from two active observers to four active observers) (pls refer the C-EMP for details of the proposed MFOA measures).
– noise interference;	Underwater Noise: The design and construction of the SPV will include relevant best-practice noise reduction measures in accordance with the *IMO Underwater Radiated Noise Guidelines* (IMO 2023), which constitute the international standard. Potential impacts of underwater noise are assessed in EPBC Supplementary Report No. 2 - *Noise Assessment*. This includes detailed modelling of predicated noise emissions from the SPV and assessment of potential auditory

Key element from the Recovery Plan	How addressed by BKA
	injury and behavioural impacts on marine turtles, in accordance with the US NMFWS criteria (as required by WA EPA), using a risk assessment approach, and finds that potential impacts are negligible. Despite the assessment that potential impacts are negligible, BKA proposes to undertake monitoring of underwater noise in CG during commencement of operations to assess compliance with the findings of the Noise Assessment, as described in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*.
– recreational activities; and	The proposed operation will not contribute to impacts from recreational activities.
– disease and pathogens.	The proposed operation will not contribute to significant impacts from disease and pathogens in marine turtles (pls refer section 3.2 above).
3. Long-term recovery objective: The long-term recovery objective of the Recovery Plan is to minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list.	BKA is already contributing to the long-term recovery objective as reported in Annex 12 - *DBCA Cape Domett Turtle Data* Report of EPBC Referral Report No. 2 - *Setting & Existing Environment*, including: – Entering into a data-sharing agreement with the WA Department of Biodiversity Conservation & Attractions (DBCA) and undertaking analysis and reporting of ten-years of data from DBCA's long-term monitoring program at the Cape Domett Seaward Beach, to help inform the improved management of marine turtles. – Undertaking dry- and wet-season aerial drone surveys of all potential turtle nesting sites in the CG area, and expanding the identification and characterization of nesting sites in the area. – Undertaking dry- and wet-season marine fauna surveys, including for marine turtles, throughout CG area, covering over 820 km of transects in each survey, to provide data to help inform the improved management of marine turtles. Should the proposal proceed, BKA would seek to further support the long-term recovery objective, in cooperation with relevant agencies and local First Nation's peoples, including: – Supporting the expansion of DBCA's current long-term monitoring program at the Cape Domett Seaward Beach to other nesting sites in the CG area. – Supporting satellite tagging and movement tracking of marine turtles in the CG area. – Implementing proposed impact prevention, mitigation, monitoring and response measures for marine turtles outlined in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).* – Making all data from the proposed Marine Fauna Observation & Avoidance (MFOA) program publicly available (e.g. on a web site), to further inform the improved management of marine turtles.
4. Interim recovery objectives: The plan suggests that the long-term recovery objective is unlikely to be achieved during the ten -year life of the plan (2017-2027), and therefore sets four interim objectives and associated actions for the life of the plan (to 2027), as follows:	
– Interim Objective 1: Current levels of legal and management protection for marine turtles are maintained or improved both domestically and throughout the migratory range of Australia's marine turtles.	This Interim Objective is primarily the responsibility of government agencies and research bodies.

Key element from the Recovery Plan	How addressed by BKA
– Interim Objective 2: The management of marine turtles is supported.	BKA is already contributing to improving the management of marine turtles, as outlined in the response to the Element 3 - Long-term recovering objective, above. Should the proposal proceed, BKA would seek to further support improving the management of marine turtles, in cooperation with relevant agencies and local First Nation's peoples, as outlined in the response to the Element 3 - Long-term recovering objective, above.
– Interim Objective 3: Anthropogenic threats are demonstrably minimised.	The proposed impact prevention, mitigation, monitoring and response measures for marine turtles outlined in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)* and as summarized throughout this table, will prevent and minimize anthropogenic threats to marine turtles in the CG area, as far as they relate to the proposed operation.
– Interim Objective 4: Trends at index beaches, and population demographics at important foraging grounds are described.	BKA is already contributing to improving the understanding of Flatback Turtle nesting and population trends at the Cape Domett Seaward Beach and other beaches in the CG area as, as outlined in the response to Element 3 - Long-term recovering objective, above. Should the proposal proceed, BKA would seek to further support understanding of nesting and population trends as also outlined in the response to Element 3 - Long-term recovering objective, above.
6. Actions: The Recovery Plan includes a number of Actions that are designed to address the main threats to marine turtles as listed against Element 2 above and support achievement of the Interim Objectives as listed against Element 5 above, divided into A. Assessing & addressing threats and B. Enabling & measuring recovery, as follows:	NOTE: There is repetition in the responses to Element 6 below as the Actions largely mirror the Interim Objectives in Element 5 above. However, each Action is included and addressed in turn so as to prove a complete picture of how BKA has addressed / will address all aspects of the Recovery Plan.
A Actions - Assessing & addressing threats:	
– A1. Maintain and improve efficacy of legal and management protection.	This Action is primarily the responsibility of government agencies and research bodies.
– A2. Adaptively manage turtle stocks to reduce risk and build resilience to climate change and variability.	As per response against climate change in Element 2 above, the proposed operation will not contribute to climate change and variability to a degree that could affect marine turtles.
– A3. Reduce the impacts from marine debris.	As per response against marine debris in Element 2 above, the proposed operation will not discharge debris into the marine environment (see also section 3.5 below).
– A4. Minimise chemical and terrestrial discharge:	As per response against chemical and terrestrial discharge in Element 2 above, the proposed operation will not contribute to chemical and terrestrial discharge.
– A5. Address international take within and outside Australia's jurisdiction:	As per response against international take in Element 2 above, the proposed operation will not contribute to international take.
– A6. Reduce impacts from terrestrial predation:	As per response against terrestrial predation in Element 2 above, the proposed operation will not contribute to terrestrial predation.
– A7. Reduce international and domestic fisheries bycatch:	As per response against fisheries bycatch in Element 2 above, the proposed operation will not contribute to fisheries bycatch.

Key element from the Recovery Plan	How addressed by BKA
– A8. Minimise light pollution:	As per response against light pollution in Element 2 above, the proposed operation will not cause impacts on marine turtles from light pollution.
– A9. Address the impacts of coastal development/infrastructure and dredging and trawling:	As per response against this item in Element 2 above, the proposed operation will not cause habitat modification through infrastructure/coastal development and will not involve trawling. As per response against this item in Element 2 above, the proposed sand-sourcing will involve a form of dredging within the POA only, and this will not cause impacts on habitat that is significant for marine turtles.
– A10. Maintain and improve sustainable Indigenous management of marine turtles:	As per response against indigenous take in Element 2 above, the proposed operation will not contribute to indigenous take. Should the proposal proceed, BKA would seek to further support improving the management of marine turtles, in cooperation with relevant agencies and local First Nation's peoples, as outlined in the response to the Element 3 - Long-term recovering objective, above.
B Actions - Enabling & measuring recovery:	
– B1. Determine trends at index beaches:	As per response against Interim Objective 4 under Element 5 above, BKA is already contributing to improving the understanding of Flatback Turtle nesting and population trends at the Cape Domett Seaward Beach and other beaches in the CG area. Should the proposal proceed, BKA would seek to further support understanding of nesting and population trends as also outlined in the response to Element 3 - Long-term recovering objective, above.
– B2. Understand population demographics at key foraging grounds:	CG is not a foraging ground for marine turtles so this Action is not directly relevant.
– B3. Address information gaps to better facilitate the recovery of marine turtle stocks:	As also outlined in the response to Element 3 - Long-term recovering objective, and other response above, BKA is already contributing to addressing information gaps to better facilitate the recovery of marine turtle stocks, and will continue to do so, should the proposed operation proceed.
7. Biologically Important Areas (BIA's): The Recovery Plan describes BIAs as areas where protected species display biologically important behaviour, such as breeding, foraging, resting and migration, and identifies various BIAs around Australia for all six marine turtle species. Although the environmental conditions within CG do not provide suitable inter-nesting habitat (very strong tidal currents, deeper waters etc), a Flatback Turtle inter-nesting 'buffer' BIA is designated for a 60 km radius around Cape Domett and Lacrosse Island, which includes the waters within CG.	An inter-nesting area is where female turtles 'rest' between each egg-laying effort on the nesting beaches, regaining energy and strength for the next egg-laying effort, which are energetically very demanding. Flatback Turtle inter-nesting periods range from a few days up to 13 days, during which time they spend most of their time resting on the seabed, and they do not feed at all during inter-nesting (Whiting et al 2008). A detailed description of Flatback Turtles and discussion of the BIA in the CG area is presented in section 9.4.2 of EPBC Referral Report No. 2 - *Setting & Existing Environment*, supported by Annex 12 to that report - *DBCA Cape Domett Turtle Data Report.* Potential impacts of the proposed operation on Flatback Turtles are assessed in Section 10.3.2 of EPBC Referral Report No. 4 - *Impact Assessments* in accordance with WA EPA guidelines and impact mitigation hierarchy, and find no significant or residual impacts in accordance with those guidelines. Potential impacts of the proposed operation on Flatback Turtles are assessed in Section 10.2 of EPBC Referral Report No. 7 - *Commonwealth Matters* in accordance with EPBC Act significant impact criteria and impact mitigation hierarchy, and finds no significant or residual impacts in accordance with those criteria. As outlined in those reports, and particularly in Section 10.2 of EPBC Referral Report No. 7 - *Commonwealth Matters*, the 60 km radius for the Cape Domett inter-nesting BIA is based on satellite tracking from the Pilbara region of WA, located ~ 1,500 km to the west of CG and comprising a different population of Flatback Turtles than those found in the CG area, and which, as outlined above, nest in the opposite season. The tracking showed that Pilbara female Flatbacks can move 'up to' 60 km offshore during inter-nesting, but typically

Key element from the Recovery Plan	How addressed by BKA
	stay much closer (~3 km) to the nesting beach, to conserve energy (Whittock et al 2014). Application of the 60 km radius for the Cape Domett inter-nesting BIA did not consider the characteristics and behaviour of the local population, which are different from the Pilbara, and also did not consider local environmental conditions in CG, which are also different from the Pilbara The environmental conditions inside CG, and especially in the POA, including extreme tidal current velocities, deeper waters (up to -44 m LAT with an average depth of -20.6 m) and highly-dynamic, constantly moving sand waves on the seabed, make this area unsuitable for inter-nesting resting by marine turtles. Regaining energy during inter-nesting intervals requires no significant net loss of energy reserves as a result of energy expended, including any energy expended from swimming that might be required against currents in the area. Like all marine turtles, Flatback Turtles do not feed during inter-nesting intervals, so energy expenditure must come from stored fat reserves during this period, while also retaining sufficient energy for the following egg laying efforts (which have high energy demand) (Whittock pers. comms., 2025). Therefore, should a turtle be required to expend excess energy during an inter-nesting interval, for example in order to swim against currents in order to remain on the seabed in an area, the 'resting' benefits of inter-nesting would be negated. The main nesting beaches in the CG area are located on the seaward coast and face out to sea. After each nesting event Flatbacks would most likely head straight offshore to the inner waters of Joseph Bonaparte Gulf, where current velocities are less and conditions are more favourable than within CG, for their inter-nesting rest, before coming back to the beach again. Section 2 - *Current Speeds in the POA & Turtle Swimming Speeds* of EPBC Referral Supplementary Report No. 4 - *Additional Information*, presents an analysis of measured current speeds in the POA against typical swim speeds of adult Flatback Turtles. The analysis finds that it is unlikely that Flatback Turtles could effectively rest on the sandy seabed in the POA between nesting attempts, due to the relatively strong near-bed currents. The analysis also finds that based on the spatial distribution of current speeds in the CG area, it is likely that Flatback Turtles would choose an area with lower current speeds for inter-nesting resting (e.g. on the east side of CG, to the north or south of Lacrosse Island and adjacent to / offshore from the nesting beaches), and not in the main body of CG and especially not in the POA. This is borne out by site surveys and tracking of turtles in the CG area. Section 3 - *Analysis of Turtle Satellite Tracking - Cape Domett*, of EPBC Referral Supplementary Report No. 4 - *Additional Information*, presents an analysis of two previous satellite tagging and tracking programs of nesting female Flatback Turtles at Cape Domett, one in June 209 and one from August 2025 to August 2027, as reported on www.seaturtle.org. A total of 16 turtles were fitted with satellite trackers, comprising and five in the initial and 11 in the later study. The analysis shows that: – All 16 tracked turtles undertook inter-nesting movements immediately offshore from Cape Domett until the end of nesting, whereafter they headed further offshore into Joseph Bonaparte Gulf, then either NE towards Darwin and locations in the Arafura Sea beyond, or NW towards the Timor Sea and locations offshore from the West Kimberley. – Eleven of the 16 tracked turtles do not appear to have entered CG. – Two of the 16 tracked turtles appear to have entered CG, but on the far eastern side only, close to the coast near to Cape Domett, and do not appear to have entered the POA. – Two of the 16 tracked turtles may have 'possibly' entered CG, although the low resolution of the maps makes this difficult to ascertain, and again on the far eastern side only, close to the coast near to Cape Domett, and they do not appear to have entered the POA. – Only one of the 16 tracked turtles appears to have crossed the south-eastern corner of the POA. The analysis therefore supports the assessment that the waters inside CG and especially in the POA do not provide suitable inter-nesting conditions, that most turtles head straight offshore to the inner waters of Joseph Bonaparte Gulf for their inter-nesting rest, and the few that do enter CG remain close to the coast on the far eastern side, nearest to Cape Domett, where currents are less.

Key element from the Recovery Plan	How addressed by BKA

	The dry- and wet-season marine fauna surveys commissioned by BKA as reported in EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report* support this analysis further, with very low numbers of sightings of marine turtles in CG overall, and even less in the POA, as follows:
	
	– Dry-season survey (late July 2023 - near peak nesting period):
	  – Five Flatback Turtle sightings (three near Cape Domett where the main nesting beach is, one near Adolphus Island and one on the west side of CG and none on the POA).
	  – Seven unidentified turtle sightings (one near Cape Domett, one near Adolphus Island, one on the west side of CG, one on the east side of CG, two near Lacrosse Island and one within the POA).
	
	– Wet-season survey (February 2024):
	  – Two unidentified turtle sightings in CG, one inside the POA, and no other sightings.
	
	Only one turtle was observed in the POA on each survey, both unidentified species. It should be noted that different sightings could be the same individual(s), so the actual number of turtles may be less than the number of sightings. These are very low numbers of on-water sightings considering the very large area covered (over 820 km per survey), especially in late July 2023 near the peak nesting season, when hundreds of tracks and nests were observed on the nesting beaches.
	
	These low on-water sighting numbers further indicate that the area within CG may not be significant as an inter-nesting area by Flatback Turtles, despite the 60 km radius of the inter-nesting BIA extending inshore over CG.
	
	Never-the-less, there is always a possibility of a turtle passing through the POA when the SPV is operating there, presenting the possibility of either a vessel strike if the turtle is on or near the sea surface, or of being entrained in the SPV's drag-head in the unlikely event that the turtle is on the seabed. The proposed impact prevention, mitigation, monitoring and response actions for potential vessel strikes and drag-head entrainment, as well as proposed enhanced measures during peak nesting season, are described against 'vessel disturbance' under Element 2 above, and are not repeated here for reasons of economy.

8. Oil spill risk: The Recovery Plan states that for the Cape Domett Flatback Turtle stock, potential spills are a concern due to increasing number of oil and gas installations occurring along the Western Australian coast. The Recovery Plan identifies a priority action for the recovery of the Cape Domett stock as: – 'Ensure that spill risk strategies and response programs include management for turtles and their habitats, particularly in reference to *slow to recover habitats, e.g. nesting beaches* and important foraging grounds.'	The proposal does not involve any oil and gas installations. There are no oil installations offshore from Cape Domett and the closest offshore gas installation is the Black Tip well located over 100 km offshore from Cape Domett, which produces LNG and not oil and is operated by ENI Australia. The reference to *'slow to recover habitats, e.g. nesting beaches'* is scientifically incorrect. Sand beaches that become oiled are amongst the fastest environments to recover from oiling, and are highly amenable to physical cleaning which can speed up recovery even more quickly. BKA has given extremely high priority to preventing a potential oil spill from the SPV when it is operating in CG, and to implementing best practice spill response, containment, clean-up and mitigation and recovery measures, with very high priory placed on the protection of turtle nesting sites in the CG area (which are mostly located outside of CG). Potential oil spills are assessed in Annex 2 - *Shipping & Oil Spill Risk Assessment* of EPBC Referral Report No. 4 - *Impact Assessments* and finds that risk is low, including through the application of best-practice impact prevention and mitigation measures. Potential oil spills will be prevented, mitigated and responded to as described in CEO 2 - *Oil Spills* in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*

3.5 Species Threat Abatement Plans

1. As outlined in section 2 above, item 1.3 of DCCEEW's RFI states *'Please demonstrate that the proposal has had regard to relevant conservation advices, and is not inconsistent with recovery plans and/or threat abatement plans, etc.'*

2. Threat abatement plans are developed by DCCEEW and approved by the Australian Government environment minister, to establish a national framework to guide and coordinate Australia's response to key threatening processes for specific threatened species and ecological communities, registered under the EPBC Act. The plans identify research, management and other actions needed to ensure the long-term survival of native species and ecological communities affected by key threatening processes.

3. Currently (August 2025) there is only one approved threat abatement plan that relates to coastal and marine species:

   - *Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (2018)* (short title *Marine Debris Threat Abatement Plan).*

4. Under subsection 279(2) of the EPBC Act, the Australian Government environment minister is required to review threat abatement plans at least every five years. However, at August 2025 the 2018 *Marine Debris Threat Abatement Plan* has not yet been reviewed.

5. The plan identifies discharges of garbage, including plastics and other debris, from vessels as one of many sources of marine debris that can impact on marine and coastal vertebrate wildlife.

6. The plan identifies compliance of vessels with Annex V of the *International Convention for the Prevention of Pollution from Ships* (MARPOL Convention), which regulates garbage pollution from ships, as being the key action for addressing marine debris from vessels.

7. The SPV will not discharge garbage or any other forms of debris into the marine environment. It will comply in full with Annex V of the MARPOL Convention. All garbage produced on board the SPV (e.g. from the day-to-day domestic activities of the crew) will be kept on-board the SPV and managed in accordance with a MARPOL-compliant shipboard garbage management plan. All garbage will be discharged to MARPOL-compliant port waste reception facilities at the sand delivery port (Singapore) for appropriate treatment, including recycling where relevant. Details are outlined against CEO 3 - Marine Debris, in EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*

4. RESPONSE TO RFI ITEM 2 - ECONOMIC & SOCIAL MATTERS

1. As outlined in section 2 above, Attachment B to DCCEEW's RFI letter of 16 July 2025 requests BKA to provide information on economic and social matters relating to the proposal.

2. An email from BKA's lead environmental consultant to DCCEW on 16 July 2025 pointed out that information on economic and social matters had already been provided, in particular in section 11.3 of Referral Report No 2, sections 8 and 9 of Referral Report No 3 and section 13 of Referral Report No 4, and queried why information that had already been provided would need to be provided again under an RFI.

3. In the response from DCCEEW dated 18 July 2025 it was stated:

   - *'Thank you for directing us to the abovementioned sections. The department is satisfied with the information at paragraphs 11-12 of section 13.3 Impact Assessment and section 13.5 Likely Environmental Outcomes of Referral Report No 4, and section 9 of Referral Report No 3. Please simply address that point of the RFI accordingly'*

4. This item is therefore deemed to have been addressed and that no further action is required by BKA.

5. RESPONSE TO RFI ITEM 3 - ENVIRONMENTAL MANAGEMENT PLAN

1. As outlined in section 2 above, Attachment B to DCCEEW's RFI letter of 16 July 2025 provides detailed comments on Draft 1 of the proposed Environmental Management Plan (EMP) for the proposed operation that had been submitted to DCCEEW for review on 10 June 2025.

2. Draft 2 of the proposed EMP has been developed, addressing DCCEEW's review comments, and this is submitted separately as EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP)*, along with a table listing how each of DCCEEW's review comments have been addressed.

REFERENCES

References Cited:

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- Brown, A.M., Bejder, L., Pollock, K. H. and Allen, S. J. (2016) *Site-Specific Assessments of the Abundance of Three Inshore Dolphin Species to Inform Conservation and Management.* Front. Mar. Sci. 3:4.doi: 10.3389/fmars.2016.00004
- Commonwealth of Australia (2009). *National Assessment Guidelines for Dredging.*
- DCCEEW (2024). *National Guidelines for the Survey of Cetaceans, Marine Turtles and Dugong.*
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- DCCEEW (2021). *EPBC Act significant impact guidelines.*
- Kyne P.M., et al (2021) *Molecular analysis of newly-discovered geographic range of the threatened river shark Glyphis glyphis reveals distinct populations*. Report to the National Environmental Science Program, Marine Biodiversity Hub. Charles Darwin University and CSIRO.
- Kyne P.M. (2020). *Sampling in 11 rivers yields expanded range and population size estimate for the Northern River Shark.* Marine Biodiversity Hub - National Environmental Science program: Fact Sheet June 2020.
- Whiting, A., Thomson, A., Chaloupka, M., & Limpus, C. (2008). *Seasonality, abundance and breeding biology of one of the largest populations of nesting flatback turtles, Natator depressus: Cape Domett, Western Australia*. Australian Journal of Zoology, 2008(5), 297-303.
- Whittock, Paul & Pendoley, Kellie & Hamann, Mark. (2014). *Inter-nesting distribution of flatback turtles Natator depressus and industrial development in Western Australia.* Endangered Species Research. 26. 25-38. 10.3354/esr00628.

Cited Referral Documents:

- EPBC Referral Report No. 2 - *Setting & Existing Environment.*
- EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 11 - *Sediment Contamination Assessment.*
- EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 12 - *DBCA Cape Domett Turtle Data Report.*
- EPBC Referral Report No. 2 - *Setting & Existing Environment* - ANNEX 14 - *Marine Fauna Surveys Report*.
- EPBC Referral Report No. 3 - *Traditional Owner Matters.*
- EPBC Referral Report No. 4 - *Impact Assessments.*
- EPBC Referral Report No. 6 - *Consultation.*
- EPBC Referral Report No. 7 - *Commonwealth Matters.*
- EPBC Referral Report No. 8 - *Full Modeling Report*
- EPBC Supplementary Report No. 1 - *Light Assessment*.
- EPBC Supplementary Report No. 2 - *Noise Assessment.*
- EPBC Supplementary Report No. 3 - *Commonwealth Environmental Management Plan (C-EMP).*
- EPBC Referral Supplementary Report No. 4 - *Additional Information.*

Conservation Advice documents:

- *Conservation Advice for Orcaella heinsohni (Australian Snubfin Dolphin), March 2025.*
- *Conservation Advice for Sousa sahulensis (Australian Humpback Dolphin), March 2025.*
- *Conservation Advice for Glyphis glyphis (Speartooth Shark), April 2014.*
- *Conservation Advice for Glyphis garricki (Northern River Shark). April 2014.*
- *Conservation Advice for Pristis pristis (Largetooth Sawfish), April 2014.*
- *Conservation Advice for Pristis zijsron (Green Sawfish), undated.*
- *Conservation Advice for Pristis clavata (Dwarf Sawfish), October 2009.*

Species Recovery Plans:

- *Sawfish & River Sharks Multi-species Recovery Plan, 2015.*
- *Recovery Plan for Marine Turtles in Australia, 2017-2027.*

Threat Abatement Plans:

- *Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (2018).*