

# Native Vegetation Clearing Referral Gladstone Street (Lease Road) Site Inspection Report

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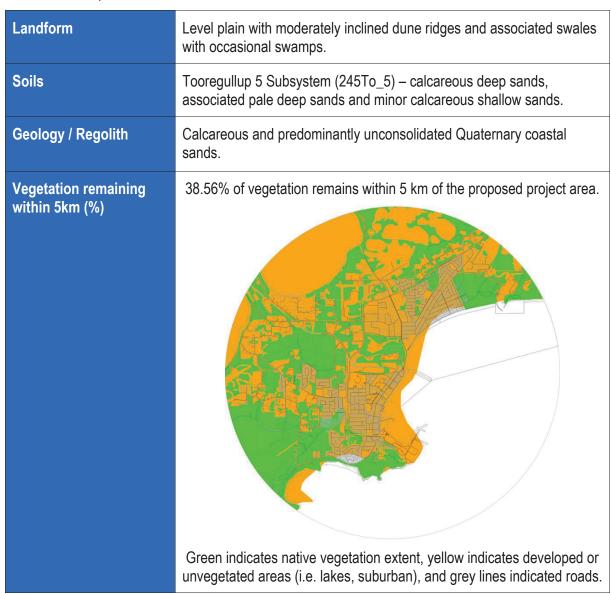
### Introduction

The Shire of Esperance (SOE) has proposed to clear approximately 0.10 ha of native vegetation located within the undeveloped Gladstone Street (Lease Road) road reserve from SLK 0.13 to 0.27, with an additional 40 m along the road reserve with unallocated SLK (Main Roads, 2024). Native vegetation is proposed to be cleared for the relocation of Horizon Power infrastructure, which may therefore have an exemption under Schedule 6 -1. Refer to Figure 1 for a map of the proposed area.

# **Desktop Summary**

Prior to the site inspection, the Shire of Esperance's Desktop Environmental Impacts Spatial Interrogation Program (DEISIP) was utilised to conduct a comprehensive desktop search for an area encompassing a 20 km radius of the proposed Gladstone Street (Lease Road) clearing site. This program consults numerous Local, State and Federal government spatial data sets to provide valuable environmental, heritage and other relevant information required in the assessment of the project against the ten clearing principles for native vegetation, regulated under Schedule 5 of the *Environmental Protection Act 1986* (EPA 1986).

Table 2. Desktop search results.



Threatened and Priority flora (Appendix 1)	Forty-four PF and no TF were recorded within 20 km of the Gladstone Street (Lease Road) project.					
Threatened Ecological	Two TEC / PECs were identified as occurring within 20 km of the site:					
Communities (Appendix 3)	<ul> <li>EN / P3 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan)' TEC / PEC; and</li> </ul>					
	VU / P3 'Subtropical and Temperate Coastal Saltmarsh (Coastal Saltmarsh)' TEC / PEC.					
Threatened and Priority fauna (Appendix 2)	Thirty-nine conservation-listed terrestrial and freshwater species were recorded within 20 km of the Reserve, of which five are considered likely or possible to occur.					
	Seven known roosting sites for the Carnaby's black cockatoo are kr to occur within a 20 km radius of the site.					
Closest conservation reserve	Lake Warden Nature Reserve is the closest conservation reserve to the site, located 3.26 km to the north.					
Aboriginal heritage	The closest Registered Aboriginal Heritage site to the proposed project area is the Cannery Waterhole, which is located 0.45 km from the site. This site is significant to the Kepa Kurl Wudjari for its historical, water source and campsite values.					

The proposed Gladstone Street (Lease Road) site is mapped as forming a component of one Beard Vegetation System Association (VSA), namely Fanny Cove 42. This VSA has been lightly cleared statewide, with approximately 94.63% of the pre-European extent remaining, and over 94% retained within the Shire of Esperance. According to 2018 data, the Fanny Cove 42 VSA is adequately conserved within the IUCN CAR reserve system, with over 64% conserved in conservation tenure.

**Table 1.** Quantitative statistics for current extent of pre-European Beard Vegetation System Associations within the proposed Gladstone Street (Lease Road) development site.

Vegetation System Association	Fanny Cove 42
Description	Shrublands; mallee (Eucalyptus angulosa) and Acacia scrub on south coastal dunes.
Pre-European extent remaining within the Shire of Esperance	94.87%
Pre-European extent remaining within the Recherche IBRA Sub-region	95.82%
Pre-European extent in land protected for conservation	64.03%

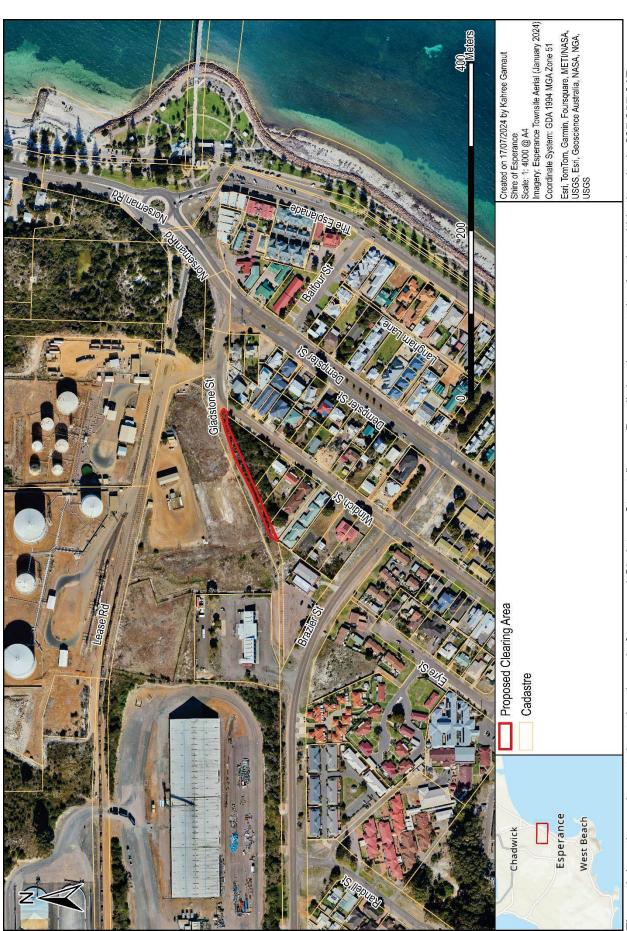


Figure 1. Location and vegetation to be cleared of proposed Gladstone Street (Lease Road) development site. A point within the site is 397,957.04E, 6,253,602.25N m, GDA94, Zone 51.

# **Site Inspection**

A site inspection was conducted by Julie Waters (Environmental Coordinator) and Kahree Garnaut (Environmental Officer) of the Shire of Esperance on the 16<sup>th</sup> of July 2024. The site was characterised by gentle inclines of semi-developed coastal dunes of limestone sands, and the fringes of a small block of remnant coastal scrub that was heavily infested by the weed, *Gaudium laevigatum*.

### **Vegetation Type**

Approximately 0.10 ha of native vegetation was present within the project site, which was classified during the site inspection into one distinct vegetation type:

A. Acacia cyclops and Acacia saligna shrubland over Spyridium globulosum, Acacia cochlearis and Templetonia retusa scrub on coastal dunes.

### NVIS L5 description:

U^^ Acacia cyclops, Acacia saligna\^tall shrubs\5\c; M^ Spyridium globulosum, Acacia cochlearis, Templetonia retusa\^medium shrubs\3\c; G^ Rhagodia baccata, Clematis pubescens, Dianella brevicaulis\^low shrubs, vines, sedges\2\c.

Based on observations of the same vegetation type in Good or better condition in adjacent areas, the original overstorey would have included *Eucalyptus angulosa*, and therefore the observed native vegetation was congruent with the description for the Fanny Cove 42 VSA.

### **Vegetation Condition**

Vegetation condition varied between Completely Degraded to Degraded condition (Keighery 1994), with the majority (0.07 ha) in Degraded condition. Primary causes of degradation observed to be afflicting the site were invasion by and establishment of environmental weeds, notably Victorian Tea Tree (*Gaudium laevigatum*), and the two Weeds of National Significance (WONS) / Declared Pests (DPs), African Boxthorn (*Lycium ferocissimum*) and Bridal Creeper (*Asparagus asparagoides*). The high surface area of the remnant exposed to cleared areas burdened with agricultural weeds and unmanaged naturalising garden escapees such as *Schinus terebinthifolius*, as well as historical clearing has pre-disposed the site to weed invasion. Refer to Figure 2 for the map of vegetation type and condition across the project site, and Table 2 below for the quantitative distribution of vegetation condition.

**Table 2:** Quantitative distribution of vegetation condition by vegetation type within the proposed Lease Road development site.

Vegetation Type	Completely Degraded	Degraded	Good	Very Good	Excellent	Total
Α	0.03	0.07	-	-	-	0.10 ha

### **Threatened and Priority Ecological Communities**

The Kwongkan TEC / PEC, listed as EN under the EPBC Act and P3 under the BC Act, was determined in the desktop assessment to be likely to occur within the proposed Gladstone Street (Lease Road) site due to the close proximity of a known occurrence (within 170 m). However, the vegetation type observed lacked representation by Proteaceous species, and existed in either a Completely Degraded or Degraded condition. No other TECs or PECs were recognised as being resembled by any of the distinguished vegetation types, including the Coastal Saltmarsh TEC / PEC which was detected in the desktop assessment as occurring 4.23 km from the site near Bandy Creek.



Figure 2. Vegetation type and condition within proposed Gladstone Street (Lease Road) development site.

Site Inspection Report - Native Vegetation Clearing Referral - Gladstone Street (Lease Road)

### Flora

During the field survey, a total of 28 floral taxa were identified, of which eight were native, non-threatened flora and 20 were exotic or invasive weed species, including two non-endemic Australian native species, the Norfolk Island Hibiscus (*Lagunaria patersonia*) and the Peppermint Tree (*Agonis flexuosa*). *Agonis flexuosa* is naturalising throughout coastal vegetation across the Recherche IBRA subregion.

Problematic environmental weeds noted to occur within the proposed Gladstone Street (Lease Road) development site included the two WONS / DPs, *Lycium ferocissimum* (African Boxthorn) and *Asparagus asparagoides* (Bridal Creeper), both of which produce red berries that are highly attractive to foraging bush birds, which spread the viable seeds in their droppings. These two WONS / DPs were observed to be in a relatively early stage of infestation, with the shrubs or vines small in stature and not yet reproductive. It is imperative that these plants are treated promptly to discourage the establishment and spread of these destructive environmental weeds. The Victorian Tea Tree (*Gaudium laevigatum*) is the most prevalent and environmentally-destructive species at present at the site, with several specimens exceeding 6 m in height, dominating the overstorey and reproducing prolifically. This large invasive shrub, which produces leaf litter secreting allelopathic chemicals that prevent native species from germinating, has created monocultures across the Esperance sandplains, and is a priority environmental weed under the Shire of Esperance *Environmental Weed Strategy 2009 – 2018* (Field, 2008).

Other key environmental weeds prioritized under the *Shire of Esperance Environmental Weed Strategy* 2009 – 2018 impacting the vegetation condition at the site include *Schinus terebinthifolius* (Brazilian Pepper tree), *Polygala myrtifolia* (Myrtle-leaf Milkwort) and *Gazania linearis* (Treasure Flower).

A full species list is presented in Table 3. No TF or PF identified in the desktop assessment were detected, and a post-survey likelihood of occurrence assessment indicated no species were likely to occur due to lack of suitable habitat and no significant limitations to the species' detectability.

**Table 3.** Incidental list of flora species within proposed Lease Road development site.

Family	Species	Common Name	Exotic
Anacardiaceae	Schinus terebithifolius	Brazilian Peppertree	*
Asparagaceae	Asparagus asparagoides	Bridal Creeper	* WONS / DP
Asteraceae	Erigeron bonariensis	Tall Fleabane	*
Asteraceae	Gazania linearis	Treasure Flower	*
Asteraceae	Osteospermum ecklonis	Cape Daisy	*
Brassicaceae	Raphanus raphanistrum	Wild Radish	*
Chenopodiaceae	Rhagodia baccata	Berry Saltbush	
Euphorbiaceae	Euphorbia terracina	Geraldton Carnation Weed	*
Fabaceae	Acacia cochlearis	Rigid Wattle	
Fabaceae	Acacia saligna	Orange Wattle	
Fabaceae	Medicargo polymorpha	Burr Medic	*
Fabaceae	Templetonia retusa	Cockies Tongue	
Geraniaceae	Pelargonium capitatum	Rose Pelargonium	*
Hemerocallidaceae	Dianella brevicaulis	Coast Flax-lily	
Malvaceae	Lagunaria patersonia	Norfolk Island Hibiscus	*
Myrtaceae	Agonis flexuosa	Peppermint Tree	*
Myrtaceae	Gaudium laevigatum	Victorian Tea Tree	*
Orchidaceae	Disa bracteata	South African Orchid	*
Oxalidae	Oxalis pes-caprae	Soursob	*

Family	Species	Common Name	Exotic
Papaveraceae	Fumaria capreolata	Whiteflower Fumitory	*
Poaceae	Cynodon dactylon	Couch Grass	*
Poaceae	Ehrharta longiflora	Annual Veldt Grass	*
Poaceae	Eragrostis curvula	African Lovegrass	*
Poaceae	Stenotaphrum secundatum	Buffalo Grass	*
Polygalaceae	Polygala myrtifolia	Myrtle-leaf Milkwort	*
Ranunculaceae	Clematis pubescens	Old Man's Beard	
Rhamnaceae	Spyridium globulosum	Basket Bush	
Solanaceae	Lycium ferocissimum	African Boxthorn	* WONS / DP

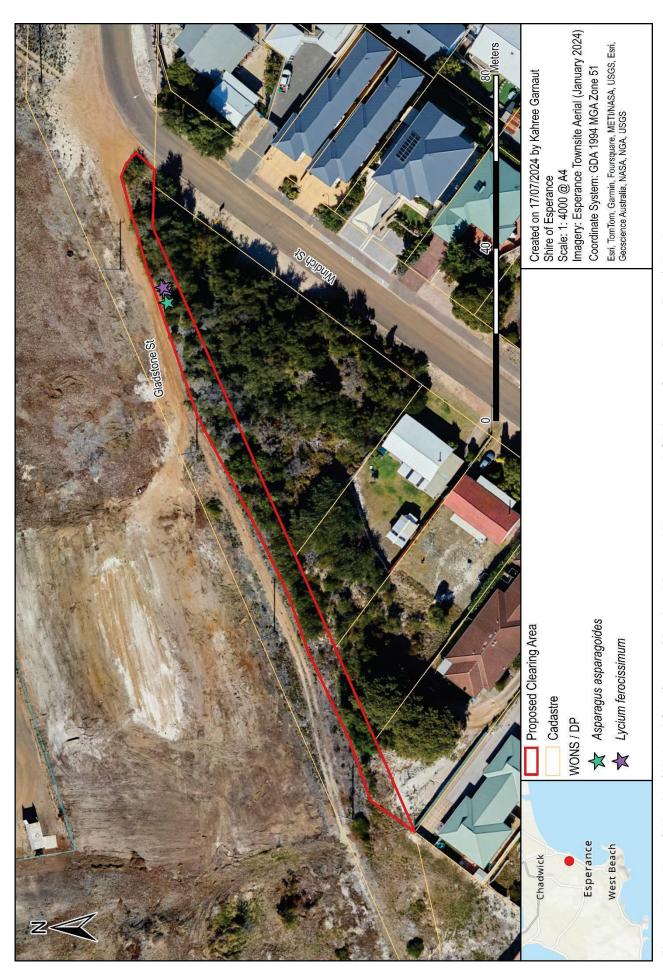


Figure 3. Location of Weeds of National Significance / Declared Pests within proposed Gladstone Street (Lease Road) clearing area.

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### Fauna

A total of twelve faunal taxa were directly or indirectly determined to be present within the proposed Gladstone Street (Lease Road) clearing area. Of these, seven were native, non-threatened species, consisting entirely of birds. The remaining five species were all introduced, including the European rabbit (*Oryctolagus cuniculus*), which was detected via the observation of scats. Under the BAM Act, the European rabbit is a Declared Pest, and the laughing dove, white Italian snail, cabbage white butterfly, and European honeybee are Permitted under Schedule 11. Refer to Table 4 for the incidental fauna list.

Class	Family	Taxon	Common Name	Introduced
Aves	Acanthizidae	Sericornis frontalis	White-browed scrubwren or koorkal	
		Acanthiza chrysorrhoa	Yellow-rumped thornbill or miyamit	
	Zosteropidae	Zosterops lateralis chloronatus	Western silvereye	
	Columbidae	Ocyphaps lophotes	Crested pigeon	
		Spilopelia senegalensis	Laughing dove	*
	Cuculidae	Chrysococcyx lucidus	Shining bronze cuckoo	
	Hirundinidae	Petrochelidon nigricans	Tree martin	
	Meliphagidae	Phylidonyris novaehollandiae	New Holland honeyeater	
Mammalia	Leporidae	Oryctolagus cuniculus	European rabbit	*
Mollusca	Helicidae	Theba pisana	White Italian snail	*
Insecta	Pieridae	Pieris rapae	Cabbage white butterfly	*
	Apidae	Apis mellifera	European honeybee	*

During the site inspection, an assessment of the suitability of existing vegetation for providing habitat for conservation-significant species considered likely or possible to occur in the pre-survey LOO was undertaken. Based on field observations, the highly-degraded native vegetation does not provide high-quality habitat for any conservation-listed species, and provides marginal, low-quality habitat for the Carnaby's black cockatoo (*Zanda latirostris*, EN / EN), Recherche Cape Barren goose (*Cereopsis novaehollandiae grisea*, VU / VU), Quenda (*Isoodon obesulus fusciventer*, P4), and Peregrine falcon (*Falco peregrinus*, OS). Therefore, the remnant was not considered to constitute significant habitat for any threatened or priority-listed fauna.

The Recherche Cape Barren goose most likely utilises the cleared areas adjacent to the vegetation remnant for grazing on the available grasses and herbs during the non-breeding season (summer and autumn); therefore, the vegetation does not form significant habitat. The Carnaby's black cockatoo may opportunistically forage on the *Acacia cyclops* seed pods whilst moving between remnants of high-quality foraging habitat and nearby roosts (the closest of which is 1.67 km from the site).

Marginal habitat is offered for the Quenda; however, the abundance of rabbit activity signs suggests that a high level of competition may be experienced for foraging and shelter resources. Quenda most likely persist in adjoining areas of native coastal dune vegetation where ground cover and fungal activity is higher, and where dune swales are present. The high surface area to volume ratio of the remnant also suggests that Quenda using this remnant would be highly susceptible to disturbance by dogs, and predation by feral foxes and roaming domestic cats.

## **Photos**

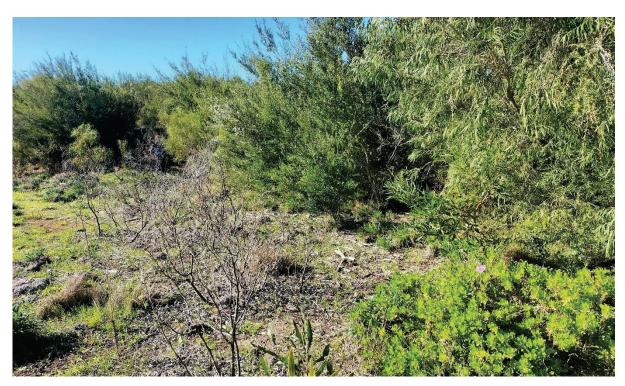
All photos were taken by Shire of Esperance Environmental Officer, Kahree Garnaut, on the 16th of July 2024.



Figure 3. The WONS / DP Asparagus asparagoides infesting a native shrub, Rhagodia baccata.



**Figure 4.** Several of the WONS / DP *Lycium ferocissimum* establishing within the strip of Degraded vegetation.



**Figure 5.** Completely Degraded area of vegetation dominated by *Agonis flexuosa, Gaudium laevigatum,* Osteospermum ecklonis, and exotic grasses such as *Cynodon dactylon, Stenotaphrum secundatum,* and *Ehrharta longiflora*.



**Figure 6.** Large established *Gaudium laevigatum* (some over 6 m tall) forming a monoculture in the overstorey, with several establishing *Gaudium laevigatum*, *Schinus terebinthifolius*, *Pelargonium capitatum* and *Gazania linearis* in the foreground. Several *Acacia saligna and A. cochlearis* persist in the mid-storey.



**Figure 7.** Some native flora, *Acacia saligna, A. cochlearis* and *A. cyclops* persisting on the fringe of vegetation where *Gaudium laevigatum* had not yet formed a monoculture. The understorey remains bare or sparsely populated by *Gazania linearis*, *Pelargonium capitatum*, *Medicargo polymorpha*, and exotic annual grasses.



**Figure 8.** Dumped mattress beneath *Gaudium laevigatum* thicket. Other litter and rubbish such as Powerade bottles, soft drink cans and food wrappers were scattered through the site.

### References

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- Thackway R. and Cresswell I.D. (1995) Eds. *An Interim Biogeographic Regionalisation for Australia: A framework for establishing the national system of reserves.* Version 4.0 Australian Nature Conservation Agency, Canberra ACT.

# **Appendix 1: Threatened and Priority Flora Desktop Survey**

Data provided by Department of Biodiversity, Conservation and Attractions (DBCA) and Western Australian Herbarium in May 2022 was used to assess threatened flora (TF), priority flora (PF), and threatened (TEC) and priority (PEC) ecological communities within 20 km radius of the site. Specifically, spatial data included;

- WAHerb extract (DBCA 2022).
- o Threatened and Priority Reporting (TPFL; DBCA 2022).
- o Esperance District Threatened Flora (DBCA 2022).

Taxon	WA Status	Distance (km)
Banksia prolata subsp. calcicola	P4	1.14
Cyathostemon sp. Esperance (A. Fairall 2431)	P1	1.14
Hopkinsia adscendens	P3	1.14
Lepidium fasciculatum	P3	1.14
Leucopogon corymbiformis	P2	1.22
Eucalyptus x missilis	P4	1.51
Pityrodia chrysocalyx	P3	1.52
Grevillea baxteri	P4	2.50
Carpobrotus sp. Lateral Flowers (N. Gibson & M. Lyons 973)	P2	2.65
Corysanthes limpida	P4	2.88
Styphelia rotundifolia	P3	5.03
Hibbertia carinata	P1	6.61
Myriophyllum muelleri	P2	7.03
Austrobaeckea uncinella	P3	7.60
Tecticornia indefessa	P2	8.10
Daviesia pauciflora	P3	8.15
Hibbertia turleyana	P2	8.26
Eucalyptus semiglobosa	P3	9.12
Comesperma calcicola	P3	9.23
Dampiera sericantha	P3	9.96
Adelphacme minima	P3	10.48
Galium leptogonium	P3	11.71
Kennedia beckxiana	P4	11.79
Austrostipa mundula	P3	12.41
Eucalyptus foliosa	P3	13.91
Paracaleana parvula	P2	15.60
Leucopogon apiculatus	P3	15.92
Goodenia quadrilocularis	P2	15.96
Dampiera decurrens	P2	16.11
Eucalyptus insularis subsp. insularis	P4	16.23
Myosotis australis subsp. australis	P4	16.30
Comesperma griffinii	P2	16.52
Persoonia scabra	P3	16.54

Taxon	WA Status	Distance (km)
Kunzea salina	P3	16.59
Schoenus sp. Grey Rhizome (K.L. Wilson 2922)	P1	16.64
Eucalyptus famelica	P3	16.93
Dampiera triloba	P3	17.06
Goodenia exigua	P2	17.58
Astartea reticulata	P3	17.60
Gonocarpus pycnostachyus	P3	17.60
Eucalyptus preissiana subsp. lobata	P4	19.00
Lobelia archeri	P1	19.16
Leucopogon interruptus	P3	19.60
Brachyloma mogin	P3	19.99

# **Appendix 2: Threatened and Priority Fauna Desktop Survey**

Assessment of Threatened and Priority fauna potentially occurring within 20 km of the site was conducted utilising the following sources:

- o DBCA Threatened Fauna database (DBCA 2023x);
- o EPBC Act 1986 PMST (DCCEEW, 2023).

Scientific Name	Common Name	WA	EPBC	Distance	Suitable	Verdict
		Status	ACT Status	(km)	habitat? Y / N	
Zanda latirostris	Carnaby's black cockatoo	EN	EN	0.34	Y - marginal	Likely
Cereopsis novaehollandiae grisea	Recherche Cape Barren goose	VU	VU	0.44	Y - marginal	Likely; marginal summer foraging habitat.
Isoodon obesulus fusciventer	Quenda, southwestern brown bandicoot	P4		6.99	Y - marginal	Likely; marginal foraging habitat.
Falco peregrinus	Peregrine falcon	OS		5.51	Y - marginal	Possible; marginal hunting habitat.
Pandion haliaetus	Osprey	MI	MI	16.49	N	Possible; fly-over.
Hydroprogne caspia	Caspian tern	MI	MI	0.37	N	Unlikely
Thalasseus bergii	Crested tern	MI	MI	0.38	N	Unlikely
Tringa nebularia	Common greenshank	MI	MI	0.38	N	Unlikely
Actitis hypoleucos	Common sandpiper	MI	MI	0.44	N	Unlikely
Notamacropus irma	Kwoora or western brush wallaby	P4		0.82	N	Unlikely; locally extinct
Thinornis cucullatus	Hooded plover	P4		1.23	N	Unlikely
Calidris acuminata	Sharp-tailed sandpiper	MI	MI	1.23	N	Unlikely
Pluvialis squatarola	Grey plover	MI	MI	1.27	N	Unlikely
Calidris ferruginea	Curlew sandpiper	CR	CR & MI	1.27	N	Unlikely
Calidris canutus rogersi	Red knot (subsp. rogersi)	EN	EN & MI	1.27	N	Unlikely
Apus pacificus	Fork-tailed swift	MI	MI	1.67	N	Unlikely
Acanthophis antarcticus	Southern death adder	P3		1.88	N	Unlikely
Calidris alba	Sanderling	MI	MI	1.88	N	Unlikely
Calidris ruficollis	Red-necked stint	MI	MI	3.35	N	Unlikely

Scientific Name	Common Name	WA Status	EPBC ACT Status	Distance (km)	Suitable habitat?	Verdict
Tringa glareola	Wood sandpiper	MI	MI	3.35	N	Unlikely
Tringa stagnatilis	Marsh sandpiper	MI	MI	4.12	N	Unlikely
Calidris canutus	Red knot	EN	EN & MI	4.12	N	Unlikely
Limosa lapponica	Bar-tailed godwit	MI	MI	4.12	N	Unlikely
Tringa brevipes	Grey-tailed tattler	MI & P4	MI	4.12	N	Unlikely
Calidris melanotos	Pectoral sandpiper	MI	MI	4.22	N	Unlikely
Oxyura australis	Blue-billed duck	P4		4.35	N	Unlikely
Leipoa ocellata	Malleefowl	VU	VU	4.37	N	Unlikely
Charadrius leschenaultii	Greater sand plover	VU	VU & MI	4.60	N	Unlikely
Plegadis falcinellus	Glossy ibis	MI	MI	5.21	N	Unlikely
Arenaria interpres	Ruddy turnstone	MI	MI	5.92	N	Unlikely
Calidris tenuirostris	Great knot	CR	CR & MI	5.92	N	Unlikely
Ardenna tenuirostris	Short-tailed shearwater	MI	MI	7.18	N	Unlikely
Numenius phaeopus	Whimbrel	MI	MI	7.18	N	Unlikely
Elanus scriptus	Letter-winged kite	P4		11.69	N	Unlikely
Atelomastix dendritica	Recherche atelomastix millipede	VU		13.38	N	Unlikely
Charadrius bicinctus	Double-banded plover	MI	MI	15.67	N	Unlikely
Charadrius mongolus	Lesser sand plover	EN	EN & MI	15.96	N	Unlikely
Pluvialis fulva	Pacific golden plover	MI	MI	15.96	N	Unlikely
Parantechinus apicalis	Dibbler	EN	EN	17.39	N	Unlikely

# **Appendix 3: Threatened and Priority Ecological Communities Desktop Survey**

Ecological Community	BC Act Status	EPBC Act Status	Record Distance (km)	Verdict
Proteaceae dominated kwongkan shrublands of the southeast coastal floristic province of Western Australia (Kwongkan)	Priority 3	Endangered	0.17	Absent
Subtropical and Temperate Coastal Saltmarsh (Coastal Saltmarsh)	Priority 3	Vulnerable	4.23	Absent