

**MES**

**MARINE&EARTH**  
SC I E N C E S

Client:

WGA

Project:

Bowen Marine Infrastructure Replacement -  
Marine Geophysical Investigation

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## 1 INTRODUCTION

Marine and Earth Sciences (MES) has been commissioned by WGA to undertake a marine geophysical survey which uses active sonar sources as part of geotechnical investigations to support of the Bowen Marine Infrastructure Replacement Project for North Queensland Bulk Ports (NQBP).

The location of the investigation areas is highlighted in Figure A below with works to take place only within the defined port lease boundary.



**Figure A – Investigation Site**

This Environmental Management Plan (EMP) has been developed to identify risks to the surrounding environmental values and to outline controls to limit or eliminate them as part of the proposed geophysical surveys.

## 2 GENERAL SITE DESCRIPTION

The survey area extends up to 700m from the shoreline at Bowen into McCanes Bay, which falls within the Great Barrier Reef World Heritage Area.

A Protected Matters search has been undertaken to assess the national environmental significance of site-specific natural habitats and features. Table 1 below highlights the marine megafauna species most likely to be encountered during the surveys. Migratory shorebird species are also known to occur on intertidal flats of the project area. Land seismic surveys will be occurring over a very small area, including within mangroves that are not identified as habitat for migratory birds, and due to the non-intrusive nature of the land seismic surveys are considered unlikely to be impacted

Table 1 – Animals Potentially Encountered

Species ID	Scientific Name	Common Name	Class	Threatened Category	Migratory Status	Predicted Presence (PMST)	Observed Presence (Marine Ecological Surveys)	Updated Presence
68448	<i>Anoxypristis cuspidata</i>	Narrow Sawfish	Shark	-	Migratory	Likely	No.	Unlikely
87136	<i>Balaenoptera omurai</i>	Omura's Whale	Mammal	-	Migratory	Likely	No.	Unlikely
1763	<i>Caretta caretta</i>	Loggerhead Turtle	Reptile	Endangered	Migratory	Known	Potential – unconfirmed sea turtle species.	Potential
1765	<i>Chelonia mydas</i>	Green Turtle	Reptile	Vulnerable	Migratory	Known	Known	Known
1774	<i>Crocodylus porosus</i>	Salt-water Crocodile	Reptile	-	Migratory	Likely	Yes.	Potential
1768	<i>Dermochelys coriacea</i>	Leatherback Turtle	Reptile	Endangered	Migratory	Likely	Potential – unconfirmed sea turtle species.	Potential
28	<i>Dugong dugon</i>	Dugong	Mammal	-	Migratory	Known	Yes.	Known
1766	<i>Eretmochelys imbricata</i>	Hawksbill Turtle	Reptile	Vulnerable	Migratory	Known	Potential – unconfirmed sea turtle species.	Potential
1767	<i>Lepidochelys olivacea</i>	Olive Ridley Turtle	Reptile	Endangered	Migratory	Likely	Potential – unconfirmed sea turtle species.	Potential
38	<i>Megaptera novaeangliae</i>	Humpback Whale	Mammal	-	Migratory	Known	No.	Unlikely
90033	<i>Mobula alfredi</i>	Reef Manta Ray	Shark	-	Migratory (as <i>Manta alfredi</i> )	Likely	Potential – unconfirmed ray species.	Likely
90034	<i>Mobula birostris</i>	Giant Manta Ray	Shark	-	Migratory (as <i>Manta birostris</i> )	Likely	Potential – unconfirmed ray species.	Likely

Species ID	Scientific Name	Common Name	Class	Threatened Category	Migratory Status	Predicted Presence (PMST)	Observed Presence (Marine Ecological Surveys)	Updated Presence
59257	<i>Natator depressus</i>	Flatback Turtle	Reptile	Vulnerable	Migratory	Known	Known	Known
81322	<i>Orcaella heinsohni</i>	Australian Snubfin Dolphin	Mammal	Vulnerable	Migratory	Likely	No	Potential
46	<i>Orcinus orca</i>	Killer Whale	Mammal	-	Migratory	May	No.	Unlikely
68442	<i>Pristis zijsron</i>	Green Sawfish	Shark	Vulnerable	Migratory	Likely	No.	Potential
87942	<i>Sousa sahalensis</i>	Australian Humpback Dolphin	Mammal	Vulnerable	Migratory (as <i>Sousa chinensis</i> )	Known	No.	Potential
85267	<i>Sphyrna lewini</i>	Scalloped Hammerhead	Shark	Conservation Dependent	-	Likely	Potential – unconfirmed shark species.	Likely

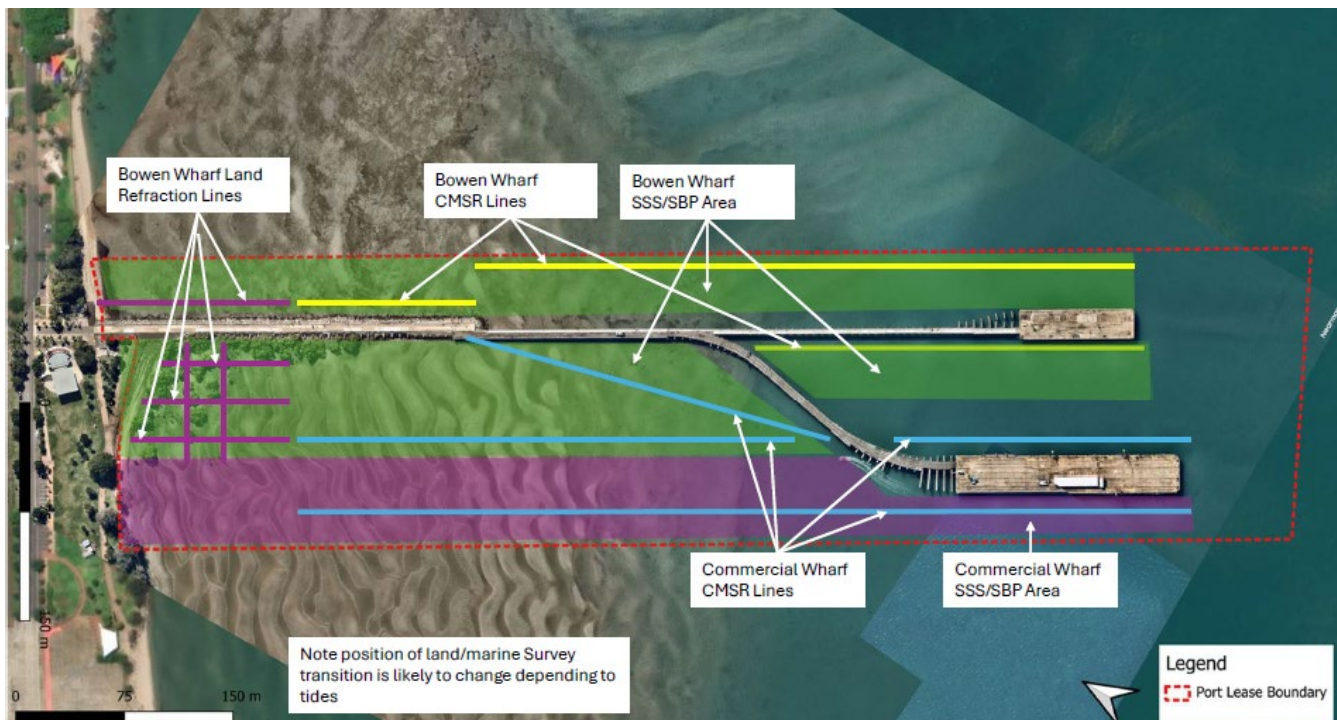
### 3 SCOPE OF WORKS

The vessel will be launched and retrieved daily from the Bowen Marina boat ramp with a 1km transit to the site. Vessel speeds during the surveys will be less than 3kts.

The proposed marine geophysical surveys will involve the use of active sonar systems to map seabed features and character, as well as subsurface geological structures, to assist in the engineering design of the proposed infrastructure. Side-scan sonar and sub-bottom profiling will be undertaken concurrently with the continuous marine seismic refraction, completed standalone.

The chosen methodologies are the industry-standard geophysical techniques for sub-surface investigations because they provide the required coverage and resolution to reliably characterise sediment thickness, competent founding layers and seabed morphology. No alternative techniques offer the same practical combination of non-intrusive, continuous marine acquisition with comparable subsurface penetration and seabed detail for this purpose

The expected duration of the marine survey program is 2 days with seismic data captured only during daylight hours and when visibility is very good, which is suitable for observing marine life. The intertidal onshore surveys are expected to take 2 days. Figure B below highlights the extent of the areas and lines to be completed by each survey technique.



**Figure B - Proposed Survey Areas and Lines**

A summary of the geophysical techniques and associated risks in the marine environment is provided in Table 2 below with schematics presented in Figure C to Figure E showing the general arrangement of survey equipment during the survey operations.

Table 2 - Summary of Geophysical Surveys and Associated Risk/Impacts on Environment

Geophysical Technique	Description	Equipment Specifications	Risks / Impacts on Environment
Sub-Bottom Profiling	The principle of this survey technique is similar to an echo sounder or depth sounder on a boat, used to monitor water depth for safe navigation. A sound pulse is generated by a submerged transducer, propagates through the water, and reflects off density interfaces, such as the water-seabed interface. The time it takes for this sound pulse to travel from the transducer to the receiver and back can be used to determine the water depth. Sub-bottom profiling uses much lower frequencies than an echo sounder and can detect density interfaces below the seabed, such as a bedrock surface buried beneath sediments. The sub-bottom profiling survey will involve towing a seismic transducer on a small catamaran and a hydrophone array behind a survey vessel at 2 knots over a series of predefined survey lines at each site, with the duration of these surveys expected to be in the order of 8 hours per day over the course of 1 day.	Applied Acoustics Sub-Bottom Profiling System operating at 200 Joules Source levels - 212dB re 1µPa at 1m Pulse Width - 180µs Dominant Frequency - 700-2500Hz	Low sound source levels and short duration of survey - Low
Side Scan Sonar	This survey technique uses high-frequency sound to map seabed surface, and is useful for mapping geomorphological variations and features such as seagrass and wrecks. An over-the-side-mounted transducer head traverses a series of predefined lines, and we expect the surveys to take approximately 10 hours over 1 day.	Multi-Phase Echo Sounder Edgetech 6205 Bathymetric and Side Scan Sonar Source Level - 200dB re 1µPa at 1m Dominant Frequency - 550kHz	Low sound source levels and short duration of survey - Low
Marine Seismic Refraction	This seismic technique uses the refraction of sound waves through the earth from a sound source and an array of receivers to map the distribution of subsurface seismic velocities. This technique is useful for mapping bedrock levels and providing information on material weathering and strength. The technique will involve towing a seismic airgun at or near the seabed at 1.5 knots along a predefined line at each site. An array of receivers (hydrophone array) will be towed behind this airgun, and these will detect the direct and refracted soundwaves generated from the airgun at regular intervals along the lines. The survey is expected to take approximately 4 hours over 1 day.	Sound Source Bolt 2800LX Long-life Airgun fitted with a 5 Cubic Inch Chamber/600psi Source Level - 220dB re 1µPa at 1m Pulse Width - 2.5 mS Dominant Frequency - 40Hz	Moderate sound levels and short duration of surveys - Medium
Land Seismic Refraction	This seismic technique is in principle the same as marine seismic refraction yet involves coupling a linear array of geophone receivers to the ground at fixed intervals and generating a soundwave by striking a sledgehammer on a HDPE plate on the ground. Multiple shotpoint locations are undertaken along the spread at regular intervals. The survey is expected to take approximately 8 hours over two days.	Sound Source Sledgehammer Source Level – 80dB peak at 1m Pulse Width – 20-40 mS Dominant Frequency - <10Hz	Low sound source levels and short duration of survey - Low

The Risks and Impacts are defined based on the following criteria:

### **Risk / Impacts**

Low: Low-intensity activity with brief, intermittent exposure and a localised footprint, unlikely to approach compliance limits at receptors and expected to cause only temporary disturbance.

Medium: Moderate-intensity and/or clearly detectable activity with repeated exposure and a broader footprint, where temporary behavioural disturbance is possible and mitigation is required to ensure compliance.

High: High-intensity and/or sustained activity with frequent repetition and a wide footprint, where exceedance of criteria or material disturbance is credible without strict controls and monitoring.

### **Survey duration**

Short: Time-limited to hours (not days), typically  $\leq 1$  day per site (or  $< \sim 8$ – $10$  hours active acquisition).

Medium: Conducted over  $\sim 1$ – $3$  days in the same area/site (including repeated daily activity).

Long: Conducted for  $> 3$  days in the same area/site or over multiple weeks (even if intermittent).

Turtles and Dugongs are deemed the most likely to be encountered at the site, and, as such, the impacts of survey methodology frequencies and overlap with these species groups have been further analysed. Findings are presented in Table 3

**Table 3 - Detailed Estimates of Impact on Turtles and Dugong**

Survey method (type)	Species group	Functional hearing/impact band (screening)	Frequency overlap	Expected response at the proposed survey ranges
CMSR (airgun, impulsive)  40 Hz; SL ~220 dB re 1 µPa @1 m; pulse ~2.5 ms; short runs.	Turtles	~100–800 Hz (impact focus 50–1,000 Hz)	Strong (LF airgun energy sits within turtle band)	Behavioral response possible at close ranges (startle/temporary avoidance). TTS* unlikely for small source/short duty cycle when animals are not very near the source.
	Dugong	LF surrogate (~40 Hz–5 kHz)	Strong	Behavioral response possible. TTS unlikely for small source/brief exposure and shallow-water decay.
SBP (boomer/chirp, impulsive/tonal)  0.7–2.5 kHz; SL ~212 dB; short pulses/tones; intermittent.	Turtles	~100–800 Hz (impact focus 50–1,000 Hz)	Partial (upper turtle band tails into 0.7–1 kHz)	Perception of behavioral at close range; TTS unlikely.
	Dugong	LF surrogate (~40 Hz–5 kHz)	Partial (falls within lower-mid of surrogate band)	Perception to behavioral near source. TTS unlikely given SPLs and duty cycle.

\*Temporary threshold shift

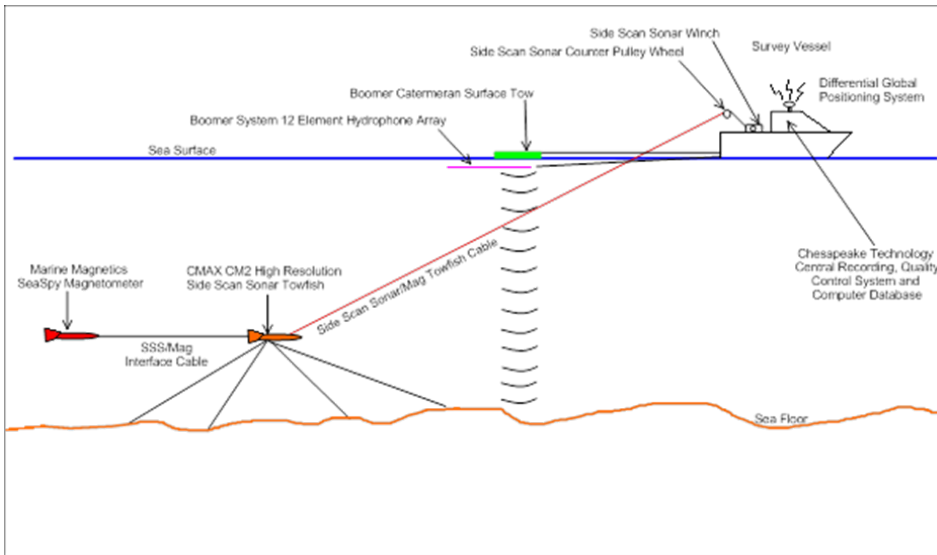


Figure C - Sub-Bottom Profiling/Side Scan Sonar/Magnetometer Survey Techniques Schematic

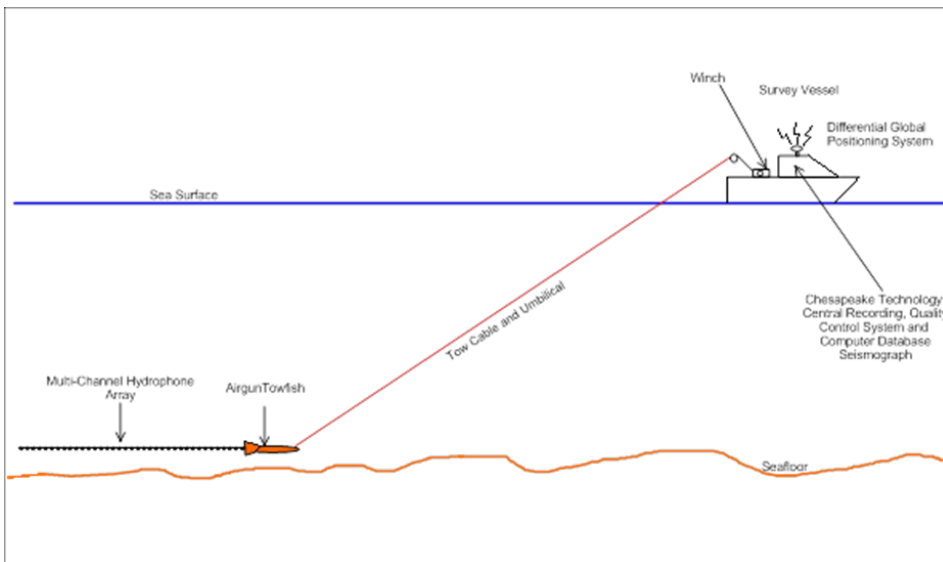


Figure D - Seismic Refraction Survey Technique Schematic

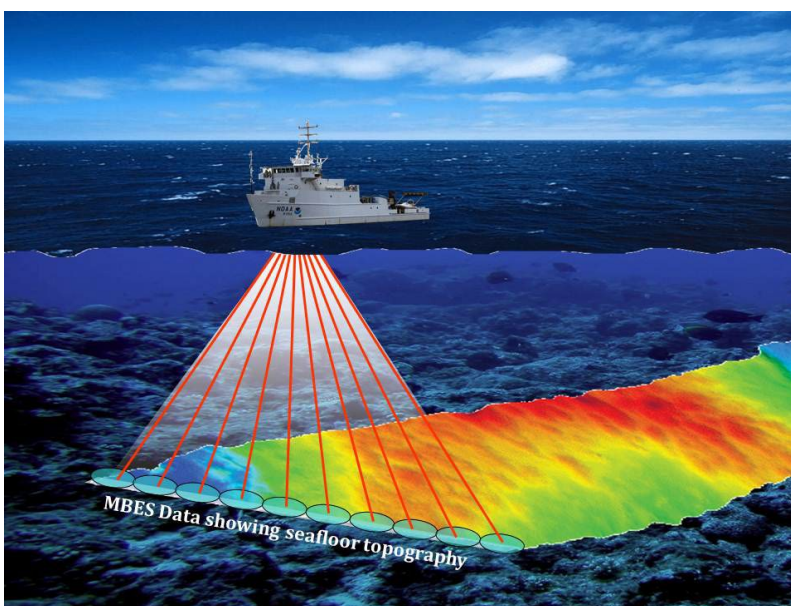


Figure E - Edgetech 6205 Side Scan Sonar Survey Technique Schematic

## 4 RISKS AND CONTROL MANAGEMENT

This applies when operating impulsive acoustic sources (e.g. airgun) for sub-bottom profiling and/or seismic refraction.

Non-impulsive geophysical equipment (e.g. side scan sonar) presents low risk; controls for these activities are limited to general navigation awareness, maintaining a dedicated lookout, and ceasing/altering operations if fauna shows obvious stress or there is an elevated risk of collision/interaction.

### 4.1 General operating constraints

- Impulsive acoustic source start-up will be undertaken in daylight hours only and only when visibility and sea state allow effective visual monitoring of the applicable mitigation zones.
- Where fog, heavy rain, glare or sea state prevents effective monitoring of the mitigation zones, start-up will be delayed and, if required, operations will be suspended until monitoring can be effectively undertaken.
- A dedicated Marine Fauna Observer will maintain a continuous 360° visual watch during all impulsive source operations. Sightings, behaviours, shut-downs, and re-start times will be recorded in the survey log.

### 4.2 Mitigation zones and triggers

#### A) Whales (EPBC Policy Statement 2.1 precaution zones)

For whales, the following precaution zones apply measured from the acoustic source:

- Observation Zone: 3km radius (and beyond where practicable/visible)\*
- Shut-down Zone: 500m radius

*\*Important clarification: The 3 km Observation Zone is used as an early-warning and monitoring zone for whales. Clearance is required for commencement only within Shut-down zones, not the entire 3 km zone.*

#### B) Dugongs and marine turtles (project-specific near-field shut-down zone)

Due to detectability limitations at kilometre-scale distances, dugongs and marine turtles will be managed through a near-field shut-down zone that can be reliably monitored from the vessel in daylight and suitable visibility:

- Dugong/Turtle Shut-down Zone: 100 m radius from the acoustic source

If a dugong or marine turtle is observed within, or likely to enter, the 100 m Shut-down Zone, the acoustic source will be shut down immediately (or start-up delayed).

### 4.3 Pre-start observations (prior to commencement of impulsive source operations)

- A minimum 30-minute pre-start visual observation period will be conducted immediately prior to initiation of any soft start.
- During the pre-start observation period, the observer will scan 360° around the vessel and the relevant area around the towed source, with:
  - whale scanning extending to the 3 km Observation Zone (and beyond where practicable) with particular focus on the Low Power and 500 m Shut-down zones; and
  - focused near-field scanning for dugongs/turtles within and adjacent to the 100 m Shut-down Zone.

- If any whale is sighted within the Low Power Zone or 500 m Shut-down Zone during pre-start observations, start-up will not commence until the whale is confirmed outside the Low Power Zone, or until the applicable clearance time has elapsed since the last sighting.
- If any dugong or turtle is sighted within 100 m during pre-start observations, start-up will not commence until the animal is confirmed outside 100 m, or until the applicable clearance time has elapsed since the last sighting.

#### **4.4 Soft start (ramp up)**

Does not apply as operations will be using smallest airgun chamber at minimum operating pressure.

#### **4.5 Power-down and shut-down (during operations)**

Whales:

- If a whale is sighted within or about to enter the 500 m Shut-down Zone, the acoustic source will be shut down immediately.

Dugongs and turtles:

- If a dugong or turtle is sighted within or about to enter the 100 m Shut-down Zone, the acoustic source will be shut down immediately.

#### **4.6 Re-start after shut-down**

- Whales: Re-start (no soft start) will only occur after the whale has been observed to move outside the 500m Shutdown Zone, or after at least 30 minutes has elapsed since the last whale sighting.
- Dugongs/turtles: Re-start (no soft start) will only occur after the animal has been observed outside the 100 m Shut-down Zone, or after a precautionary stand-down period of 30 minutes has elapsed since the last sighting.

#### **4.7 Record Keeping**

All marine fauna mitigation actions will be fully documented to enable audit and post-survey review. A dedicated Marine Fauna Observation and Mitigation Log will be maintained throughout operations and will record, as a minimum:

- Date/time of observations and actions (local time), and observer name/role
- Environmental conditions affecting detectability (visibility, sea state, glare, rain/fog, daylight)
- Species/ID (or best available description), number of animals, behaviour, and direction of travel
- Estimated distance and bearing from the source/vessel and the mitigation zone involved (e.g., 3 km/2 km/500 m/100 m)
- Operational response taken (delay to start, soft start commenced, power-down, shut-down, cease line, re-start) including start/stop times and reason
- Clearance/re-start basis (animal observed clear vs no-sighting clearance period)
- Supporting evidence where available (e.g., photos/video, GPS track, remarks)

In addition, a Source Activity Log will record key source parameters and events (e.g., start/end times, operating pressure/power settings, line start/finish, interruptions, faults). Records will be stored electronically with routine backup and will be retained and made available to the client/regulator in accordance with project and statutory requirements.

#### **4.8 Seasonal timing**

Survey timing is planned for April/May to avoid peak marine turtle nesting periods where relevant.

Specific controls to minimise impacts when undertaking the marine geophysical surveys are outlined in Table 4 below:

Table 4 - Mitigation and Management Measures

Impact	Mitigation and Management Measures	Risk Level
General detection and detectability limitations	<p>The crew is trained in the basics of marine megafauna identification.</p> <p>Vessel-based pre-clearance undertaken prior to the commencement or re-commencement of activities to confirm no marine megafauna are within the relevant proximity zones, including the use of drones where required.</p> <p>Surveys paused or postponed if detectability falls below a safe threshold (e.g., turbidity, glare, whitecaps, fog, rain).</p> <p>Operations are restricted to daylight only.</p>	Low
Seagrass and benthic habitat protection	<p>No anchoring over dense seagrass or coral patches.</p> <p>Seismic refraction surveys will be rerouted to avoid dense seagrass areas.</p>	Low
Tow-gear entanglement and vessel movement	<p>Maintain taut towlines.</p> <p>Maintain low-wake, slow-speed surveying.</p> <p>Predictable line patterns and minimal manoeuvring in shallow feeding areas.</p>	Low
Marine Seismic Refraction and Sub-Bottom Profiling	<p>Observation zone of 3km for 30 minutes (to ensure compliance with EPBC Policy Statement 2.1 for whales)</p> <p>Shut down zones to be observed:</p> <ul style="list-style-type: none"> <li>• 500m for whales</li> <li>• 100m for turtles and dugongs (site specific)</li> </ul>	Low
Land Seismic Refraction (LSR)	<p>LSR to use hand-placed geophones and hammer-plate, no excavation, no vegetation clearing.</p> <p>Avoid geophone placement in mangrove root zones.</p> <p>If nests are encountered, no movement of nests/birds/other fauna to occur without the presence of a licenced spotter catcher.</p>	Low
Shorebird disturbance	<p>Maintain vessel distance from intertidal feeding areas.</p> <p>No night lighting; daylight-only operations.</p>	Low
Spill and pollution management	<p>Spill kits on board; refuelling only at designated facilities.</p> <p>No transfer of fuel/chemicals over water.</p>	Low
Reporting and responsibilities	<p>Daily fauna observation, shutdown/power-down events logged.</p> <p>Adhere to incident reporting protocol.</p>	N/A

With the controls and mitigation measures in place, we have assessed that the proposed geophysical and bathymetric surveys will have minimal significant environmental impact at the site.

## 5 INCIDENT REPORTING

All Environmental Incidents and Near Misses shall be reported to the NQBP Project Manager as soon as practicable, no later than 24 hours after the event. A written report shall be provided to NQBP within 14 days of the event.

In addition to notifying NQBP, under the *Environmental Protection Act 1994* the Contractor will report pollution and contamination incidents to the Department of Environment, Tourism, Science and Innovation Pollution Hotline: 1300 130 372.

In the event that an incident occurs involving marine megafauna, the following will be undertaken:

- All works to stop immediately
- NQBP project manager to be notified as soon as practicable, but no later than 24 hours after
- Details of the incident to be recorded by the contractor, including the species involved and the type of incident
- NQBP to report details of the incident as required (dependent on incident)

## References

- Australian Government Department of the Environment and Energy . (2018, 5 11). *Species Profile and Threats Database*. Retrieved from EPBC Act List of Threatened Fauna: [http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna#mammals\\_extinct](http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna#mammals_extinct)
- Department of the Environment, Water Heritage and the Arts. (2008). Interaction between offshore seismic exploration and whales. In *EPBC Act Policy Statements 2.1*. Canberra: Australian Government.
- New Zealand Department of Conservation. (2012). *2012 Code of Conduct for Minimising Acoustic Disturbance to Marine Mammals for Seismic Survey Operations*. Wellington: Department of Conservation, PO Box 10420, Wellington 6143, New Zealand.
- Przeslawski, R. B. B. (2016). *Marine Seismic Survey Impacts on Fish and Invertebrates: Final Report for Gippsland Marine Environmental Monitoring Study*. Melbourne: Australian and New Zealand Standard Research Classification (ANZSRC).
- Queensland Parks and Wildlife Service. (2000, August). *Capricorn Coast National Park*. Retrieved from Management Plan: <https://www.npsr.qld.gov.au/managing/plans-strategies/pdf/capricorn-coast-national-park-2000.pdf>
- Sara J. Dolman, C. R. (2009). Comparative review of marine mammal guidance implemented during naval exercises . *Marine Pollution Bulletin* , 465-477.

**APPENDIX A – EPBC Act Protected Matters Report for Bowen Marine Infrastructure Replacement Project**

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Australian Government

Department of Climate Change, Energy,  
the Environment and Water

# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 03-Feb-2026

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

# Summary

## Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

<a href="#">World Heritage Properties:</a>	1
<a href="#">National Heritage Places:</a>	1
<a href="#">Wetlands of International Importance (Ramsar)</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	2
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	1
<a href="#">Listed Threatened Species:</a>	49
<a href="#">Listed Migratory Species:</a>	60

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

<a href="#">Commonwealth Lands:</a>	6
<a href="#">Commonwealth Heritage Places:</a>	1
<a href="#">Listed Marine Species:</a>	103
<a href="#">Whales and Other Cetaceans:</a>	13
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	None

## Extra Information

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	2
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">EPBC Act Referrals:</a>	10
<a href="#">Key Ecological Features (Marine):</a>	None
<a href="#">Biologically Important Areas:</a>	5
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None

# Details

## Matters of National Environmental Significance

### World Heritage Properties [\[ Resource Information \]](#)

Name	State	Legal Status	Buffer Status
<a href="#">Great Barrier Reef</a>	QLD	Declared property	In feature area

### National Heritage Places [\[ Resource Information \]](#)

Name	State	Legal Status	Buffer Status
Natural			
<a href="#">Great Barrier Reef</a>	QLD	Listed place	In feature area

### Great Barrier Reef Marine Park [\[ Resource Information \]](#)

Zone Type	Zone ID	IUCN	Buffer Status
General Use	GU-16-6004	VI	In buffer area only
Habitat Protection	HP-20-5186	VI	In buffer area only

### Listed Threatened Ecological Communities [\[ Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions</a>	Endangered	Community likely to occur within area	In feature area

### Listed Threatened Species [\[ Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
<a href="#">Erythrotriorchis radiatus</a> Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Falco hypoleucos</a> Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Fregatta grallaria grallaria</a> White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Geophaps scripta scripta</a> Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Limosa lapponica baueri</a> Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Neochmia ruficauda ruficauda</a> Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Poephila cincta cincta</a> Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Pterodroma neglecta neglecta</a> Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Sternula albifrons</a> Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Tyto novaehollandiae kimberli</a> Masked Owl (northern) [26048]	Vulnerable	Species or species habitat known to occur within area	In feature area
<b>MAMMAL</b>			
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Dasyurus hallucatus</a> Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Petauroides volans</a> Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</a> Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Sousa sahalensis</a> Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area	In feature area
<a href="#">Xeromys myoides</a> Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<b>PLANT</b>			
<a href="#">Dichanthium setosum</a> bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Eucalyptus raveretiana</a> Black Ironbox [16344]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Omphalea celata</a> [64586]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Phaius australis</a> Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Solanum graniticum</a> Granite Nightshade [84819]	Endangered	Species or species habitat may occur within area	In buffer area only

## REPTILE

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
<a href="#">Egernia rugosa</a> Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In feature area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area
<b>SHARK</b>			
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Pristis pristis</a> Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area	In feature area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Sphyrna lewini</a> Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species [ [Resource Information](#) ]

Scientific Name	Threatened Category	Presence Text	Buffer Status
null			
<a href="#">Balaenoptera omurai</a> Omura's Whale [87136]		Species or species habitat likely to occur within area	In feature area

Migratory Marine Birds

<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat known to occur within area	In feature area
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<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
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<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In feature area
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<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
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<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
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<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
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<a href="#">Phaethon rubricauda</a> Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area	In feature area
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<a href="#">Sternula albifrons</a> Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In feature area
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Migratory Marine Species

<a href="#">Anoxypristis cuspidata</a> Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area	In feature area
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Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Carcharhinus longimanus</a> Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
<a href="#">Carcharias taurus</a> Grey Nurse Shark [64469]		Species or species habitat may occur within area	In feature area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area	In feature area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In feature area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In feature area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely to occur within area	In feature area
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat likely to occur within area	In feature area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
<a href="#">Pristis pristis</a> Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area	In feature area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Sousa sahalensis as Sousa chinensis</a> Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area	In feature area

## Migratory Terrestrial Species

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Cuculus optatus</a> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area	In feature area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
<b>Migratory Wetlands Species</b>			
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area	In feature area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area	In feature area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area	In feature area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area	In feature area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In feature area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In feature area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area	In feature area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area	In feature area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
<a href="#">Tringa brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area	In feature area
<a href="#">Tringa incana</a> Wandering Tattler [831]		Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In feature area

## Other Matters Protected by the EPBC Act

### Commonwealth Lands [\[ Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
<b>Australian Postal Corporation</b> Lot 3 RP742488 [AGPR6991]	QLD	In feature area
<b>Department of Climate Change, Energy, the Environment and Water</b> Bowen Post Office [CHL_106124]	QLD	In feature area
<b>Department of Defence</b> AAFC 110 Squadron - Bowen [DD_0121]	QLD	In buffer area only
Lot 3 on RP727482 [AGPR2283]	QLD	In buffer area only
<b>Department of Home Affairs</b> Lot 17 on SP 187351 [AGPR6073]	QLD	In buffer area only
Lot 4 RP 855203 [AGPR6060]	QLD	In buffer area only

### Commonwealth Heritage Places [\[ Resource Information \]](#)

Name	State	Status	Buffer Status
<b>Historic</b> <a href="#">Bowen Post Office</a>	QLD	Listed place	In feature area

### Listed Marine Species [\[ Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text	Buffer Status
<b>Bird</b> <a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Anseranas semipalmata</a> Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Bubulcus ibis as Ardea ibis</a> Cattle Egret [66521]		Breeding likely to occur within area overfly marine area	In feature area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area	In feature area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In feature area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Chalcites osculans as Chrysococcyx osculans</a> Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
<a href="#">Charadrius ruficapillus</a> Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In feature area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In feature area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In feature area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In feature area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
<a href="#">Himantopus himantopus</a> Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area	In feature area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Monarcha melanopsis</a> Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In feature area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area	In feature area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
<a href="#">Phaethon rubricauda</a> Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area	In feature area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
<a href="#">Recurvirostra novaehollandiae</a> Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In feature area
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Sternula albifrons as Sterna albifrons</a> Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Symposiachrus trivirgatus as Monarcha trivirgatus</a> Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Tringa brevipes as Heteroscelus brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area	In feature area
<a href="#">Tringa incana as Heteroscelus incanus</a> Wandering Tattler [831]		Roosting known to occur within area	In feature area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In feature area
<b>Fish</b>			
<a href="#">Acentronura tentaculata</a> Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In feature area
<a href="#">Campichthys tryoni</a> Tryon's Pipefish [66193]		Species or species habitat may occur within area	In feature area
<a href="#">Choeroichthys brachysoma</a> Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area	In feature area
<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]		Species or species habitat may occur within area	In feature area
<a href="#">Corythoichthys amplexus</a> Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In feature area
<a href="#">Corythoichthys flavofasciatus</a> Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area	In feature area
<a href="#">Corythoichthys intestinalis</a> Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area	In feature area
<a href="#">Corythoichthys ocellatus</a> Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In feature area
<a href="#">Corythoichthys paxtoni</a> Paxton's Pipefish [66204]		Species or species habitat may occur within area	In feature area
<a href="#">Corythoichthys schultzi</a> Schultz's Pipefish [66205]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Cosmocampus darrosanus</a> D'Arros Pipefish [66207]		Species or species habitat may occur within area	In feature area
<a href="#">Doryrhamphus excisus</a> Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area	In feature area
<a href="#">Festucalex cinctus</a> Girdled Pipefish [66214]		Species or species habitat may occur within area	In feature area
<a href="#">Halicampus dunckeri</a> Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area	In feature area
<a href="#">Halicampus grayi</a> Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In feature area
<a href="#">Halicampus nitidus</a> Glittering Pipefish [66224]		Species or species habitat may occur within area	In feature area
<a href="#">Halicampus spinirostris</a> Spiny-snout Pipefish [66225]		Species or species habitat may occur within area	In feature area
<a href="#">Hippichthys cyanospilos</a> Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In feature area
<a href="#">Hippichthys heptagonus</a> Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In feature area
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In feature area
<a href="#">Hippocampus bargibanti</a> Pygmy Seahorse [66721]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In feature area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]		Species or species habitat may occur within area	In feature area
<a href="#">Hippocampus zebra</a> Zebra Seahorse [66241]		Species or species habitat may occur within area	In feature area
<a href="#">Micrognathus andersonii</a> Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area	In feature area
<a href="#">Micrognathus brevis</a> thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In feature area
<a href="#">Nannocampus pictus</a> Painted Pipefish, Reef Pipefish [66263]		Species or species habitat may occur within area	In feature area
<a href="#">Solegnathus hardwickii</a> Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In feature area
<a href="#">Solenostomus cyanopterus</a> Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In feature area
<a href="#">Solenostomus paradoxus</a> Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In feature area
<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area
<a href="#">Trachyrhamphus bicoarctatus</a> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Trachyrhamphus longirostris</a> Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area	In feature area
<b>Mammal</b>			
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area	In feature area
<b>Reptile</b>			
<a href="#">Aipysurus duboisii</a> Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area	In feature area
<a href="#">Aipysurus laevis</a> Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area	In feature area
<a href="#">Aipysurus mosaicus as Aipysurus eydouxii</a> Mosaic Sea Snake [87261]		Species or species habitat may occur within area	In feature area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Hydrophis elegans</a> Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Hydrophis hardwickii as Lapemis hardwickii</a> Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area	In feature area
<a href="#">Hydrophis kingii as Disteira kingii</a> Spectacled Sea Snake [93511]		Species or species habitat may occur within area	In feature area
<a href="#">Hydrophis macdowelli as Hydrophis mcdowelli</a> MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area	In feature area
<a href="#">Hydrophis major as Disteira major</a> Olive-headed Sea Snake [93512]		Species or species habitat may occur within area	In feature area
<a href="#">Hydrophis ornatus</a> Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area	In feature area
<a href="#">Hydrophis peronii as Acalyptophis peronii</a> Horned Sea Snake [93509]		Species or species habitat may occur within area	In feature area
<a href="#">Hydrophis platura as Pelamis platurus</a> Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area	In feature area
<a href="#">Hydrophis stokesii as Astrotia stokesii</a> Stokes' Sea Snake [93510]		Species or species habitat may occur within area	In feature area
<a href="#">Hydrophis zweifeli as Enhydrina schistosa</a> Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area	In feature area
<a href="#">Laticauda colubrina</a> Yellow-lipped Sea Krait [1092]		Species or species habitat may occur within area	In feature area
<a href="#">Laticauda laticaudata</a> a sea krait [1093]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In feature area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area

## Whales and Other Cetaceans [ [Resource Information](#) ]

Current Scientific Name	Status	Type of Presence	Buffer Status
<b>Mammal</b>			
<a href="#">Balaenoptera acutorostrata</a> Minke Whale [33]		Species or species habitat may occur within area	In feature area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Balaenoptera omurai</a> Omura's Whale [87136]		Species or species habitat likely to occur within area	In feature area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
<a href="#">Sousa sahalensis</a> Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area	In feature area
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In feature area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area

## Extra Information

### State and Territory Reserves [\[ Resource Information \]](#)

Protected Area Name	Reserve Type	State	Buffer Status
Edgecumbe Bay	Fish Habitat Area (B)	QLD	In buffer area only
Great Barrier Reef Coast	Marine Park	QLD	In buffer area only

### EPBC Act Referrals [\[ Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
<a href="#">Residential development- stage 2</a>	2004/1621		Completed	In buffer area only
<b>Controlled action</b>				
<a href="#">Bowen Solar Farm, Bruce Highway, Bowen QLD</a>	2017/8123	Controlled Action	Post-Approval	In buffer area only
<a href="#">Bowen Waste Water Treatment Facility</a>	2010/5726	Controlled Action	Completed	In feature area
<a href="#">Expansion of Bowen Marina, Lot 310 on SP143899</a>	2006/2602	Controlled Action	Post-Approval	In feature area
<a href="#">Whitsunday Shores Estate residential subdivision, golf course, facilities &amp; i...</a>	2005/2195	Controlled Action	Post-Approval	In buffer area only

### Not controlled action

<a href="#">Abbot Point to Bogie River Rail Upgrade (GAP 50) Project</a>	2010/5482	Not Controlled Action	Completed	In buffer area only
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Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
<b>Not controlled action</b>				
<a href="#">demolition and re-development of the Horseshoe Bay Caravan Park site</a>	2006/2530	Not Controlled Action	Completed	In buffer area only
<a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>	2015/7522	Not Controlled Action	Completed	In feature area
<a href="#">Resort and Residential Development, Horseshoe Bay Road</a>	2009/4726	Not Controlled Action	Completed	In buffer area only
<b>Not controlled action (particular manner)</b>				
<a href="#">Addition Cyclone Mooring within the Port Limits</a>	2011/6177	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

## Biologically Important Areas [ [Resource Information](#) ]

Scientific Name	Behaviour	Presence	Buffer Status
<b>Dolphins</b>			
<a href="#">Sousa chinensis</a>			
Indo-Pacific Humpback Dolphin [50]	Breeding	Known to occur	In feature area
<a href="#">Tursiops aduncus</a>			
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In feature area
<b>Marine Turtles</b>			
<a href="#">Natator depressus</a>			
Flatback Turtle [59257]	Nesting	Known to occur	In feature area
<b>Seabirds</b>			
<a href="#">Sterna sumatrana</a>			
Black-naped Tern [800]	Breeding	Known to occur	In buffer area only
<b>Whales</b>			
<a href="#">Megaptera novaeangliae</a>			
Humpback Whale [38]	Breeding and calving	Known to occur	In feature area

# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

## 3 DATA SOURCES

### Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

### Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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