

## **APPENDIX 1**

### **EPBC Act Protected Matters Search Tool Results and Wildlife Online Database Search Results for Toondah Harbour PDA**



# 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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 13/03/17 11:49:57

## [Summary](#)

### [Details](#)

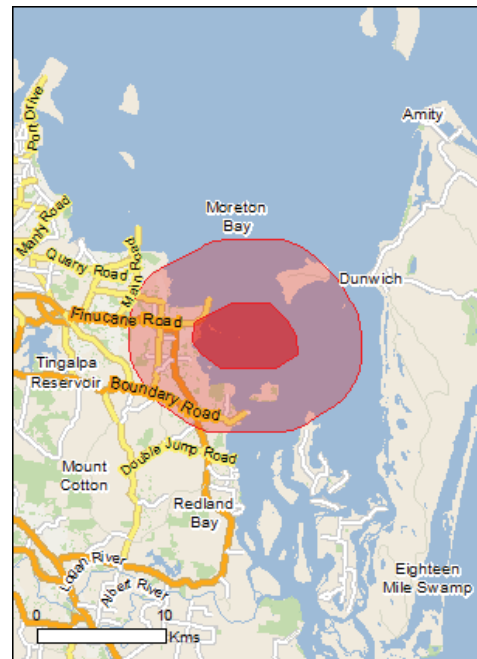
[Matters of NES](#)

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

[Extra Information](#)

### [Caveat](#)

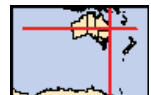
### [Acknowledgements](#)



This map may contain data which are  
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### [Coordinates](#)

Buffer: 5.0Km



# Summary

## Matters of National Environmental 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>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance:</a>	1
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	3
<a href="#">Listed Threatened Species:</a>	68
<a href="#">Listed Migratory Species:</a>	72

## 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 <http://www.environment.gov.au/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 Land:</a>	None
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	111
<a href="#">Whales and Other Cetaceans:</a>	14
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Commonwealth Reserves Marine:</a>	None

## Extra Information

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

<a href="#">State and Territory Reserves:</a>	5
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	42
<a href="#">Nationally Important Wetlands:</a>	1
<a href="#">Key Ecological Features (Marine)</a>	None

# Details

## Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)		[ Resource Information ]
Name		Proximity
<a href="#">Moreton bay</a>		Within Ramsar site

## 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.

Name	Status	Type of Presence
<a href="#">Littoral Rainforest and Coastal Vine Thickets of Eastern Australia</a>	Critically Endangered	Community likely to occur within area
<a href="#">Lowland Rainforest of Subtropical Australia</a>	Critically Endangered	Community may occur within area
<a href="#">Subtropical and Temperate Coastal Saltmarsh</a>	Vulnerable	Community likely to occur within area

## Listed Threatened Species [ Resource Information ]

Name	Status	Type of Presence
Birds		
<a href="#">Anthochaera phrygia</a>		
Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Botaurus poiciloptilus</a>		
Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris canutus</a>		
Red Knot, Knot [855]	Endangered	Roosting known to occur within area
<a href="#">Calidris ferruginea</a>		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris tenuirostris</a>		
Great Knot [862]	Critically Endangered	Roosting known to occur within area
<a href="#">Charadrius leschenaultii</a>		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius mongolus</a>		
Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Cyclopsitta diophthalma coxeni</a>		
Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area
<a href="#">Dasyornis brachypterus</a>		
Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
<a href="#">Diomedea antipodensis</a>		
Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
<a href="#">Diomedea antipodensis gibsoni</a> Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
<a href="#">Erythroriorchis radiatus</a> Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Fregetta 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
<a href="#">Geophaps scripta scripta</a> Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
<a href="#">Lathamus discolor</a> Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Limosa lapponica baueri</a> Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Limosa lapponica menzbieri</a> Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Pachyptila turtur subantarctica</a> Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Poephila cincta cincta</a> Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
<a href="#">Pterodroma neglecta neglecta</a> Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
<a href="#">Thalassarche cauta cauta</a> Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche cauta steadi</a> White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche eremita</a> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche salvini</a> Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
<a href="#">Turnix melanogaster</a> Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Fish		
<a href="#">Epinephelus daemeli</a> Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area
Insects		
<a href="#">Phyllodes imperialis smithersi</a> Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area
Mammals		
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area
<a href="#">Chalinolobus dwyeri</a> Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
<a href="#">Dasyurus hallucatus</a> Northern Quoll, Digul [331]	Endangered	Species or species habitat may occur within area
<a href="#">Dasyurus maculatus maculatus (SE mainland population)</a> Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Petauroides volans</a> Greater Glider [254]	Vulnerable	Species or species habitat may occur within 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]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pteropus poliocephalus</a> Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
<a href="#">Xeromys myoides</a> Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
Plants		
<a href="#">Arthraxon hispidus</a> Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
<a href="#">Baloghia marmorata</a> Marbled Baloghia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area
<a href="#">Bosistoa transversa</a> Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Corchorus cunninghamii</a> Native Jute [14659]	Endangered	Species or species habitat likely to occur within area
<a href="#">Cryptocarya foetida</a> Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Cryptostylis hunteriana</a> Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
<a href="#">Macadamia integrifolia</a> Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Macadamia tetraphylla</a> Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Phaius australis</a> Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
<a href="#">Phaius bernaysii</a> Yellow Swamp-orchid [4918]	Endangered	Species or species habitat may occur within area
<a href="#">Samadera bidwillii</a> Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Thesium australe</a> Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Delma torquata</a> Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Name	Status	Type of Presence
<a href="#">Saiphos reticulatus</a> Three-toed Snake-tooth Skink [88328]	Vulnerable	Species or species habitat may occur within area

#### Sharks

<a href="#">Carcharias taurus (east coast population)</a> Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

#### Listed Migratory Species [ Resource Information ]

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
<b>Migratory Marine Birds</b>		
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat likely to occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Puffinus carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
<a href="#">Sterna albifrons</a> Little Tern [813]		Species or species habitat may occur within area
<a href="#">Thalassarche cauta</a> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area



Name	Threatened	Type of Presence
<b>Migratory Marine Species</b>		
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Lagenorhynchus obscurus</a> Dusky Dolphin [43]		Species or species habitat may occur within area
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area
<a href="#">Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
<a href="#">Manta birostris</a> Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Orcaella brevirostris</a> Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
<a href="#">Sousa chinensis</a> Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
<b>Migratory Terrestrial Species</b>		
<a href="#">Cuculus optatus</a> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]		Species or species habitat known to occur within area
<a href="#">Monarcha melanopsis</a> Black-faced Monarch [609]		Species or species habitat known to occur within area
<a href="#">Monarcha trivirgatus</a> Spectacled Monarch [610]		Species or species habitat likely to occur within area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat known to occur within area
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat known to occur within area
<b>Migratory Wetlands Species</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Roosting known to occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]		Roosting known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Roosting known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Roosting known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Roosting known to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Critically Endangered	Roosting known to occur within area
<a href="#">Charadrius bicinctus</a> Double-banded Plover [895]		Roosting known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur

Name	Threatened	Type of Presence
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		within area  Roosting known to occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area
<a href="#">Heteroscelus brevipes</a> Grey-tailed Tattler [59311]		Roosting known to occur within area
<a href="#">Heteroscelus incanus</a> Wandering Tattler [59547]		Roosting known to occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area
<a href="#">Limnodromus semipalmatus</a> Asian Dowitcher [843]		Roosting known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]		Roosting known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Philomachus pugnax</a> Ruff (Reeve) [850]		Roosting known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]		Roosting known to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]		Roosting known to occur within area

## Other Matters Protected by the EPBC Act

Listed Marine Species		[ Resource Information ]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
<b>Birds</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Roosting known to occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat likely to occur within area
<a href="#">Anseranas semipalmata</a> Magpie Goose [978]		Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea alba</a> Great Egret, White Egret [59541]		Breeding known to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Species or species habitat may occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]		Roosting known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Roosting known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Roosting known to occur within area
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<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Critically Endangered	Roosting known to occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat may occur within area
<a href="#">Charadrius bicinctus</a> Double-banded Plover [895]		Roosting known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Charadrius ruficapillus</a> Red-capped Plover [881]		Roosting known to occur

Name	Threatened	Type of Presence
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		within area  Roosting known to occur within area
<a href="#">Cuculus saturatus</a> Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat known to occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea gibsoni</a> Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
<a href="#">Heteroscelus brevipes</a> Grey-tailed Tattler [59311]		Roosting known to occur within area
<a href="#">Heteroscelus incanus</a> Wandering Tattler [59547]		Roosting known to occur within area
<a href="#">Himantopus himantopus</a> Black-winged Stilt [870]		Roosting known to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]		Species or species habitat known to occur within area
<a href="#">Lathamus discolor</a> Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area
<a href="#">Limnodromus semipalmatus</a> Asian Dowitcher [843]		Roosting known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]		Roosting known to occur within area

Name	Threatened	Type of Presence
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Monarcha melanopsis</a> Black-faced Monarch [609]		Species or species habitat known to occur within area
<a href="#">Monarcha trivirgatus</a> Spectacled Monarch [610]		Species or species habitat likely to occur within area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area
<a href="#">Pachyptila turtur</a> Fairy Prion [1066]		Species or species habitat known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Philomachus pugnax</a> Ruff (Reeve) [850]		Roosting known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]		Roosting known to occur within area
<a href="#">Puffinus carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
<a href="#">Recurvirostra novaehollandiae</a> Red-necked Avocet [871]		Roosting known to occur within area
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat known to occur within area
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
<a href="#">Sterna albifrons</a> Little Tern [813]		Species or species habitat may occur within area
<a href="#">Thalassarche cauta</a> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area

Name	Threatened	Type of Presence
<a href="#">Thalassarche eremita</a> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche salvini</a> Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]		Roosting known to occur within area
Fish		
<a href="#">Acentronura tentaculata</a> Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
<a href="#">Campichthys tryoni</a> Tryon's Pipefish [66193]		Species or species habitat may occur within area
<a href="#">Corythoichthys amplexus</a> Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
<a href="#">Corythoichthys ocellatus</a> Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area
<a href="#">Festucalex cinctus</a> Girdled Pipefish [66214]		Species or species habitat may occur within area
<a href="#">Filicampus tigris</a> Tiger Pipefish [66217]		Species or species habitat may occur within area
<a href="#">Halicampus grayi</a> Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
<a href="#">Hippichthys cyanospilos</a> Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
<a href="#">Hippichthys heptagonus</a> Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
<a href="#">Hippocampus kelloggi</a> Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]		Species or species habitat may occur within area
<a href="#">Hippocampus trimaculatus</a> Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
<a href="#">Hippocampus whitei</a> White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat may occur within area
<a href="#">Lissocampus runa</a> Javelin Pipefish [66251]		Species or species habitat may occur within area
<a href="#">Maroubra perserrata</a> Sawtooth Pipefish [66252]		Species or species habitat may occur within area
<a href="#">Micrognathus andersonii</a> Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area
<a href="#">Micrognathus brevirostris</a> thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
<a href="#">Microphis manadensis</a> Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area
<a href="#">Solegnathus dunckeri</a> Duncker's Pipehorse [66271]		Species or species habitat may occur within area
<a href="#">Solegnathus hardwickii</a> Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
<a href="#">Solegnathus spinosissimus</a> Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
<a href="#">Solenostomus cyanopterus</a> Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
<a href="#">Solenostomus paegnius</a> Rough-snout Ghost Pipefish [68425]		Species or species habitat may occur within area
<a href="#">Solenostomus paradoxus</a> Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
<a href="#">Stigmatopora nigra</a> Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area



Name	Threatened	Type of Presence
<a href="#">Trachyrhamphus bicoarctatus</a> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
<a href="#">Urocampus carinirostris</a> Hairy Pipefish [66282]		Species or species habitat may occur within area
<a href="#">Vanacampus margaritifer</a> Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area

#### Mammals

<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area
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#### Reptiles

<a href="#">Aipysurus laevis</a> Olive Seasnake [1120]		Species or species habitat may occur within area
<a href="#">Astrotia stokesii</a> Stokes' Seasnake [1122]		Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Hydrophis elegans</a> Elegant Seasnake [1104]		Species or species habitat may occur within area
<a href="#">Laticauda laticaudata</a> a sea krait [1093]		Species or species habitat may occur within area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Pelamis platurus</a> Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

#### Whales and other Cetaceans

Name	Status	Type of Presence
<b>[ Resource Information ]</b>		
<b>Mammals</b>		
<a href="#">Balaenoptera acutorostrata</a> Minke Whale [33]		Species or species habitat may occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area

Name	Status	Type of Presence
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat may occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Lagenorhynchus obscurus</a> Dusky Dolphin [43]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Orcaella brevirostris</a> Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Sousa chinensis</a> Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]		Species or species habitat may occur within area

## Extra Information

State and Territory Reserves	[ Resource Information ]
Name	State
Bird Island	QLD
Dawson Road	QLD
Goat Island	QLD
Teerk Roo Ra	QLD
Teerk Roo Ra	QLD

## Invasive Species

## [ Resource Information ]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
<b>Birds</b>		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
<b>Frogs</b>		
Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area
<b>Mammals</b>		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur

Name	Status	Type of Presence
Rattus rattus Black Rat, Ship Rat [84]		within area  Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
<b>Plants</b>		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Annona glabra Pond Apple, Pond-apple Tree, Alligator Apple, Bullock's Heart, Cherimoya, Monkey Apple, Bobwood, Corkwood [6311]		Species or species habitat may occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species

Name	Status	Type of Presence
Protasparagus densiflorus Asparagus Fern, Plume Asparagus [5015]		habitat likely to occur within area  Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area

#### Reptiles

Hemidactylus frenatus Asian House Gecko [1708]	Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]	Species or species habitat likely to occur within area

Nationally Important Wetlands	[ Resource Information ]
Name	State
<a href="#">Moreton Bay</a>	QLD

# Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

## Coordinates

-27.525453 153.279669,-27.513806 153.305075,-27.513502 153.332455,-27.52355 153.344042,-27.533597 153.351166,-27.544784 153.351338,-27.553688 153.33606,-27.553764 153.29778,-27.544936 153.284133,-27.537554 153.278468,-27.525833 153.279326,-27.525453 153.279669

# 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](#)
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- [-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.

## **APPENDIX 2**

### **Queensland Government database search results**





## Wildlife Online Extract

Search Criteria: Species List for a Specified Point

Species: All

Type: All

Status: All

Records: All

Date: Since 1980

Latitude: -27.528

Longitude: 153.2843

Distance: 1

Email: penn@baamecology.com

Date submitted: Thursday 09 Mar 2017 15:41:18

Date extracted: Thursday 09 Mar 2017 15:50:02

The number of records retrieved = 144

### **Disclaimer**

As the DSITIA is still in a process of collating and vetting data, it is possible the information given is not complete. The information provided should only be used for the project for which it was requested and it should be appropriately acknowledged as being derived from Wildlife Online when it is used.

The State of Queensland does not invite reliance upon, nor accept responsibility for this information. Persons should satisfy themselves through independent means as to the accuracy and completeness of this information.

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Acanthizidae	<i>Gerygone levigaster</i>	mangrove gerygone		C		6
animals	birds	Accipitridae	<i>Elanus axillaris</i>	black-shouldered kite		C		1
animals	birds	Accipitridae	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle		C		8
animals	birds	Accipitridae	<i>Pandion cristatus</i>	eastern osprey		SL		10
animals	birds	Accipitridae	<i>Aviceda subcristata</i>	Pacific baza		C		4
animals	birds	Accipitridae	<i>Accipiter fasciatus</i>	brown goshawk		C		1
animals	birds	Accipitridae	<i>Lophoictinia isura</i>	square-tailed kite		C		1
animals	birds	Accipitridae	<i>Haliastur indus</i>	brahmyny kite		C		39
animals	birds	Accipitridae	<i>Haliastur sphenurus</i>	whistling kite		C		15
animals	birds	Anatidae	<i>Anas superciliosa</i>	Pacific black duck		C		1
animals	birds	Anatidae	<i>Cygnus atratus</i>	black swan		C		11
animals	birds	Anatidae	<i>Anas castanea</i>	chestnut teal		C		10
animals	birds	Anatidae	<i>Anas gracilis</i>	grey teal		C		2
animals	birds	Anhingidae	<i>Anhinga novaehollandiae</i>	Australasian darter		C		12
animals	birds	Anseranatidae	<i>Anseranas semipalmata</i>	magpie goose		C		1
animals	birds	Ardeidae	<i>Ardea alba modesta</i>	eastern great egret		C		66
animals	birds	Ardeidae	<i>Egretta sacra</i>	eastern reef egret		C		8
animals	birds	Ardeidae	<i>Ardea intermedia</i>	intermediate egret		C		23
animals	birds	Ardeidae	<i>Egretta novaehollandiae</i>	white-faced heron		C		124
animals	birds	Ardeidae	<i>Nycticorax caledonicus</i>	nankeen night-heron		C		1
animals	birds	Ardeidae	<i>Butorides striata</i>	striated heron		C		13
animals	birds	Ardeidae	<i>Egretta garzetta</i>	little egret		C		47
animals	birds	Artamidae	<i>Cracticus nigrogularis</i>	pied butcherbird		C		3
animals	birds	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird		C		1
animals	birds	Artamidae	<i>Cracticus tibicen</i>	Australian magpie		C		6
animals	birds	Burhinidae	<i>Esacus magnirostris</i>	beach stone-curlew		V		1
animals	birds	Burhinidae	<i>Burhinus grallarius</i>	bush stone-curlew		C		6
animals	birds	Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo		C		1
animals	birds	Cacatuidae	<i>Eolophus roseicapilla</i>	galah		C		1
animals	birds	Cacatuidae	<i>Calyptorhynchus lathami lathami</i>	glossy black-cockatoo (eastern)		V		2
animals	birds	Campephagidae	<i>Coracina tenuirostris</i>	cicadabird		C		1
animals	birds	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike		C		3
animals	birds	Charadriidae	<i>Vanellus miles</i>	masked lapwing		C		100
animals	birds	Charadriidae	<i>Vanellus miles novaehollandiae</i>	masked lapwing (southern subspecies)		C		7
animals	birds	Charadriidae	<i>Charadrius leschenaultii</i>	greater sand plover		SL	V	2
animals	birds	Charadriidae	<i>Charadrius ruficapillus</i>	red-capped plover		C		8
animals	birds	Charadriidae	<i>Erythrogonyx cinctus</i>	red-kneed dotterel		C		1
animals	birds	Charadriidae	<i>Charadrius bicinctus</i>	double-banded plover		SL		6
animals	birds	Charadriidae	<i>Charadrius mongolus</i>	lesser sand plover		SL	E	8
animals	birds	Charadriidae	<i>Pluvialis fulva</i>	Pacific golden plover		SL		4
animals	birds	Cisticolidae	<i>Cisticola exilis</i>	golden-headed cisticola		C		2
animals	birds	Columbidae	<i>Streptopelia chinensis</i>	spotted dove	Y			4
animals	birds	Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove		C		1
animals	birds	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon		C		2
animals	birds	Columbidae	<i>Geopelia striata</i>	peaceful dove		C		2
animals	birds	Coraciidae	<i>Eurystomus orientalis</i>	dollarbird		C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Corvidae	<i>Corvus orru</i>	Torresian crow		C		7
animals	birds	Cuculidae	<i>Eudynamys orientalis</i>	eastern koel		C		5
animals	birds	Falconidae	<i>Falco peregrinus</i>	peregrine falcon		C		2
animals	birds	Falconidae	<i>Falco longipennis</i>	Australian hobby		C		1
animals	birds	Falconidae	<i>Falco cenchroides</i>	nankeen kestrel		C		1
animals	birds	Haematopodidae	<i>Haematopus longirostris</i>	Australian pied oystercatcher		C		131
animals	birds	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher		C		2
animals	birds	Halcyonidae	<i>Todiramphus sordidus</i>	Torresian kingfisher		C		3
animals	birds	Halcyonidae	<i>Dacelo novaeguineae</i>	laughing kookaburra		C		1
animals	birds	Halcyonidae	<i>Todiramphus macleayii</i>	forest kingfisher		C		1
animals	birds	Hirundinidae	<i>Petrochelidon ariel</i>	fairy martin		C		1
animals	birds	Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow		C		6
animals	birds	Laridae	<i>Sterna hirundo</i>	common tern		SL		3
animals	birds	Laridae	<i>Larus dominicanus</i>	kelp gull		C		1
animals	birds	Laridae	<i>Thalasseus bergii</i>	crested tern		SL		14
animals	birds	Laridae	<i>Hydroprogne caspia</i>	Caspian tern		SL		88
animals	birds	Laridae	<i>Chroicocephalus novaehollandiae</i>	silver gull		C		60
animals	birds	Laridae	<i>Gelochelidon nilotica</i>	gull-billed tern		SL		78
animals	birds	Laridae	<i>Chlidonias leucopterus</i>	white-winged black tern		SL		1
animals	birds	Laridae	<i>Thalasseus bengalensis</i>	lesser crested tern		C		2
animals	birds	Laridae	<i>Sternula albifrons</i>	little tern		SL		5
animals	birds	Meliphagidae	<i>Melithreptus lunatus</i>	white-naped honeyeater		C		1
animals	birds	Meliphagidae	<i>Plectorhyncha lanceolata</i>	striped honeyeater		C		1
animals	birds	Meliphagidae	<i>Gavicalis fasciogularis</i>	mangrove honeyeater		C		15
animals	birds	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater		C		1
animals	birds	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater		C		9
animals	birds	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner		C		7
animals	birds	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark		C		4
animals	birds	Monarchidae	<i>Myiagra rubecula</i>	leaden flycatcher		C		2
animals	birds	Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian pipit		C		2
animals	birds	Nectariniidae	<i>Dicaeum hirundinaceum</i>	mistletoebird		C		3
animals	birds	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird		C		1
animals	birds	Pachycephalidae	<i>Colluricincla harmonica</i>	grey shrike-thrush		C		1
animals	birds	Passeridae	<i>Passer domesticus</i>	house sparrow	Y			5
animals	birds	Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian pelican		C		25
animals	birds	Phalacrocoracidae	<i>Phalacrocorax varius</i>	pied cormorant		C		10
animals	birds	Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	little pied cormorant		C		21
animals	birds	Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	little black cormorant		C		4
animals	birds	Phalacrocoracidae	<i>Phalacrocorax carbo</i>	great cormorant		C		1
animals	birds	Phasianidae	<i>Coturnix ypsilophora</i>	brown quail		C		2
animals	birds	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth		C		2
animals	birds	Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella		C		2
animals	birds	Psittacidae	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet		C		4
animals	birds	Psittacidae	<i>Platycercus eximius</i>	eastern rosella		C		1
animals	birds	Recurvirostridae	<i>Himantopus himantopus</i>	black-winged stilt		C		110
animals	birds	Recurvirostridae	<i>Recurvirostra novaehollandiae</i>	red-necked avocet		C		3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail		C		2
animals	birds	Scolopacidae	<i>Calidris alba</i>	sanderling		SL		1
animals	birds	Scolopacidae	<i>Calidris canutus</i>	red knot		SL	E	8
animals	birds	Scolopacidae	<i>Tringa nebularia</i>	common greenshank		SL		8
animals	birds	Scolopacidae	<i>Numenius phaeopus</i>	whimbrel		SL		159
animals	birds	Scolopacidae	<i>Actitis hypoleucos</i>	common sandpiper		SL		1
animals	birds	Scolopacidae	<i>Arenaria interpres</i>	ruddy turnstone		SL		16
animals	birds	Scolopacidae	<i>Calidris acuminata</i>	sharp-tailed sandpiper		SL		5
animals	birds	Scolopacidae	<i>Tringa stagnatilis</i>	marsh sandpiper		SL		1
animals	birds	Scolopacidae	<i>Calidris ferruginea</i>	curlew sandpiper		SL	CE	12
animals	birds	Scolopacidae	<i>Calidris ruficollis</i>	red-necked stint		SL		10
animals	birds	Scolopacidae	<i>Calidris tenuirostris</i>	great knot		SL	CE	33
animals	birds	Scolopacidae	<i>Limosa lapponica baueri</i>	Western Alaskan bar-tailed godwit		SL	V	219
animals	birds	Scolopacidae	<i>Numenius madagascariensis</i>	eastern curlew		V	CE	180
animals	birds	Scolopacidae	<i>Limosa limosa</i>	black-tailed godwit		SL		12
animals	birds	Scolopacidae	<i>Xenus cinereus</i>	terek sandpiper		SL		22
animals	birds	Scolopacidae	<i>Tringa brevipes</i>	grey-tailed tattler		SL		54
animals	birds	Strigidae	<i>Ninox boobook</i>	southern boobook		C		2
animals	birds	Sturnidae	<i>Acridotheres tristis</i>	common myna	Y			1
animals	birds	Sturnidae	<i>Sturnus vulgaris</i>	common starling	Y			3
animals	birds	Threskiornithidae	<i>Threskiornis molucca</i>	Australian white ibis		C		139
animals	birds	Threskiornithidae	<i>Threskiornis spinicollis</i>	straw-necked ibis		C		4
animals	birds	Threskiornithidae	<i>Platalea flavipes</i>	yellow-billed spoonbill		C		1
animals	birds	Threskiornithidae	<i>Platalea regia</i>	royal spoonbill		C		19
animals	birds	Tytonidae	<i>Tyto delicatula</i>	eastern barn owl		C		2
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		V	V	420
animals	reptiles	Boidae	<i>Morelia spilota</i>	carpet python		C		2
animals	reptiles	Scincidae	<i>Lampropholis delicata</i>	dark-flecked garden sunskink		C		1
animals	uncertain	Indeterminate	<i>Indeterminate</i>	Unknown or Code Pending		C		7
fungi	club fungi	Basidiomycota	<i>Byssomerulius corium</i>			C		1/1
fungi	sac fungi	Ramalinaceae	<i>Ramalina confirmata</i>			C		1/1
plants	higher dicots	Brassicaceae	<i>Brassica x juncea</i>	Indian mustard	Y			1/1
plants	higher dicots	Rubiaceae	<i>Gynochthodes jasminoides</i>			C		1/1
protists	brown algae	Phaeophyceae	<i>Padina australis</i>			C		1/1
protists	brown algae	Phaeophyceae	<i>Bachelotia antillarum</i>			C		1/1
protists	brown algae	Phaeophyceae	<i>Lobophora variegata</i>			C		2/2
protists	brown algae	Phaeophyceae	<i>Sporochnus comosus</i>			C		1/1
protists	brown algae	Phaeophyceae	<i>Petalonia fascia</i>			C		1/1
protists	brown algae	Phaeophyceae	<i>Spatoglossum macrodontum</i>			C		1/1
protists	brown algae	Phaeophyceae	<i>Stypopodium flabelliforme</i>			C		1/1
protists	brown algae	Phaeophyceae	<i>Hydroclathrus clathratus</i>			C		1/1
protists	green algae	Chlorophyceae	<i>Cladophora</i>			C		1/1
protists	green algae	Chlorophyceae	<i>Chaetomorpha</i>			C		1/1
protists	red algae	Rhodophyceae	<i>Gracilaria verrucosa</i>			C		1/1
protists	red algae	Rhodophyceae	<i>Gracilaria foliifera</i>			C		1/1
protists	red algae	Rhodophyceae	<i>Gracilaria compressa</i>			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
protists	red algae	Rhodophyceae	<i>Hypnea spinella</i>			C		1/1
protists	red algae	Rhodophyceae	<i>Tolypiocladia glomerulata</i>			C		1/1
protists	red algae	Rhodophyceae	<i>Herposiphonia</i>			C		1/1
protists	red algae	Rhodophyceae	<i>Laurencia</i>			C		1/1
protists	red algae	Rhodophyceae	<i>Gracilaria cylindrica</i>			C		1/1
protists	red algae	Rhodophyceae	<i>Dasya iyengarii</i>			C		1/1

#### CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*. The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

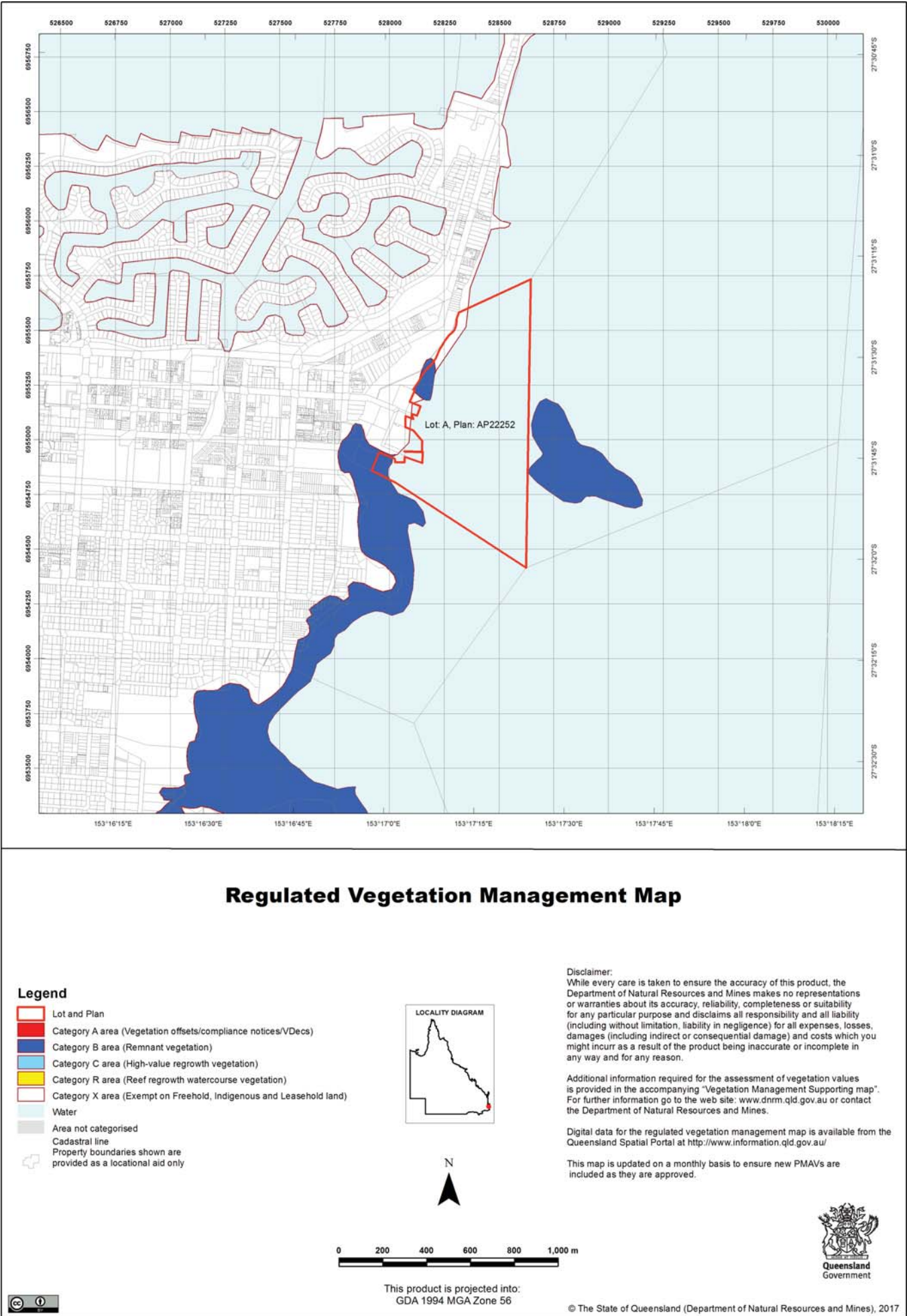
A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999*. The values of EPBC are Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V).

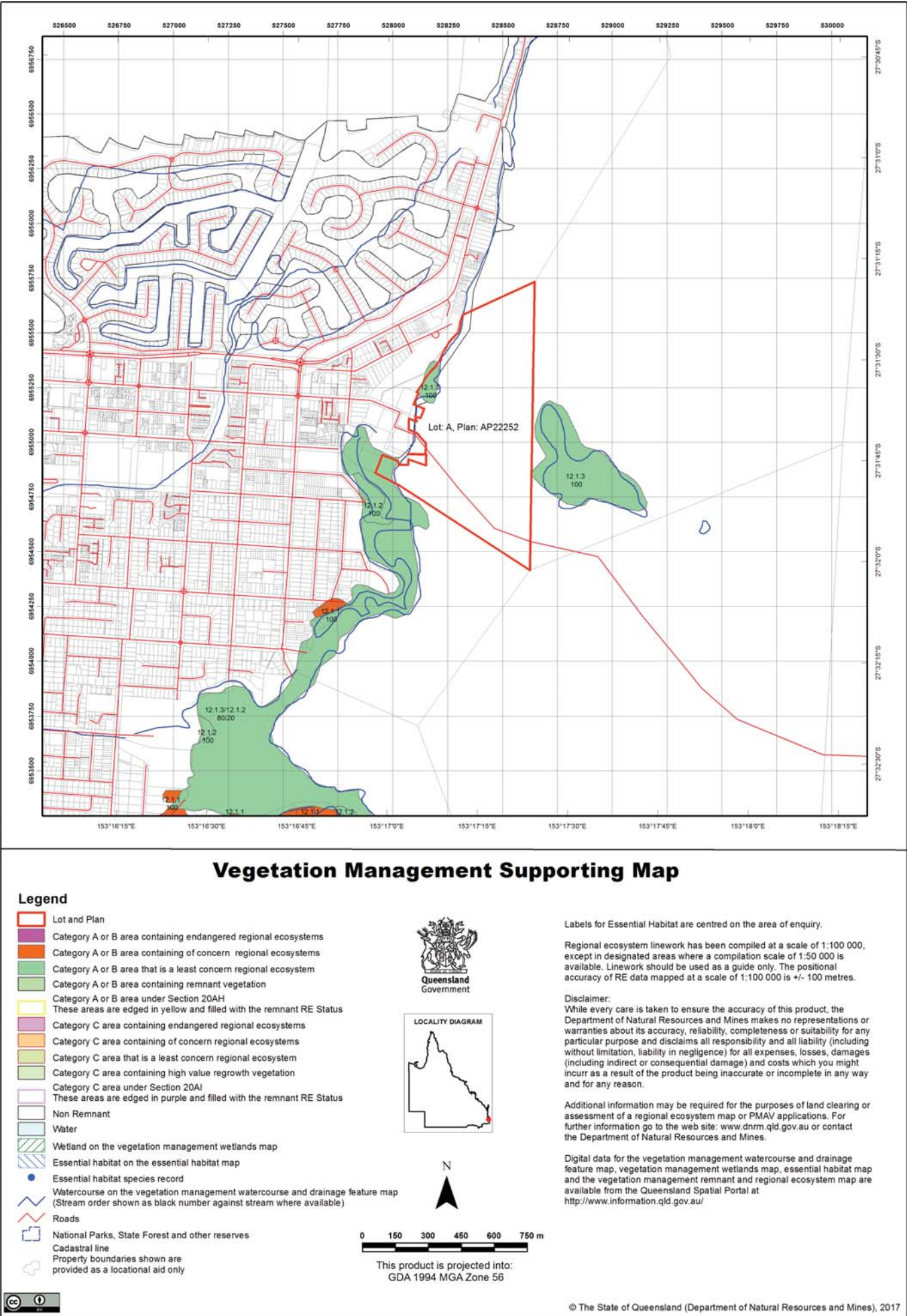
Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).

This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.

This number is output as 999 if it equals or exceeds this value.







Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - Module 8: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Sustainable Planning Act 2009*; and
- Self-assessable vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s or on and within 2.2 km of an identified coordinate on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Natural Resources and Mines website (<http://www.dnrm.qld.gov.au>) has more information on how the layer is applied under the State Development Assessment Provisions - Module 8: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

- 1) (a) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or
- 2) (b) in which the protected wildlife, at any stage of its life cycle, is located.

Essential habitat identifies endangered or vulnerable native wildlife prescribed under the *Nature Conservation Act 1994*.

**Essential habitat in Category A and B (Remnant vegetation species record) areas:1100m Species Information**

(no results)

**Essential habitat in Category A and B (Remnant vegetation species record) areas:1100m Regional Ecosystems Information**

(no results)

**Essential habitat in Category A and B (Remnant vegetation) areas:1100m Species Information**

(no results)

**Essential habitat in Category A and B (Remnant vegetation) areas:1100m Regional Ecosystems Information**

(no results)

**Essential habitat in Category C (High value regrowth vegetation) areas:1100m Species Information**

(no results)

**Essential habitat in Category C (High value regrowth vegetation) areas:1100m Regional Ecosystems Information**

(no results)





**Protected Plants Flora Survey Trigger Map**

**Legend**

- Coordinates
- High risk area
- Cadastral line
- Property boundaries shown are provided as a locational aid only
- Freeways / motorways / highways
- Secondary roads / streets



This product is projected into:  
GDA 1994 Queensland Albers

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Heritage Protection at [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

**Disclaimer:**  
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.



**Queensland** Government

**Department of Environment and Heritage Protection**

Environmental Reports

## **Matters of State Environmental Significance**

Area of Interest: Longitude: 153.28432 Latitude: -27.528

## Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: [Planning.Support@ehp.qld.gov.au](mailto:Planning.Support@ehp.qld.gov.au)

### Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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## Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

**Table 1: Summary table, AOI details**

Area of Interest	153.28432,-27.528 with 2 kilometre radius
Size (ha)	1256.6
Local Government(s)	REDLAND CITY
Bioregion(s)	Southeast Queensland
Subregion(s)	Sunshine Coast - Gold Coast Lowlands
Catchment(s)	Logan-Albert, Moreton Bay Islands

Refer to **Map 1** for locality information.

# Matters of State Environmental Significance (MSES)

## MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist planning and development assessment decision-making. Its primary purpose is to support implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations. Similarly, the SPP biodiversity policy does not override or replace specific requirements of other Acts or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the *Marine Parks Act 2004*;
- Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;
- Threatened wildlife under the *Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
  - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
  - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
  - Category R areas on the regulated vegetation management map;
  - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
  - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014*;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Referable Wetlands under the Environmental Protection Regulation 2008;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

Refer to **Appendix 1** for a description of MSES categories.

## MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

**Table 2: Summary of MSES present within the AOI**

<b>MSES Criteria 1 - STATE CONSERVATION AREAS</b>	7.5 ha	0.6%
1.1 Protected Areas	0.0 ha	0.0%
1.2 Marine Parks	7.5 ha	0.6%
1.3 Fish Habitat Areas	0.0 ha	0.0%
<b>MSES Criteria 2 - WETLANDS AND WATERWAYS - area features</b>	687.1 ha	54.7%
<b>MSES Criteria 2 - WETLANDS AND WATERWAYS - linear features</b>	0.2 km	Not applicable
2.1 High Ecological Significance wetlands on the map of Referable Wetlands	687.1 ha	54.7%
2.2 High Ecological Value (HEV) wetlands	73.0 ha	5.8%
2.2 High Ecological Value (HEV) waterways **	0.2 km	Not applicable
2.3 Strategic Environmental Areas (SEA)	0.0 ha	0.0%
<b>MSES Criteria 3 - SPECIES</b>	638.4 ha	50.8%
3.1 Threatened species and Iconic species	638.4 ha	50.8%
<b>MSES Criteria 4 - REGULATED VEGETATION - area features</b>	4.2 ha	0.3%
<b>MSES Criteria 4 - REGULATED VEGETATION - linear features</b>	27.0 km	Not applicable
4.1 Vegetation Management Regional Ecosystems and Remnant Map *	4.2 ha	0.3%
4.2 Vegetation Management Wetland Map *	0.0 ha	0.0%
4.3 Vegetation Management Watercourse Map **	27.0 km	Not applicable
<b>MSES Criteria 5 - OFFSET AREAS</b>	0.0 ha	0.0%
5.1 Legally secured offset areas	0.0 ha	0.0%
<b>Total MSES</b> (criteria 1.1, 1.2, 1.3, 2.1, part of 2.2, 2.3, 3.1, 4.1, 4.2 and 5.1) calculated for area features only	694.4 ha	55.3%

Please note that the area and percent area figures in the table above will not necessarily add up to the "Total MSES" figures due to overlapping values.

\*The total extent area of regulated vegetation (Criteria 4.1) may be overestimated due to the presence of dominant and/or subdominant non-regulated regional ecosystems in mixed patches of vegetation, i.e. the total area of mixed vegetated patches is included irrespective of whether the patch consists only partly of endangered, of concern or wetland regional ecosystems.

\*\*The total linear extent of watercourses may be overestimated in some instances, as both banks (rather than the centreline) of waterbodies and larger watercourses where present are mapped by the State, increasing the extent of linear features.

## Additional Information with Respect to MSES Values Present

### Criteria 1 - State Conservation Areas

#### 1.1 Protected Areas

(no results)

## 1.2 Marine Parks

Marine Park Name	Zone
Moreton Bay Marine Park	Marine National Park Zone

## 1.3 Fish Habitat Areas

(no results)

Refer to **Map 2 - MSES Criteria 1 - State Conservation Areas** for an overview of the relevant MSES.

## Criteria 2 - Wetlands and Waterways

### 2.1 High Ecological Significance wetlands on the Map of Referable Wetlands

Natural wetlands that are 'High Ecological Significance' (HES) on the Map of Referable Wetlands are present

### 2.2 High Ecological Value (HEV) wetlands

Natural wetlands that occur in HEV (maintain) freshwater and estuarine areas under the Environmental Protection (water) Policy are present

### 2.2 High Ecological Value (HEV) waterways

Natural waterways that occur in HEV (maintain) freshwater and estuarine areas under the Environmental Protection (water) Policy are present

### 2.3 Strategic Environmental Areas

(no results)

Refer to **Map 3 - MSES Criteria 2 - Wetlands and Waterways** for an overview of the relevant MSES.

## Criteria 3 - Species

### 3.1 Threatened species and Iconic species

Threatened and/or iconic species habitat within the AOI (derived from records/essential habitat mapping)

Threatened wildlife and special least concern wildlife	Classification*
Tachyglossus aculeatus	iconic

\*NCA E or V - Endangered or Vulnerable status under the NCA; VMA ehab - VMA essential habitat; Iconic - Iconic species.

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

### Koala bushland habitat

Mapped Koala Bushland habitat present

### Dugong areas

(no results)



Refer to **Map 4 - MSES Criteria 3 - Species** for an overview of the relevant MSES.

## Criteria 4 - Regulated Vegetation

### 4.1 Endangered and Of Concern regional ecosystems and Category R Regulated Vegetation

Regulated Vegetation Description	Regional Ecosystem Patch	VMA status
rem_oc	12.1.1	O-dom

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

### 4.2 Vegetation Management Wetlands

(no results)

#### Wetlands datasource

Not applicable

### 4.3 Watercourses shown on the Vegetation Management Watercourse and Drainage Feature Map

A vegetation management watercourse is mapped as present

#### Watercourses datasource

Vegetation Management Watercourse Map

Refer to **Map 5 - MSES Criteria 4 - Regulated Vegetation** for an overview of the relevant MSES.

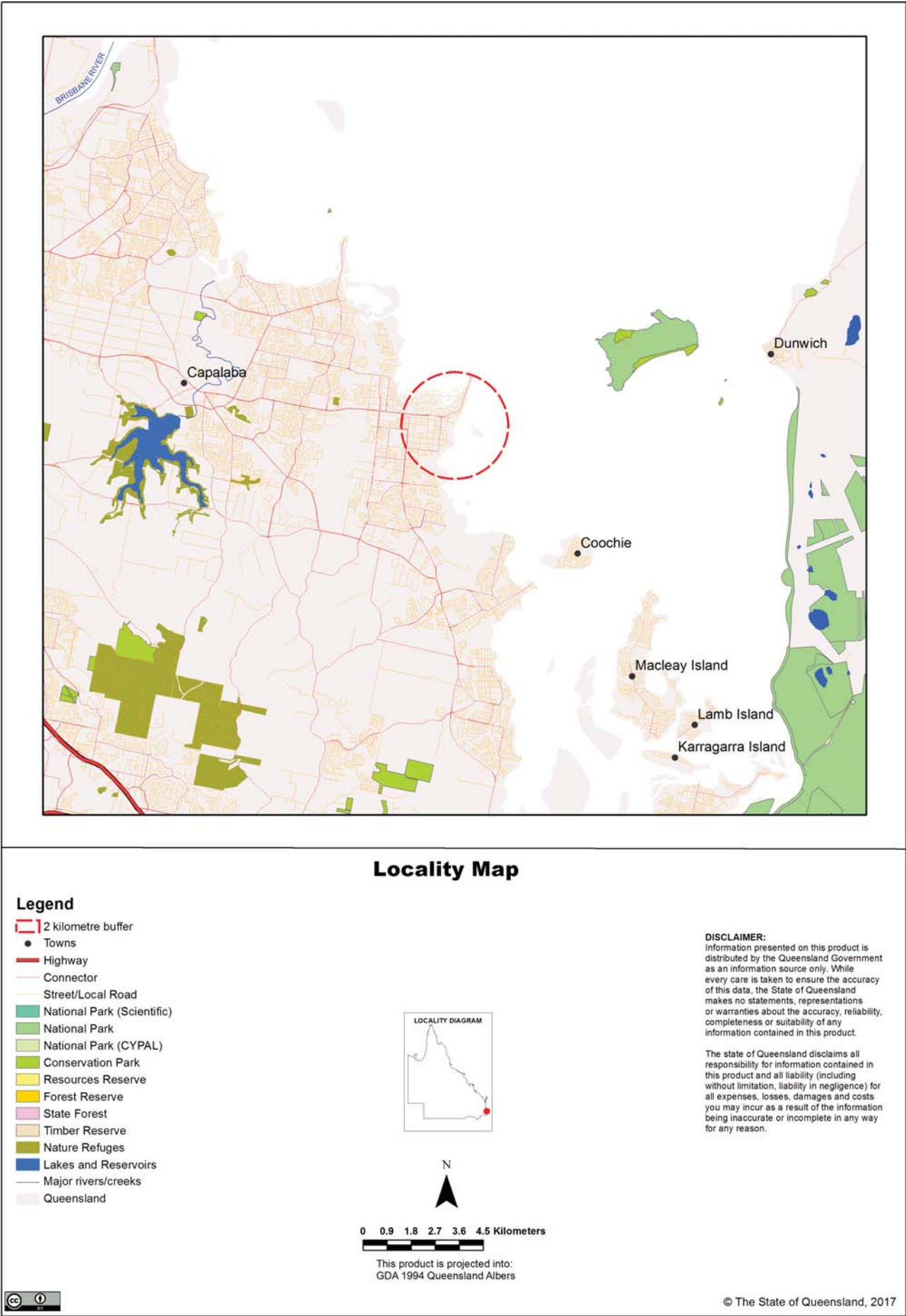
## Criteria 5 - Offset Areas

### 5.1 Legally secured offset areas

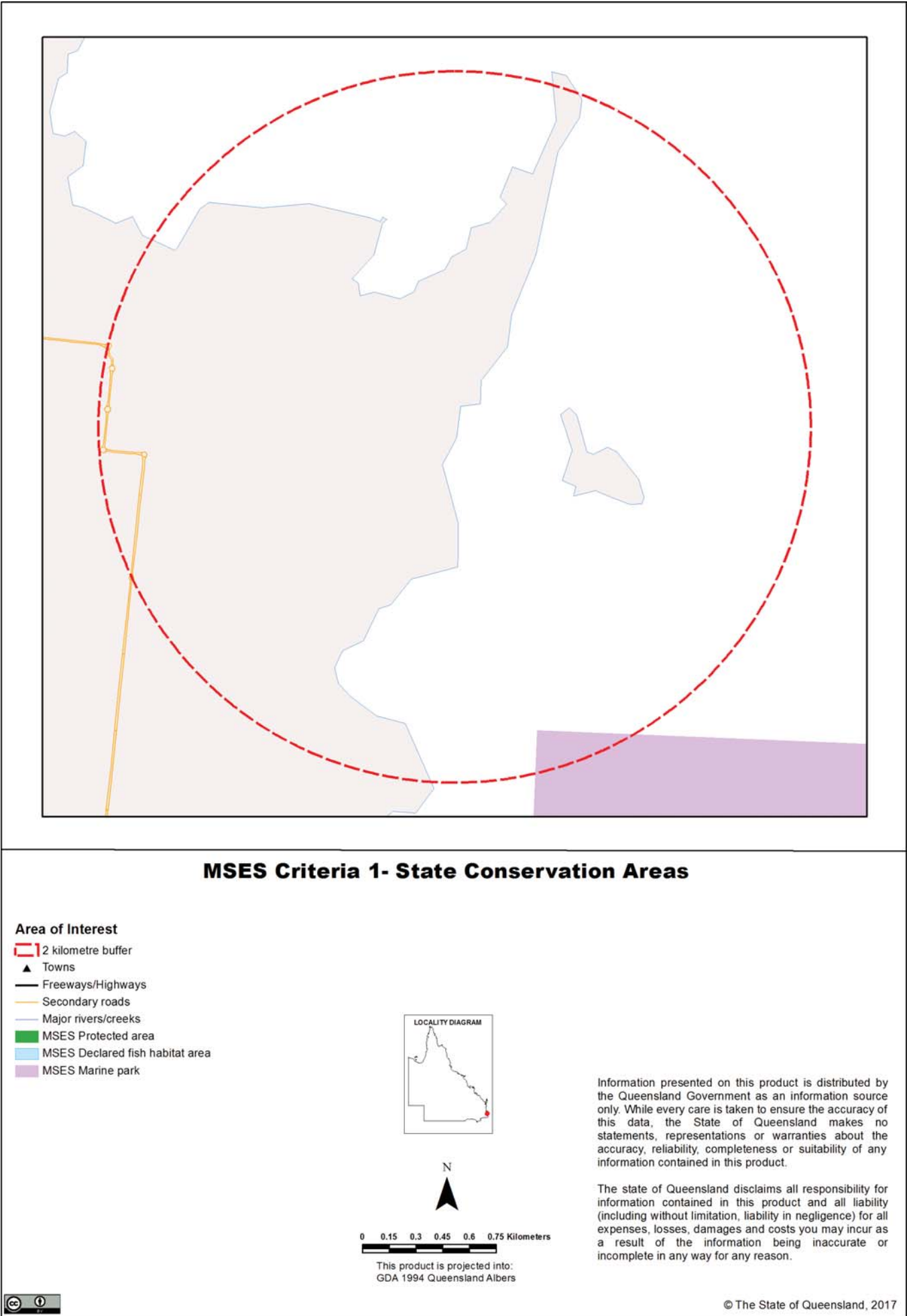
(no results)

Refer to **Map 6 - MSES Criteria 5 - Offset Areas** for an overview of the relevant MSES.

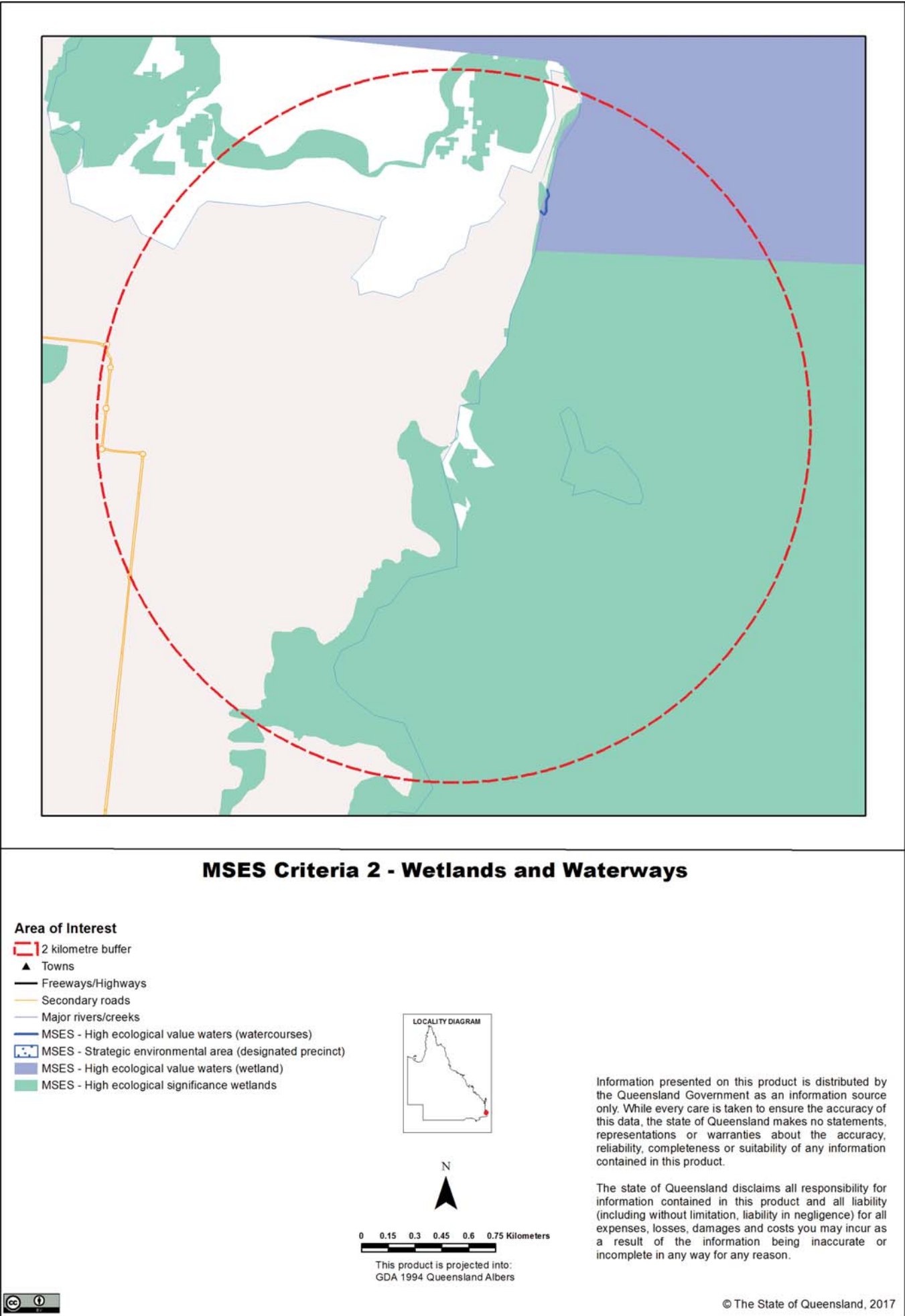
Maps  
Map 1 - Location



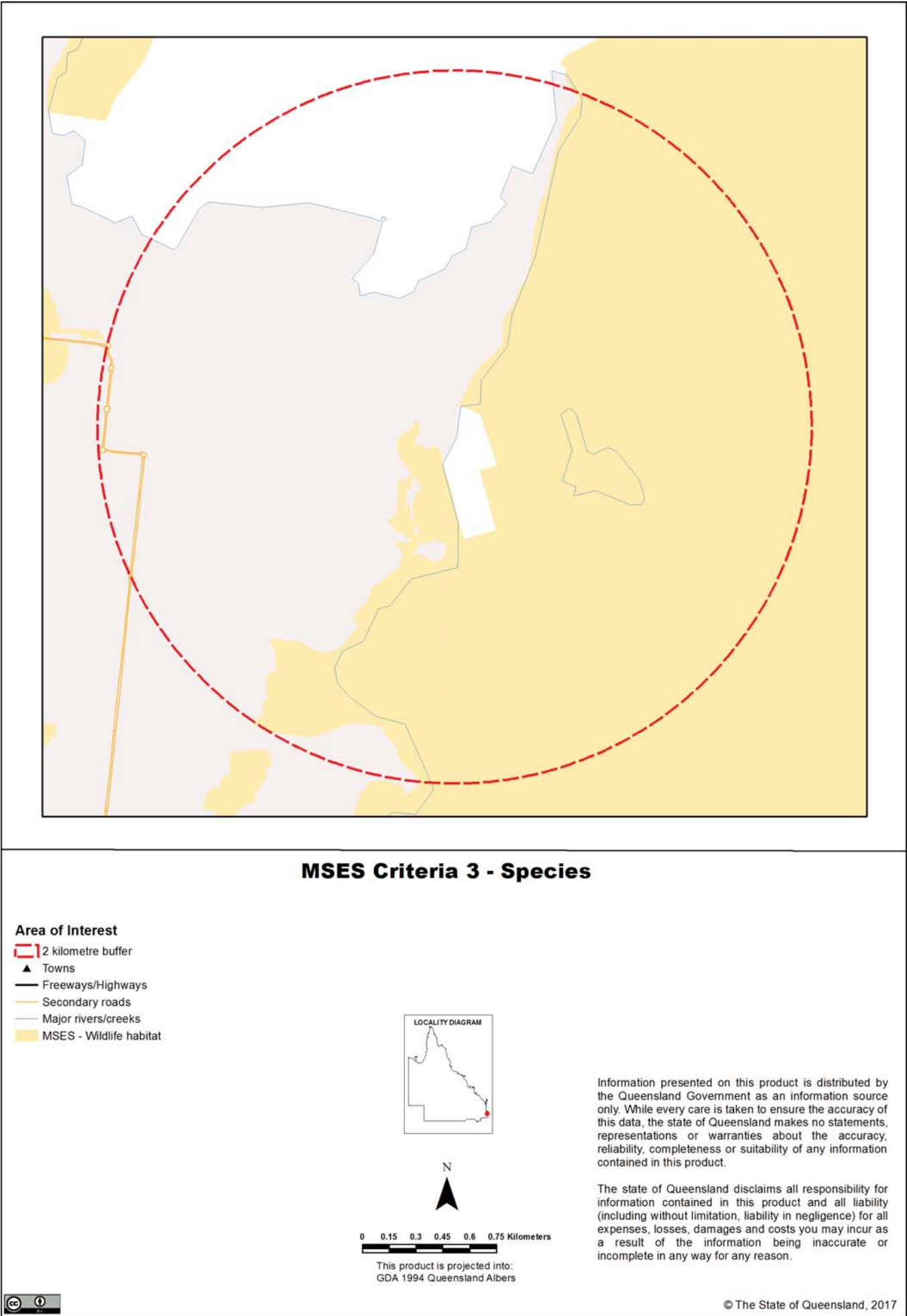
Map 2 - MSES Criteria 1 - State Conservation Areas



Map 3 - MSES Criteria 2 - Wetlands and Waterways

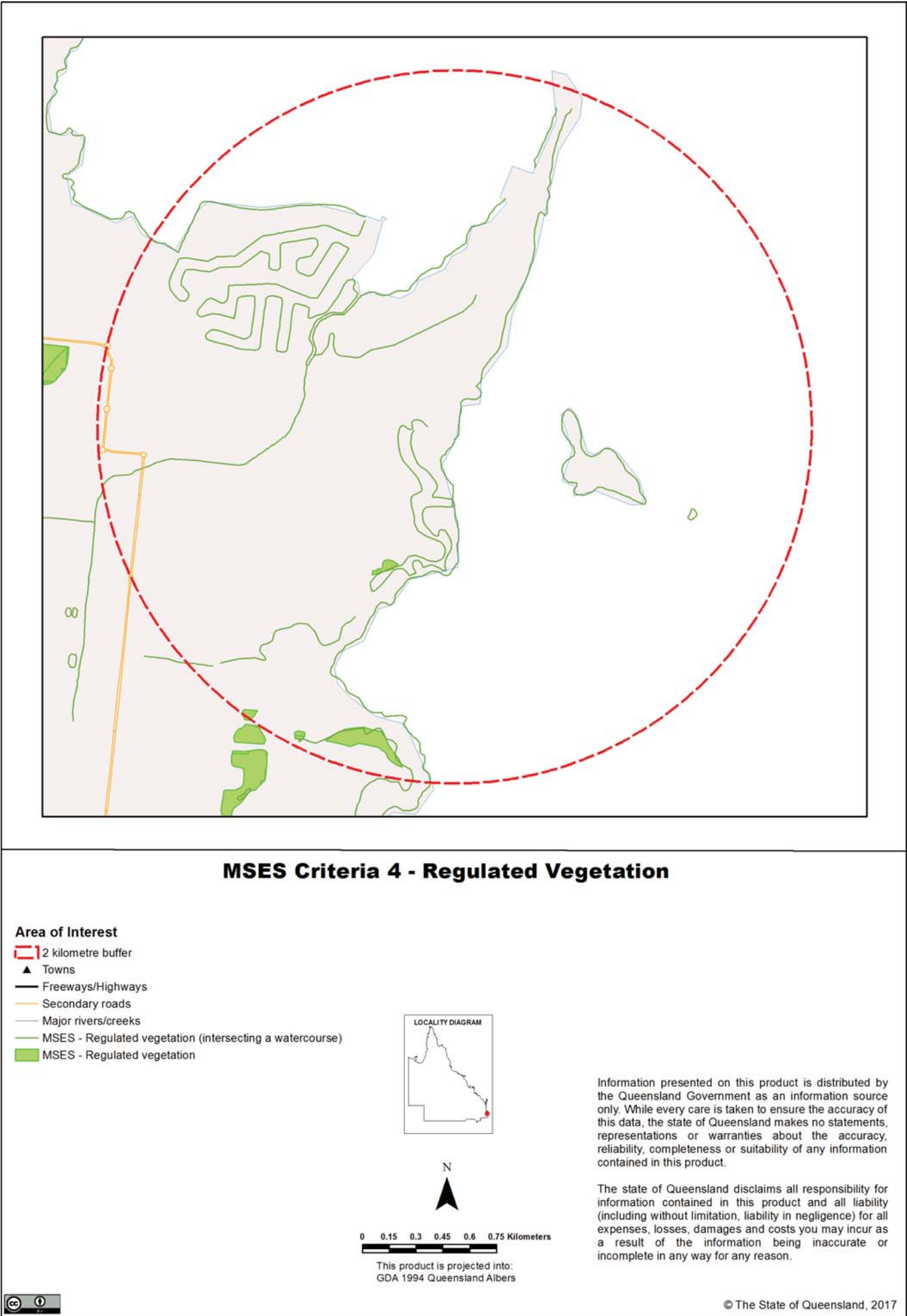


Map 4 - MSES Criteria 3 - Species

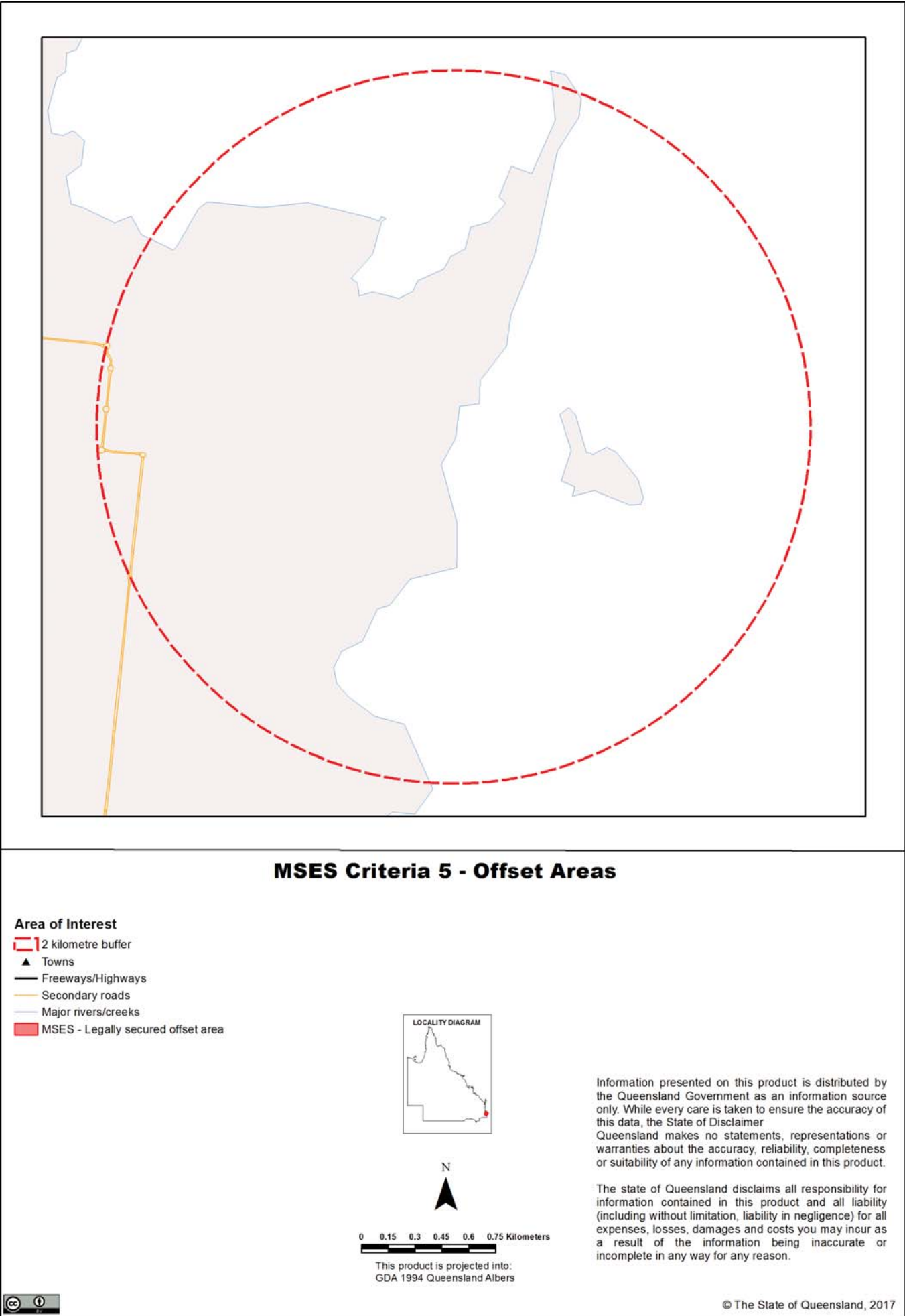




Map 5 - MSES Criteria 4 - Regulated Vegetation

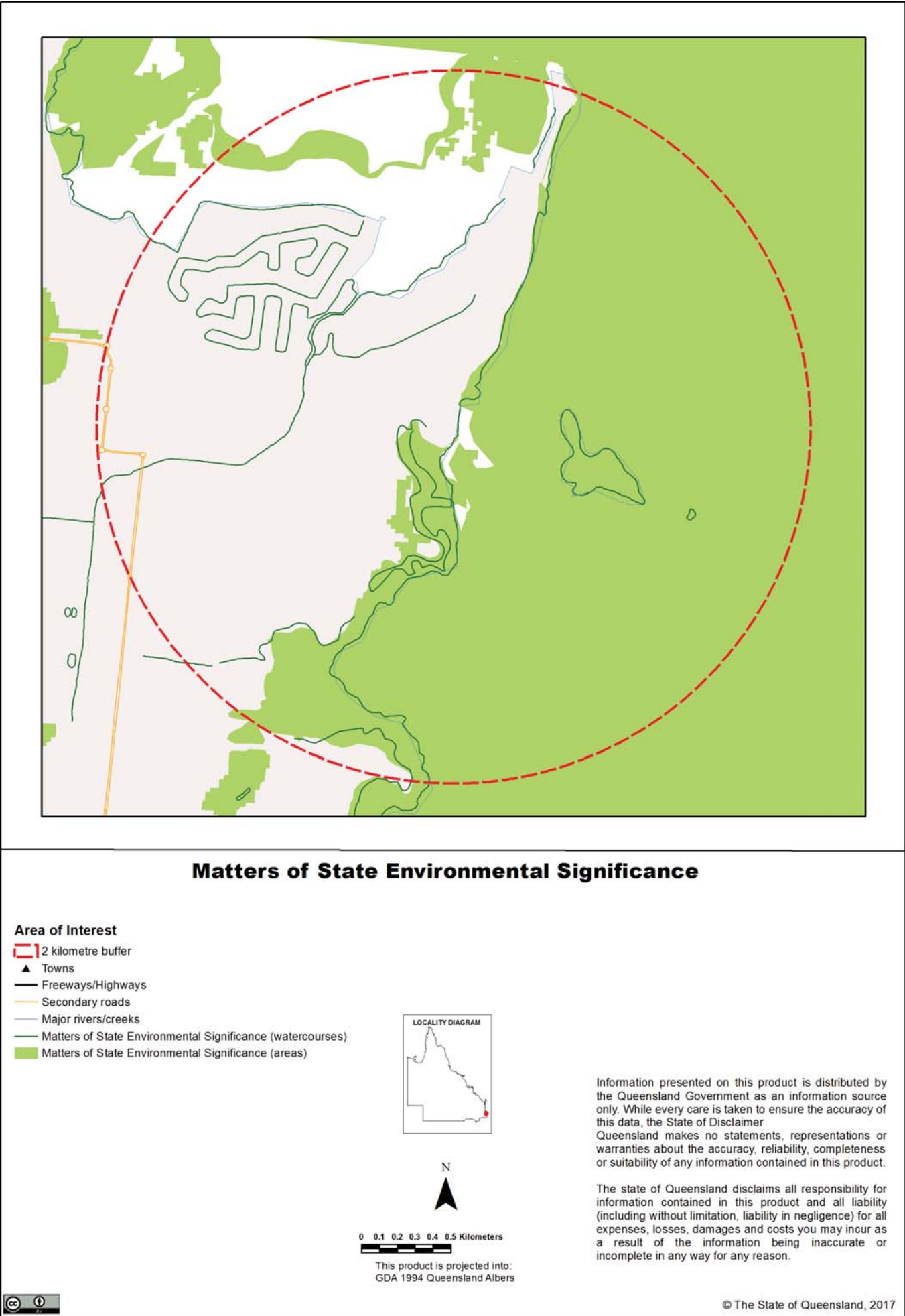


Map 6 - MSES Criteria 5 - Offset Areas





Map 7 - Matters of State Environmental Significance



## Appendices

### Appendix 1 - Matters of State Environmental Significance (MSES) Criteria

Feature Name	Description
1.1 Protected Areas (NCA)	Protected areas under the <i>Nature Conservation Act 1992</i> , except coordinated conservation areas.
1.2 Marine Parks (MPA)	The following State marine parks zones under the <i>Marine Parks Act 2004</i> : <ul style="list-style-type: none"> <li>- Marine National Park zone;</li> <li>- Marine Conservation Park zone;</li> <li>- Scientific Research zone;</li> <li>- Preservation zone;</li> <li>- Buffer zone.</li> </ul>
1.3 Fish Habitat Areas (FA)	The following areas under the <i>Fisheries Act 1994</i> including: All fish habitat areas.
2.1 'High Ecological Significance' wetlands on the Map of Referable Wetlands	All natural wetlands that are 'High Ecological Significance' (HES) on the Map of Referable Wetlands. Exclude: any amendments to the Map of Referable Wetlands.
2.2 High Ecological Value (HEV) wetlands and waterways (EP Act)	Natural wetlands and waterways that occur in HEV (maintain) freshwater and estuarine areas under the Environmental Protection (Water) Policy.
2.3 Strategic Environmental Areas (RPI Act)	Designated precinct areas under the <i>Regional Planning Interests Act 2014</i> .
3.1 Threatened species and Iconic species (NCA)	Habitat for: Threatened wildlife under <i>Nature Conservation Act 1992</i> including: 'Endangered' and 'Vulnerable' species. Special least concern animals under the <i>Nature Conservation Act 1992</i> including: Koala (outside SEQ); Echidna and Platypus.
4.1 Vegetation Management Regional Ecosystem and Remnant Map (VMA)	Include VMA 'Endangered' and 'Of Concern' remnant (Category A and B) and high value regrowth (Category C) REs and Category R (GBR regrowth watercourse) areas from the Regulated Vegetation Management Map.
4.2 Vegetation Management Wetland Map (VMA)	Wetlands that are lakes and swamps shown on the Vegetation Management Wetlands Map.
4.3 Vegetation Management Watercourse and Drainage Feature Map (VMA)	Watercourses shown on the Vegetation Management Watercourse and Drainage Feature Map.
5.1 Legally secured offset areas (VMA, EP Act, SPA, TIA, EA)	Offset areas legally secured under a covenant, conservation agreement or development approval condition.

The Queensland Government's "Method for mapping - matters of state environmental significance for use in land use planning and development assessment" can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html>.

## Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance
- Matters of State environmental significance drainage lines
- Boundaries of the Great Barrier Reef Marine Park

Note: MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). The compiled MSES mapping product is a guide to assist planning and development assessment decision-making. Its primary purpose is to support implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations. Similarly, the SPP biodiversity policy does not override or replace specific requirements of other Acts or regulations.

MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Underlying data sources used to develop individual releases of compiled MSES mapping include, but are not limited to:

- Regulated vegetation including:

- Regulated Regional Ecosystems and Regrowth
- Regulated Essential habitat
- Regulated Wetlands
- Regulated Watercourses and Drainage
- Former Regrowth

- Queensland Wetland Mapping (v3)

- Essential Habitat Mapping

- Protected Areas

- Marine Parks

- Fish Habitat Areas

- Strategic Environmental Areas

- The Map of Referable Wetlands:

- Wetland Protection Areas (HES wetlands in the GBR)
- Wetland Management Areas (contains other HES wetlands)

Datasets reflective of the above matters can be downloaded via the Queensland Spatial Catalogue:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

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## Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
EHP	- Department of Environment and Heritage Protection
EP Act	- <i>Environmental Protection Act 1994</i>
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- <i>Vegetation Management Act 1999</i>

## **APPENDIX 3**

### **Conservation significant flora and fauna species identified in the desktop assessment and their likelihood of occurrence in the Toondah Harbour PDA**

**Conservation significant terrestrial flora and vertebrate fauna species recorded or predicted to occur within a 1 km radius of the Toondah Harbour PDA and their likelihood of occurrence (known, likely, potential or unlikely) within or immediately adjoining the subject site.**

**Abbreviations:** **EPBC** = status under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth); **NCA** = status under the *Nature Conservation Act 1992* (Queensland); **RCC** = status under the Redland City Council Biodiversity Strategy; **PM** = EPBC Protected Matters Search Tool database search within a 1 km radius of the study area; **WN** = Queensland Government Wildlife Online database records since 1980 within a 1 km radius of the study area; **QWSG** = Queensland Wader Study Group records for Nandeebie Claypan high tide roost site; **BAAM** = Recorded within the study area during surveys conducted by Biodiversity Assessment and Management Pty Ltd; **E** = Endangered; **V** = Vulnerable; **NT** = Near Threatened; **M** = Migratory; **S** = Special Least Concern (Migratory or culturally significant); **LC** = Least Concern; **X** = species occurrence predicted (PM) or recorded; **Y** = Species is associated with mapped vegetation (NEDS).

**Likelihood of occurrence categories:** **Known** – the species has been recorded within or immediately adjoining the PDA during surveys (BAAM, QWSG); **Potential to occur** – the species has not been recorded onsite during surveys but there are database records within 1 km of the site, it is known to occur immediately adjacent to the study area or knowledge of the species occurrence suggests it may occur as a regular visitor; **Unlikely to occur** – the species has not been recorded within 1 km of the study site since 1980 or no suitable habitat present and/or the site is outside of the known range of the species.

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
<b>Threatened species known to occur</b>									
<i>Numenius madagascariensis</i>	Eastern Curlew	CE, M	V	x	180	x	x	Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	<b>Known.</b> Feeds on intertidal mudflats within and adjacent to the study area and roosts at shoreline roost sites within and adjacent to the study area.
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit (Western Alaskan)	V, M	S	x	219	x	x	Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	<b>Known.</b> Feeds on intertidal mudflats within and adjacent to the study area and roosts at shoreline roost sites within and adjacent to the study area.
<i>Calidris tenuirostris</i>	Great Knot	CE, M	S	x	33	x	x	Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	<b>Known.</b> Feeds on intertidal mudflats within and adjacent to the study area and roosts at shoreline roost sites within and adjacent to the study area.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE, M	S	x	12	x		Feeds on intertidal mudflats	<b>Known.</b> Feeds on intertidal

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
								and sandflats, roosts on beaches, rocky shores, sandbars, claypans and saltmarshes near the high tide mark.	mudflats within and adjacent to the study area and roosts at shoreline roost sites within and adjacent to the study area.
<i>Phascolarctos cinereus</i> (SEQ Bioregion)	Koala (SEQ Bioregion)	V	V	x	420		x	Forests and woodlands with eucalypt trees, particularly <i>Eucalyptus</i> species.	<b>Known.</b> Feeds on food trees ( <i>species of Eucalyptus, Corymbia, Lophostemon and Melaleuca</i> ) growing in the urban environment within and adjacent to the study area.
<b>Threatened species with potential to occur</b>									
<i>Calidris canutus</i>	Red Knot	E, M	S	x	8			Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	<b>Potential.</b> While it has not been recorded within the study area, the species is known to occur within 1 km of the study area and it has potential to feed on intertidal mudflats within (rarely) or adjacent to the study area and roost at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Charadrius mongolus</i>	Lesser Sand Plover	E, M	S	x	8			Feeds on intertidal mudflats and sandflats, roosts on beaches, rocky shores, sandbars, claypans and saltmarshes near the high tide mark.	<b>Potential.</b> While it has not been recorded within the study area, the species is known to feed on intertidal mudflats south of the study area, it has potential to feed on intertidal mudflats within the study area (rarely) and it has potential to roost at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Charadrius leschenaultii</i>	Greater Sand Plover	V, M	S	x	2			Feeds on intertidal mudflats and sandflats, roosts on	<b>Potential.</b> While it has not been recorded within the study area,



Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
								beaches, rocky shores, sandbars, claypans and saltmarshes near the high tide mark.	the species is known to feed on intertidal mudflats south of the study area, it has potential to feed on intertidal mudflats within the study area (rarely) and it has potential to roost at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	LC	x				Open eucalypt forests, woodlands, melaleuca swamps and banksia woodlands, particularly on more fertile alluvial soils.	<b>Potential.</b> While it has not been recorded within the study area, the species is known from the local area and it has potential to be a regular seasonal visitor to feed on flowering trees within the study area.
<b>Threatened species unlikely to occur</b>									
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	LC	x				Wetlands with tall reeds, sedges, rushes or lignum.	Unlikely – no suitable habitat.
<i>Diomedea antipodensis gibsoni</i>	Gibson's Albatross	V	V	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Diomedea exulans</i>	Wandering Albatross	V, M	V	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Thalassarche cauta cauta</i>	Shy Albatross	V, M	V	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Thalassarche cauta steadi</i>	White-capped Albatross	V, M	V	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Thalassarche eremita</i>	Chatham Albatross	E	LC	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Thalassarche impavida</i>	Campbell Black-browed Albatross	V	LC	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Thalassarche melanophris</i>	Black-browed Albatross	V, M	S	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Thalassarche salvini</i>	Salvin's Albatross	V	LC	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
<i>Macronectes giganteus</i>	Southern Giant-Petrel	E, M	E	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Macronectes halli</i>	Northern Giant-Petrel	V, M	V	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Pterodroma neglecta neglecta</i>	Kermadec Petrel (Western)	V	LC	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Fregetta grallaria grallaria</i>	White-bellied Storm-Petrel (Tasman Sea)	V	LC	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)	V	LC	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Erythrorhynchus radiatus</i>	Red Goshawk	V	E	x				Woodlands and forests, particularly riverine forests.	Unlikely – no suitable habitat.
<i>Turnix melanogaster</i>	Black-breasted Button-quail	V	V	x				Semi-evergreen vine thicket and low microphyll vine forest; also dry rainforest and coastal scrubs.	Unlikely – no suitable habitat.
<i>Limosa lapponica menzbieri</i>	Bar-tailed Godwit (Northern Siberian)	CE, M	S					Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	Unlikely – not known to migrate down the east coast of Australia.
<i>Rostratula australis</i>	Australian Painted Snipe	E	V	x				Well-vegetated margins of freshwater wetlands.	Unlikely – no suitable habitat.
<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern)	V	V	x				Dry grassy eucalypt woodlands, open forests and scrub	Unlikely – no suitable habitat.
<i>Cyclopsitta diophthalma coxeni</i>	Double-eyed Fig-Parrot (Coxen's)	E, M	E	x				Rainforest with an abundance of large fig trees.	Unlikely – no suitable habitat.
<i>Lathamus discolor</i>	Swift Parrot	E	E	x				Forests and woodlands; feeds on nectar and lerp-insects in foliage	Unlikely – no suitable habitat.
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	E	E	x				In Queensland restricted to scrubs and heaths in mountainous ranges.	Unlikely – no suitable habitat.

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
<i>Anthochaera phrygia</i>	Regent Honeyeater	E, M	E	x				Dry open forest and woodland.	Unlikely – no suitable habitat.
<i>Poephila cincta cincta</i>	Black-throated Finch (Southern subsp)	E	E	x				Grassy woodlands.	Unlikely – no suitable habitat.
<i>Dasyurus maculatus maculatus</i>	Spotted-tailed Quoll (SE Mainland)	E	V	x				Associated with rocky gorges and mountains with rainforests, wet and dry sclerophyll forests, coastal heath, scrub and sometimes Red Gum forests along inland rivers.	Unlikely – no suitable habitat.
<i>Dasyurus hallucatus</i>	Northern Quoll	E	LC	x				Rocky eucalypt woodland and open forest within 200 kilometres of the coast.	Unlikely – no suitable habitat. Within Queensland, it is now largely confined to rocky escarpment country with extensive areas of contiguous remnant vegetation.
<i>Petauroides volans</i>	Greater Glider	V	LC	x				Eucalypt forests and woodlands, favouring forests with a diversity of eucalypt species.	Unlikely – no suitable habitat.
<i>Chalinolobus dwyeri</i>	Large Pied Bat	V	V	x				Associated with sandstone and other rocky escarpments.	Unlikely – no suitable habitat.
<i>Xeromys myoides</i>	False Water-rat	V	V	x				Mangroves and saltmarsh.	Unlikely – not known to occur in the local region.
<i>Delma torquata</i>	Adorned Delma	V	V	x				Open eucalypt forest with a shrub and tussock grass understorey.	Unlikely – no suitable habitat.
<i>Saiphos reticulatus</i>	Three-toed Snake-tooth Skink	V	LC	x				Rainforest, closed forest, wet sclerophyll forest, tall open Blackbutt ( <i>Eucalyptus pilularis</i> ) forest, tall layered open eucalypt forest and closed Brush Box ( <i>Lophostemon</i>	Unlikely – no suitable habitat.

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
								<i>confertus</i> ) forest.	
<i>Phyllodes imperialis smithersi</i>	Pink Underwing Moth	E	LC	x				Undisturbed, subtropical rainforest.	Unlikely – no suitable habitat.
<i>Esacus magnirostris</i>	Beach Stone-curlew		V		1			Open, undisturbed sandy beaches, reefs and lagoons and nearby mudflats and sandflats.	Unlikely – no suitable sandy beach habitat in the vicinity.
<i>Calyptrorhynchus lathamii lathamii</i>	Glossy Black-Cockatoo (eastern)		V		2			Forests and woodlands, preferring habitats dominated by she-oaks ( <i>Allocasuarina</i> spp. and certain <i>Casuarina</i> spp.) in the canopy or middle stratum.	Unlikely – no suitable habitat.
<b>Migratory species known to occur</b>									
<i>Pandion cristatus</i>	Eastern Osprey	M	S		10	x	x	Bays, estuaries, along tidal stretches of large coastal rivers, mangrove swamps, terrestrial wetlands and off-shore islands.	<b>Known.</b> Forages for fish over open waters but no nest site occurs in the study area.
<i>Numenius phaeopus</i>	Whimbrel	M	S	x	19	x	x	Feeds on intertidal mudflats and sandflats, roosts on mangrove trees, beaches, rocky shores, sandbars, claypans and saltmarshes near the high tide mark.	<b>Known.</b> Feeds on intertidal mudflats within and adjacent to the study area and roosts at mangrove and shoreline roost sites within and adjacent to the study area.
<i>Xenus cinereus</i>	Terek Sandpiper	M	S	x	9		x	Feeds on intertidal mudflats and sandflats, roosts on mangrove trees, beaches, rocky shores, sandbars, claypans and saltmarshes near the high tide mark.	<b>Known.</b> Feeds on intertidal mudflats within and adjacent to the study area and roosts at mangrove and shoreline roost sites within and adjacent to the study area.
<i>Tringa brevipes</i>	Grey-tailed Tattler	M	S	x	21	x	x	Feeds on intertidal mudflats and sandflats, roosts on mangrove trees, beaches, rocky shores, sandbars,	<b>Known.</b> Feeds on intertidal mudflats within and adjacent to the study area and roosts at mangrove and shoreline roost

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
								claypans and saltmarshes near the high tide mark.	sites within and adjacent to the study area.
<i>Arenaria interpres</i>	Ruddy Turnstone	M	S	x	16		x	Feeds on intertidal mudflats and sandflats, roosts on mangrove trees, beaches, rocky shores, sandbars, claypans and saltmarshes near the high tide mark.	<b>Known.</b> Feeds on intertidal mudflats within (rarely) or adjacent to the study area and roosts at mangrove and shoreline roost sites within and adjacent to the study area.
<i>Calidris ruficollis</i>	Red-necked Stint	M	S	x	10		x	Feeds on intertidal mudflats and sandflats, roosts on beaches, rocky shores, sandbars, claypans and saltmarshes near the high tide mark.	<b>Known.</b> Feeds on intertidal mudflats within (rarely) or adjacent to the study area and roosts at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Limosa limosa</i>	Black-tailed Godwit	M	S	x	12	x		Feeds in shallow saltwater and freshwater wetlands, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	<b>Known.</b> Recorded rarely at roost sites within and adjacent to the study area.
<i>Pluvialis fulva</i>	Pacific Golden Plover	M	S	x	4	x		Feeds on intertidal mudflats and sandflats, roosts on beaches, rocky shores, sandbars, claypans, saltmarshes and short, open grassy areas near the coast.	<b>Known.</b> Feeds on intertidal mudflats within (rarely) or adjacent to the study area and roosts at shoreline roost sites within (rarely) and adjacent to the study area.
<i>Gelochelidon nilotica</i>	Gull-billed Tern	M	S		78	x	x	Coastal bays, lagoons and freshwater wetlands, beaches and mudflats.	<b>Known.</b> Feeds over open waters and intertidal mudflats and (maximum 7 birds) rarely roosts at Nandeebie Claypan (maximum 32 roosting birds).
<i>Hydroprogne caspia</i>	Caspian Tern	M	S		88	x	x	Coastal bays, lagoons and wetlands but also inland freshwater wetlands including lakes, reservoirs	<b>Known.</b> Feeds over open waters and intertidal mudflats (maximum 2 birds) and rarely roosts at Nandeebie Claypan

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
								and large rivers.	(maximum 14 roosting birds).
<i>Sternula albifrons</i>	Little Tern	M	S	x	5		x	Coastal waters, brackish lakes, saltfields and sewage ponds near the coast; nests on islands and beach sand spits.	<b>Known.</b> Feeds over open waters (maximum 1 bird recorded); while it is known to roost at Oyster Point, it was not recorded roosting at Nandeebie Claypan.
<b>Migratory species with potential to occur</b>									
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	M	S	x	9			Coastal and inland areas, preferring non-tidal fresh or brackish wetlands, or mudflats near river mouths.	<b>Potential.</b> While it has not been recorded within the study area, the species is known from the local area and has potential to feed on intertidal mudflats within (rarely) or adjacent to the study area and roost at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Tringa nebularia</i>	Common Greenshank	M	S		8			Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	<b>Potential.</b> While it has not been recorded within the study area, the species is known from the local area and has potential to feed on intertidal mudflats within (rarely) or adjacent to the study area and roost at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Tringa stagnatilis</i>	Marsh Sandpiper	M	S	x	1			Feeds in the shallows of brackish and freshwater wetlands.	<b>Potential.</b> While it has not been recorded within the study area, the species is known from the local area and has potential to feed on intertidal mudflats

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
									within (rarely) or adjacent to the study area and roost at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Actitis hypoleucos</i>	Common Sandpiper	M	S	x	1			Mangrove inlets, rocky shores and creeks, channels and dams.	<b>Potential.</b> While it has not been recorded within the study area, the species is known from the local area and has potential to feed on intertidal mudflats within (rarely) or adjacent to the study area and roost at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Charadrius bicinctus</i>	Double-banded Plover	M	S	x	6			Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	<b>Potential.</b> While it has not been recorded within the study area, the species is known from the local area and has potential to feed on intertidal mudflats within (rarely) or adjacent to the study area and roost at shoreline roost sites within (rarely) or adjacent to the study area.
<i>Chlidonias leucopterus</i>	White-winged Black Tern	M	S		1			Large coastal and inland wetlands.	<b>Potential.</b> The species was not recorded during any of the surveys, but it has been recorded within 1 km of the study area in the past. While it may occur as a rare seasonal visitor, the study area is not important habitat for this



Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
									species.
<i>Thalasseus bergii</i>	Crested Tern	M	S		14			Coastal bays and offshore waters, lagoons and wetlands but also inland freshwater wetlands including lakes, reservoirs and large rivers.	<b>Potential.</b> The species was not recorded during any of the surveys, but it has been recorded within 1 km of the study area in the past. While it may occur as a regular visitor, feeding on fish over open waters, the study area is not important habitat for this species.
<i>Sterna hirundo</i>	Common Tern	M	S		3			Coastal bays, lagoons and wetlands.	<b>Potential.</b> The species was not recorded during any of the surveys, but it has been recorded within 1 km of the study area in the past. While it may occur as a rare seasonal visitor, the study area is not important habitat for this species.
<i>Hirundapus caudacutus</i>	White-throated Needletail	M	S	x				Almost exclusively aerial over a range of habitats, more often over wooded areas. Does not breed in Australia.	<b>Potential.</b> The species was not recorded during any of the surveys, but it has been recorded within 1 km of the study area in the past. While it may occur as a regular seasonal visitor feeding on insects in the air, the study area is not important habitat for this species.
<i>Cuculus optatus</i>	Oriental Cuckoo	M	S	x				Monsoonal rainforest, vine thickets, wet eucalypt forest or open woodlands (Commonwealth of Australia 2015). Does not	<b>Potential.</b> The species was not recorded during any of the surveys, but it has been recorded within 1 km of the study area in the past. While it

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
								breed in Australia.	may occur as a rare seasonal visitor, the study area is not important habitat for this species.
<i>Rhipidura rufifrons</i>	Rufous Fantail	M	S	x				Breeding migrant to moist habitats with a dense understorey, including mangroves, rainforest, riparian forests and wet eucalypt forests (Commonwealth of Australia 2015).	<b>Potential.</b> The species has not been recorded within 1 km of the study area, but suitable mangrove forest habitat occurs in the southern portion of the PDA. While it may occur as a rare seasonal visitor, the study area is not important habitat for this species.
<b>Migratory species unlikely to occur</b>									
<i>Fregata ariel</i>	Lesser Frigatebird	M	S	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Fregata minor</i>	Greater Frigatebird	M	S	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Ardenna carneipes</i>	Flesh-footed Shearwater	M	S	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Calonectris leucomelas</i>	Streaked Shearwater	M	S	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Numenius minutus</i>	Little Curlew	M	S	x				Short, dry grasslands and sedgeland, including artificial areas, and on the grassy edges of freshwater wetlands.	Unlikely – has not been recorded in the local area.
<i>Calidris alba</i>	Sanderling	M	S	x	1			Feeds on sandy coastal beaches, roosts on beaches, rocky shores, claypans and saltmarshes near the high water mark.	Unlikely – no suitable feeding habitat.
<i>Calidris melanotos</i>	Pectoral Sandpiper	M	S	x				Mostly fresh to saline waterbodies, usually coastal but occasionally inland.	Unlikely. The species has not been recorded in the local area and no preferred habitat occurs in the study area.

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
<i>Gallinago hardwickii</i>	Latham's Snipe	M	S	x	1			Shallow freshwater wetlands with emergent grasses and sedges.	Unlikely – no suitable feeding habitat.
<i>Gallinago megala</i>	Swinhoe's Snipe	M	S	x				Edges of reedy swamps and wet grassy ground in northern Australia	Unlikely – no suitable habitat and outside known range.
<i>Gallinago stenura</i>	Pin-tailed Snipe	M	S	x				Boggy wetland edges in north-western Australia	Unlikely – no suitable habitat and outside known range.
<i>Heteroscelus incanus</i>	Wandering Tattler	M	S	x				Rocky coastlines and reefs	Unlikely – no suitable habitat.
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	M	S	x				Feeds on soft muddy substrates of tidal mudflats; roosts at shoreline roost sites.	Unlikely – has not been recorded in the local area and intertidal habitat generally not suitable.
<i>Limnodromus semipalmatus</i>	Asian Dowitcher	M	S	x				Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	Unlikely – has not been recorded in the local area.
<i>Philomachus pugnax</i>	Ruff	M	S	x				Feeds on intertidal mudflats, sandflats and shallows of freshwater wetlands; roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	Unlikely – has not been recorded in the local area.
<i>Tringa glareola</i>	Wood Sandpiper	M	S	x				Margins of freshwater wetlands, occasionally margins of tidal mudflats.	Unlikely – habitat generally not suitable and has not been recorded in the local area.
<i>Pluvialis squatarola</i>	Grey Plover	M	S	x				Feeds on intertidal mudflats and sandflats, roosts on beaches, sandbars, claypans and saltmarshes near the high tide mark.	Unlikely – has not been recorded in the local area.
<i>Charadrius veredus</i>	Oriental Plover	M	S	x				Open grasslands, preferring flat sparsely vegetated inland plains.	Unlikely – no suitable habitat.

Species	Common name	EPBC	NCA	PM	WN	QWSG	BAAM	Preferred habitat	Likelihood of occurrence
<i>Anous stolidus</i>	Common Noddy	M	S	x				Feeds on the open ocean, nests on oceanic islands.	Unlikely – no suitable habitat.
<i>Apus pacificus</i>	Fork-tailed Swift	M	S	x				Almost exclusively aerial over a range of habitats , from inland open plains to wooded areas. Does not breed in Australia.	Unlikely – has not been recorded in the local area.
<i>Symposiarchus trivirgatus</i>	Spectacled Monarch	M	S	x				Breeding migrant to dense vegetation, mainly in rainforest but also in moist forest or wet eucalypt forest.	Unlikely. The species has not been recorded in the local area and no preferred habitat occurs in the study area.
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	M	S	x				Breeding migrant to eucalypt forest and woodlands, at high elevations when breeding.	Unlikely. The species has not been recorded in the local area and no preferred habitat occurs in the study area.
<i>Monarcha melanopsis</i>	Black-faced Monarch	M	S	x				Breeding migrant to wet forest, mainly in rainforest and wet sclerophyll forest, especially in sheltered gullies and slopes with a dense understorey of ferns and shrubs.	Unlikely. The species has not been recorded in the local area and no preferred habitat occurs in the study area.

**Conservation significant terrestrial flora species recorded or predicted to occur within a 1 km radius of the Toondah Harbour PDA and their likelihood of occurrence (known, likely, potential or unlikely) within or immediately adjoining the subject site.**

**Abbreviations:** **EPBC** = status under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth); **NCA** = status under the *Nature Conservation Act 1992* (Queensland); **RCC** = status under the Redland City Council Biodiversity Strategy; **PM** = EPBC Protected Matters Search Tool database search within a 1 km radius of the study area; **WN** = Queensland Department of Environment and Resource Management WildNet database search within a 1 km radius of the study area; **BAAM** = BAAM (2014, 2015) surveys; **E** = Endangered; **V** = Vulnerable; **NT** = Near Threatened; **M** = Migratory; **S** = Special Least Concern (Migratory or culturally significant); **LC** = Least Concern; **Sig** = RCC Significant; **X** = species occurrence predicted (PM or QM).

Species	Common name	EPBC	NCA	PM	WN	BAAM	Habitat characteristics	Likelihood of occurrence
<i>Arthraxon hispidus</i>	Hairy Joint Grass	V	V	X			Edges of rainforest and in wet eucalypt forest, often near creeks or swamps.	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.
<i>Baloghia marmorata</i>	Marbled Balogia			X			Subtropical rainforest/notophyll vine forest and wet sclerophyll forest (brush box woodland) with rainforest understorey between 150 and 550 m above sea level (Commonwealth of Australia 2017).	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.
<i>Bosistoa transversa</i>	Three-leaved Bosistoa			X			Lowland subtropical rainforest up to 300 m above sea level (Commonwealth of Australia 2017).	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.
<i>Corchorus cunninghamii</i>	Native Jute			X			Occurs in the ecotone of wet sclerophyll forest and dry to dry-subtropical rainforest (e.g. araucarian microphyll vine forest),	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.

							and in Hoop Pine ( <i>Araucaria cunninghamii</i> ) plantations. Often occurs on hill crests, exposed slopes, ridges or upper slopes of hilly terrain on south or south-east aspect. It also occurs on sheltered slopes, gullies and on lower slopes, depending on the topographic position of the sclerophyll-rainforest margin (Commonwealth of Australia 2017).	
<i>Cryptocarya foetida</i>	Stinking Laurel	V	V	X			Littoral rainforest on old sand dunes and subtropical rainforests over slate and occasionally on basalt (Commonwealth of Australia 2017).	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.
<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	V	LC	X			In south-east Queensland occurs in wet heath on sandy soils (Commonwealth of Australia 2017).	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.
<i>Macadamia integrifolia</i>	Macadamia Nut	V	V	X			Subtropical rainforest, preferring well-drained sites on hill crests, hill slopes, scree slopes, foot slopes and along the edges of hoop pine ( <i>Araucaria cunninghamii</i> ) scrubs and creek beds (SCC	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.

							2006)	
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut	V	V	X			Subtropical rainforest and notophyll vine forest in near coastal areas, often on steep slopes, especially at ecotones (TSSC 2008b).	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.
<i>Phaius australis</i>	Lesser Swamp Orchid	E	E	X			Coastal wet heath/sedgeland wetlands, swampy grassland or swampy forest (Commonwealth of Australia 2017).	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.
<i>Phaius bernaysii</i>	Yellow Swamp-orchid	E	E	X			The margins between open forest/woodland and closed sedgeland, along the perimeter of swamps, often in a fairly shady environment in Melaleuca quinquenervia–Eucalyptus robusta open forest in sandy or peaty soil (Commonwealth of Australia 2017).	Unlikely to occur as no suitable habitat is present and the species is currently known to occur only at one location on North Stradbroke Island.
<i>Samadera bidwillii</i>	Quassia	V	V	X			Lowland rainforest or rainforest margins; also open forest and woodland, adjacent to watercourses (Commonwealth of Australia 2017).	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.
<i>Thesium australe</i>	Austral Toadflax	V	V	X			Associated with a range of native grass species, particularly Kangaroo Grass ( <i>Themeda triandra</i> ) in shrubland,	Unlikely to occur as no suitable habitat is present and the species has not been recorded within 1 km of the study area.



							grassland or woodland, often on damp sites (Commonwealth of Australia 2017).	
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## **APPENDIX 4**

### **Migratory shorebird survey data**

**Table A4.1.** Low tide survey data for Toondah Harbour PDA (BAAM 2014, 2015).

Species	Common name	EPBC <sup>1</sup>	NCA <sup>2</sup>	31/10/2014	6/11/2014	26/12/2014	9/01/2015	24/02/2015	19/03/2015	18/06/2015
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit	V,M	S	32	6	33	27	9	30	
<i>Numenius phaeopus</i>	Whimbrel	M	S	6	13	15	19	12	16	
<i>Numenius madagascariensis</i>	Eastern Curlew	CE,M	V	4	2	7	4	4	1	
<i>Tringa brevipes</i>	Grey-tailed Tattler	M	S	88		60	41	55	91	
<i>Calidris tenuirostris</i>	Great Knot	CE,M	S			1				
<i>Calidris ruficollis</i>	Red-necked Stint	M	S					1		
<i>Xenus cinereus</i>	Terek Sandpiper	M	S	7		42		26		
Total migratory shorebirds				137	21	158	91	107	138	0
<i>Haematopus longirostris</i>	Australian Pied Oystercatcher		LC			2	20	43	20	3
<i>Vanellus miles</i>	Masked Lapwing		LC	3			17	4	8	6
Total resident shorebirds				3	0	2	37	47	28	9
<i>Anas castanea</i>	Chestnut Teal		LC			6				4
<i>Threskiornis molucca</i>	Australian White Ibis		LC	13		12	17	69	15	17
<i>Platalea regia</i>	Royal Spoonbill		LC	2		1	1		1	
<i>Butorides striatus</i>	Striated Heron		LC	1		1			1	2
<i>Ardea modesta</i>	Eastern Great Egret		LC	1		2	1	1		
<i>Egretta novaehollandiae</i>	White-faced Heron		LC	16		5	2	1	10	15
<i>Egretta garzetta</i>	Little Egret		LC	1		1		1	2	1
<i>Pelecanus conspicillatus</i>	Australian Pelican		LC	2						
<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant		LC			4		1	2	2
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant		LC	4						
<i>Anhinga novaehollandiae</i>	Australasian Darter		LC	1						1

Species	Common name	EPBC <sup>1</sup>	NCA <sup>2</sup>	31/10/2014	6/11/2014	26/12/2014	9/01/2015	24/02/2015	19/03/2015	18/06/2015
<i>Pandion cristatus</i>	Eastern Osprey	M	S					1		
<i>Chroicocephalus novaehollandiae</i>	Silver Gull		LC	3		3	3	10	5	6
<i>Gelochelidon nilotica</i>	Gull-billed Tern	M	S	3		1				4
<i>Hydroprogne caspia</i>	Caspian Tern	M	S			1				2
<i>Sternula albifrons</i>	Little Tern	M	S	1						
Total other waterbirds				48	0	37	24	84	36	54

<sup>1</sup> Status under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*: CE = critically endangered; M = migratory; V = vulnerable.

<sup>2</sup> Status under the Queensland *Nature Conservation Act 1992*: V = vulnerable; S = special least concern (migratory).

**Table A4.2.** High tide survey data for Nandeebie Claypan roost site (BAAM 2014, 2015).

Species	Common name	EPBC	NCA	30/10/2014	31/10/2014	5/11/2014	6/11/2014	21/11/2014	25/11/2014	26/11/2014	27/11/2014	8/12/2014	9/12/2014	6/01/2015	8/01/2015	16/02/2015	16/02/2015	3/03/2015	20/03/2015	18/06/2015
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit	V,M	S					43							1026	730	932	841		
<i>Numenius phaeopus</i>	Whimbrel	M	S	5			1			103	2	23				124				
<i>Numenius madagascariensis</i>	Eastern Curlew	CE,M	V	14	6		1	6	1	2	2	2	1	1	34	45	2	36		
<i>Calidris tenuirostris</i>	Great Knot	CE,M	S													1	11	5		
Total migratory shorebirds				19	6	0	2	49	1	105	4	25	1	1	1060	900	945	882	0	0
<i>Burhinus grallarius</i>	Bush Stone-Curlew		LC					3	2	2	1		2							
<i>Himantopus himantopus</i>	Black-winged Stilt		LC					29	32	34	30	36	25		7					
<i>Vanellus miles</i>	Masked Lapwing		LC											15		2		2	3	
Total resident shorebirds				0	0	0	0	32	34	36	31	36	27	15	7	2	0	2	3	0
<i>Threskiornis molucca</i>	Australian White Ibis		LC					10	3	2	2		2	10		1		10	2	4

Species	Common name	EPBC	NCA	30/10/2014	31/10/2014	5/11/2014	6/11/2014	21/11/2014	25/11/2014	26/11/2014	27/11/2014	8/12/2014	9/12/2014	6/01/2015	8/01/2015	16/02/2015	16/02/2015	3/03/2015	20/03/2015	18/06/2015
<i>Egretta novaehollandiae</i>	White-faced Heron		LC					17	8	8	11	13	11	2	1				6	30
<i>Egretta garzetta</i>	Little Egret		LC					1											1	
<i>Chroicocephalus novaehollandiae</i>	Silver Gull		LC														4			
Total other waterbirds				0	0	0	0	28	11	10	13	13	13	12	1	1	4	10	9	34

**Table A4.3.** High tide survey data for Cassim Island roost site (BAAM 2014, 2015).

Species	Common name	EPBC	NCA	6/11/2014	9/01/2015	16/02/2015	19/03/2015	18/06/2015
<i>Numenius phaeopus</i>	Whimbrel	M	S	184	270	160	140	
<i>Tringa brevipes</i>	Grey-tailed Tattler	M	S	215	600	570	460	
<i>Arenaria interpres</i>	Ruddy Turnstone	M	S	10	20	50	26	
<i>Xenus cinereus</i>	Terek Sandpiper	M	S	8	30	30	22	
<i>Butorides striatus</i>	Striated Heron							1
<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant							1
<i>Phalacrocorax varius</i>	Pied Cormorant							1
<b>Total</b>				<b>417</b>	<b>920</b>	<b>810</b>	<b>648</b>	<b>3</b>

**Table A4.3.** Engraved leg flag combinations observed on Bar-tailed Godwits utilising the Nandeebie Claypan roost site (BAAM 2014, 2015).

Flagged leg	Flag colour	Flag combination	Flagged leg	Flag colour	Flag combination	Flagged leg	Flag colour	Flag combination
Right tibia	Green	ADV	Right tibia	Green	BAX	Right tibia	Orange	CHH
Right tibia	Green	ADW	Right tibia	Green	BBA	Right tibia	Green	DZ
Right tibia	Green	ADY	Right tibia	Green	BBD	Right tibia	Green	EH

Flagged leg	Flag colour	Flag combination	Flagged leg	Flag colour	Flag combination	Flagged leg	Flag colour	Flag combination
Right tibia	Green	AKV	Right tibia	Green	BC	Right tibia	Green	EN
Right tibia	Green	AKW	Right tibia	Green	BCB	Right tibia	Green	ET
Right tibia	Green	ALL	Right tibia	Green	BJN	Right tibia	Green	FA
Right tibia	Green	AND	Right tibia	Green	BJP	Right tibia	Green	FJ
Right tibia	Green	ANJ	Right tibia	Green	BKH	Right tibia	Green	FK
Right tibia	Green	ANP	Right tibia	Green	BKM	Right tibia	Green	FL
Right tibia	Green	ANU	Right tibia	Green	BM	Right tibia	Green	FM
Right tibia	Green	ANW	Right tibia	Green	BNZ	Right tibia	Green	FZ
Right tibia	Green	ANX	Right tibia	Green	BPU	Right tibia	Green	HA
Right tibia	Green	APB	Right tibia	Green	BRN	Right tibia	Green	JE
Right tibia	Green	APJ	Right tibia	Green	BRP	Right tibia	Green	JR
Right tibia	Green	APK	Right tibia	Green	BRS	Right tibia	Green	KN
Right tibia	Green	APU	Right tibia	Green	BRT	Right tibia	Green	NC
Right tibia	Green	AXU	Right tibia	Green	BRU	Right tibia	Green	NK
Right tibia	Green	AZS	Right tibia	Green	BRV	Right tibia	Green	NU
Right tibia	Green	AZT	Right tibia	Green	BRX	Right tibia	Green	NV
Right tibia	Green	AZU	Right tibia	Green	BRY	Right tibia	Green	NZ
Right tibia	Green	BAA	Right tibia	Green	BTB	Right tibia	Green	PM
Right tibia	Green	BAE	Right tibia	Green	BTK	Right tibia	Green	PV
Right tibia	Green	BAK	Right tibia	Green	BTL	Right tibia	Green	PX
Right tibia	Green	BAN	Right tibia	Green	BTT	Right tibia	Green	PY
Right tibia	Green	BAP	Right tibia	Green	BTY	Right tibia	Green	RM
Right tibia	Green	BAV	Right tibia	Green	BUD	Right tibia	Green	RP
Right tibia	Green	BAW	Right tibia	Green	BUH	Right tibia	Green	RR
						Right tibia	Green	RY

**Table A4.2.** Survey times in relation to the tides and weather conditions during the surveys at each of the survey sites.

Site	Date	Tide ht (m)	Tide time	Start time	End time	Cloud <sup>1</sup>	Rain <sup>1</sup>	Wind strength <sup>1</sup>	Disturbance observations	Comments
<b>High tide</b>										
Nandeebie	30/10/2014	2.2	14:20	15:00	15:10	0	0	2	No external disturbance	
Nandeebie	31/10/2014	2.2	15:27	15:25	15:35	1	0	3	No external disturbance	
Nandeebie	5/11/2014	2.3	8:49	8:20	8:30	1	0	1	No external disturbance	
Nandeebie	6/11/2014	2.4	9:05	9:30	9:45	0	0	1	No external disturbance	Whole of pan/saltmarsh flooded. Flock of shorebirds seen flying into pan prior to survey, but these had disappeared by the time the survey was conducted.
Nandeebie	21/11/2014	2.3	8:49	8:10	8:20	4	0	2	No external disturbance	Whole of pan/saltmarsh flooded. Godwits standing in water.
Nandeebie	25/11/2014	2.5	11:35	11:35	11:45	0	0	3	No external disturbance	Whole of pan/saltmarsh flooded.
Nandeebie	26/11/2014	2.4	12:20	12:45	13:10	0	0	3	No external disturbance	Whole of pan/saltmarsh flooded. Whimbrels standing in water, some bathing.
Nandeebie	27/11/2014	2.3	13:10	13:10	13:25	0	0	3	No external disturbance	Most of pan/saltmarsh flooded.
Nandeebie	8/12/2014	2.5	10:50	11:00	11:15	0	0	3	No external disturbance	Whole of pan/saltmarsh flooded.
Nandeebie	9/12/2014	2.4	11:26	11:45	11:55	0	0	2	No external disturbance	Most of pan/saltmarsh flooded.
Nandeebie	6/01/2015	2.5	10:30	10:35	10:45	2	0	5	No external disturbance	Whole of pan/saltmarsh flooded.
Nandeebie	8/01/2015	2.4	11:36	11:10	11:30	3	0	2	No external disturbance	Whole of pan/saltmarsh flooded.
Nandeebie	16/02/2015	2.4	7:37	8:30	9:00	1	0	2	No external disturbance	
Nandeebie	3/03/2015	2.3	8:29	9:00	9:25	1	0	3	No external disturbance	
Nandeebie	20/03/2015	1.6	9:40	9:30	9:40	4	0	1	No external disturbance	
Nandeebie	18/06/2015	1.9	10:48	11:10	11:15	0	0	1	No external disturbance	
Cassim Isl	6/11/2014	2.4	9:05	8:20	9:05	0	0	1	White-bellied Sea-eagle overflight	Sea-Eagle caused most Whimbrel to fly up and circle the mangroves, which facilitated count.
Cassim Isl	9/01/2015	2.3	12:08	11:15	11:45	4	1	3	No external disturbance	Short rain shower during survey did not affect survey
Cassim Isl	16/02/2015	2.4	7:37	7:55	8:20	1	0	2	No external disturbance	

Site	Date	Tide ht (m)	Tide time	Start time	End time	Cloud <sup>1</sup>	Rain <sup>1</sup>	Wind strength <sup>1</sup>	Disturbance observations	Comments
Cassim Isl	19/03/2015	2.6	8:53	10:10	10:45	0	0	3	No external disturbance	
Cassim Isl	18/06/2015	1.9	10:48	11:30	12:10	0	0	1	No external disturbance	
<b>Low tide</b>										
Toondah	31/10/2014	0.6	8:51	9:00	9:40	0	0	3	No external disturbance	Boats active at ferry terminal only; all birds except 7 Terek Sandpiper, 3 ibis & 1 darter north of ferry channel; 1 person at shoreline edge at GJ Walter Park.
Toondah	26/12/2014	0.4	6:30	6:10	7:00	4	0	2	No external disturbance	
Toondah	9/01/2015	0.5	5:46	5:10	5:40	1	0	1	No external disturbance	Birds south of ferry terminal: 4 B-t Godwit, 1 E Curlew, 2 Whimbrel, 42 Terek Sandpiper, 2 A Pied Oystercatcher, 2 Silver Gull
Toondah	24/02/2015	0.6	7:53	8:40	9:00	2	0	4	No external disturbance	Birds south of ferry terminal: 3 whimbrel, 1 Bar-tailed Godwit
Toondah	19/03/2015	0.3	15:33	16:00	16:30	0	0	3	No external disturbance	Birds south of ferry terminal: 26 Terek Sandpiper, 2 Whimbrel, 1 Red-necked Stint; 2 Silver Gull; 1 person at shoreline edge at GJ Walter Park
Toondah	18/06/2015	0.4	16:48	16:20	16:35	1	0	1	No external disturbance	Birds S of ferry terminal: 1 Whimbrel, 1 B-t Godwit, 1 Silver Gull; 2 people at shoreline edge at GJ Walter Park