

PRELIMINARY DOCUMENTATION

ATTACHMENT T THREATENED SPECIES AND ECOLOGICAL COMMUNITIES LIKELIHOOD OF OCCURRENCE ASSESSMENT

(Updated following Protected Matter Search Tool, 30 June 2023 and BioNet Search, 29 June 2023)

Likelihood of occurrence assessment (species previously recorded or with high likelihood highlighted in blue)

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
KINGDOM: Animalia; CLASS: Amphibia							
<i>Heleioporus australiacus</i> Giant Burrowing Frog	BC Act: V EPBC Act: V	0	Species or its habitat likely to occur within 10 km	-	-	Unlikely	Not present – no records in locality; species has low potential for movement into the site from distant areas of occupation. A small area of potential aquatic habitat (ephemeral soaks or pools) is found in the south of the site adjacent to existing residential development and within the Bangalay Paperbark Swamp EEC. Nocturnal surveys, including recent survey over 10 nights and during wet weather conditions, detected five frog species by call recognition but did not detect this species on site or in the surrounding area (BES 2006; Ecoplanning 2020a). Nocturnal surveys were undertaken during the appropriate survey period (TBDC; DPIE 2022)
<i>Litoria aurea</i> Green and Golden Bell Frog	BC Act: E EPBC Act: V	3	Species or its habitat known to occur within 10 km	2.2 km (6/03/2008)	(2.7 km) 26/11/2009	Unlikely	Not present – no suitable aquatic (breeding) habitats are found within or in close proximity to the site; the only record from Manyana is in 1988, prior to Chytridiomycosis leading to local extinctions across Australia. The most recent proximate record is from Lake Conjola, separated from the site by a saline inlet which forms a barrier to movement. Nocturnal surveys, including recent survey during wet weather conditions, detected five frog species by call recognition but did not detect this species on site or in the surrounding area (BES 2006; Ecoplanning 2020a) Refer to: Ecoplanning (2022) <i>Preliminary Documentation Submission</i> Attachment J
<i>Litoria watsoni</i> Watson's Tree Frog	BC Act: E EPBC Act: E	0	Species or its habitat known to	-	-		Not present: - No records within the locality. A small area of potential aquatic habitat (ephemeral soaks or pools) is found in the south of the site adjacent to existing residential

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			occur within 10 km				development and within the Bangalay Paperbark Swamp EEC. Nocturnal surveys, including recent survey over 10 nights and during wet weather conditions, detected five frog species by call recognition but did not detect this species on site or in the surrounding area (BES 2006; Ecoplanning 2020a). This species was listed under the EPBC Act after the referral for EPBC 2020/8704 was submitted. Therefore, the EPBC Act does not require impacts on this species to be assessed and approved in relation to the proposed action.
<i>Mixophyes balbus</i> Stuttering Frog	BC Act: V EPBC Act: V	0	Species or its habitat may occur within 10 km	-	-	-	Not present – no records in locality; species has low potential for movement into the site from distant areas of occupation. No suitable aquatic habitats (streams) are found within the site. Nocturnal surveys, including recent survey over 10 nights and during wet weather conditions, detected five frog species by call recognition but did not detect this species on site or in the surrounding area (BES 2006; Ecoplanning 2020a).
KINGDOM: Animalia; CLASS: Aves							
<i>Actitis hypoleucos</i> Common Sandpiper	EPBC Act: M, N	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats. The proposed action will not significantly impact marine environments.
<i>Anous stolidus</i> Common Noddy	EPBC Act: M, N	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.

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<i>Anthochaera phrygia</i> Regent Honeyeater	BC Act: CE EPBC Act: CE	0	Species or its habitat known to occur within 10 km	-	-	Potential	Low – limited, sporadic occurrence in the South Coast of NSW and no records within the locality in the past 20 years. “Rich patches” of nectar-producing vegetation, such as large, productive winter flowering Eucalypt species such as Swamp Mahogany, Spotted Gum, Forest Red Gum, Ironbarks, or other species, which could potentially provide forage as a refuge when more suitable inland box-gum woodlands are in drought, do not occur on site. Coastal drought refuges known to be frequented are found in the Central Coast (ca. Lake Macquarie, Port Stephens, and further north). Winter foraging habitat preferences in coastal NSW are similar to the Swift Parrot, refer to: Ecoplanning (2022) <i>Preliminary Documentation Submission</i> Section 4; and, Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 9.
<i>Aphelocephala leucopsis</i> Southern Whiteface	EPBC Act: V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – no records within the locality in the past 20 years. Species favours habitats with low tree density in relatively undisturbed open woodland and shrublands. Targeted bird surveys did not record this species on site. This species was listed under the EPBC Act after the referral for EPBC 2020/8704 was submitted. Therefore, the EPBC Act does not require impacts on this species to be assessed and approved in relation to the proposed action.
<i>Apus pacificus</i> Fork-tailed Swift	EPBC Act: M, N	0	Species or species habitat likely to occur within 10 km	-	-	-	Low – species almost exclusively aerial and does not breed in Australia. Foraging for insects occurs aerially, mostly over inland plains, predominantly dry and open habitat. Foraging has been known to occur over coastal areas and occasionally over wet sclerophyll forest or open forest.

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<i>Ardenna carneipes</i> Flesh-footed Shearwater	EPBC Act: M, N	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Ardenna grisea</i> Sooty Shearwater	EPBC Act: M, N	2	Species or species habitat likely to occur within 10 km	2.7 km (25/01/2020)	6.1 km (27/02/2020)	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Ardenna pacifica</i> Wedge-tailed Shearwater	EPBC Act: M	4	-	0.7 km (16/10/2018)	2.3 km (10/12/2018)	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Ardenna tenuirostris</i> Short-tailed Shearwater	EPBC Act: M	8	-	1.2 km (04/11/2009)	7 km (29/02/2020)	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Arenaria interpres</i> Ruddy Turnstone	EPBC Act: M	2	-	0.6 km (30/10/2006)	2.1 km (03/01/2010)	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Artamus cyanopterus</i> Dusky Woodswallow	BC Act: V	5	-	0.6 km (05/12/2018)	1.5 km (19/08/2020)	-	Moderate – not recorded on site during previous fauna surveys (BES 2006), however preferred dry, eucalypt forest and woodland habitat is present on site and widespread in the surrounding region. Species can be resident year-round or migratory depending on location and local climate. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals utilizing the site at the time of clearing. Note: the species is not EPBC listed.

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<i>Botaurus poiciloptilus</i> Australasian Bittern	BC Act: E EPBC Act: E	1	Species or its habitat likely to occur within 10 km	2.4 km (22/03/2019)	2.4 km (22/03/2019)	-	Not present – no suitable aquatic habitats.
<i>Bubulcus ibis</i> Cattle Egret	EPBC Act: N	0	Species or its habitat may occur within 10 km				Not present – no suitable aquatic foraging habitats; breeding or nesting habitat.
<i>Calidris acuminata</i> Sharp-tailed Sandpiper	EPBC Act: M, N	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Calidris alba</i> Sanderling	BC Act = V EPBC Act = M	2	Species or its habitat known to occur within 10 km	1.2 km (04/11/2009)	1.5 km (24/11/2009)		Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Calidris canutus</i> Red Knot	EPBC Act: M, N, E	1	Species or its habitat known to occur within 10 km	2.9 km (26/12/2019)	2.9 km (26/12/2019)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Calidris ferruginea</i> Curlew Sandpiper	BC Act: E EPBC Act: M, N, CE	1	Species or its habitat likely to occur within 10 km	0.9 km (29/08/2020)	0.9 km (29/08/2020)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.

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<i>Calidris melanotos</i> Pectoral Sandpiper	EPBC Act: M, N	0	Species or its habitat likely to occur within 10 km	-	-	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Calidris ruficollis</i> Red-necked Stint	EPBC Act = M	4	Species or its habitat likely to occur within 10 km	1.2 km (12/03/2015)	1.2 km (12/03/2015)		Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo	EPBC Act: E (<i>listing in effect from 2 March 2022 and applies to referrals submitted after this date</i>) BC Act: V	38	-	0 km (06/07/2021)	0 km (06/07/2021)	Recorded	<p>Recorded – preferred autumn and winter habitat of lowland open eucalypt forest and woodland present on site. High number of individuals recorded within the locality. Species forages predominantly on seeds, including of eucalypt and acacia, which are found on site.</p> <p>This species was listed under the EPBC Act after the referral for EPBC 2020/8704 was submitted. Therefore, the EPBC Act does not require impacts on this species to be assessed and approved in relation to the proposed action.</p> <p>The impacts to this species resulting from the proposed action are anticipated to include removal of a portion of the available foraging habitat for any individuals in the Manyana area, and removal of hollow-bearing trees which could potentially be utilised for nesting, although the very few tree hollows on site fit the dimensions and height above ground preferred for nesting by this species.</p> <p>Two pairs were observed by Ecoplanning foraging in the site. There are an estimated 25,300 (range 17,600 – 35,200) mature individuals, with an extent of occurrence and area of occupancy estimated to be stable at 400,000 km² and 30,000 km² respectively (DAWE 2022).</p>

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<i>Calonectris leucomelas</i> Streaked Shearwater	EPBC Act: M, N	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Calyptorhynchus lathami</i> Glossy Black-cockatoo	BC Act: V EPBC Act: V (listed on 10 August 2022, after the controlled action decision)	37	-	0.2 km (21/06/2020)	7 km (11/05/2022)	Potential	High – potential coastal woodland and dry forest habitat present on site, with preferred <i>Allocasuarina</i> feed trees also present, though not as a dominant or abundant component of the canopy or midstorey. Nesting typically occurs in hollows > 15cm in diameter; several suitable hollows occur on site. A high number of individuals have been sighted within the locality. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts on any individuals occupying the site at the time of clearing.
<i>Charadrius leschenaultii</i> Greater Sand Plover	BC Act: V EPBC Act: V, M, N	0	Species or species habitat may occur within 10 km	-	-	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Climacteris picumnus victoriae</i> Brown Treecreeper (eastern subspecies)	BC Act: V EPBC: V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – species not the site does not contain open forest/ woodland habitat dominated by rough-barked eucalypt species which is preferred by this species. It generally occurs in the inland plains and slopes of the Great Dividing Range and is uncommon in coastal NSW, although recent sightings are known in the Jervis Bay area, after an absence of more than 20 years.

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<i>Cuculus optatus</i> Oriental Cuckoo	EPBC Act: M	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – Has a large breeding range in northern Eurasia. Migrates to Australia in summer.
<i>Daphoenositta chrysoptera</i> Varied Sittella	BC Act: V	9	-	0 km (5/09/2022)	0 km (5/09/2022)	-	Recorded – this species was observed on site in May 2020 and BioNet records for the species on site in September 2022. The site is likely utilized for foraging and potentially also nesting. Varied Sittellas are widely distributed in NSW from the coast to the far west and can be found in a broad range of eucalypt forest and woodland habitats. Note: the species is not EPBC listed.
<i>Dasyornis brachypterus</i> Eastern Bristlebird	BC Act: E EPBC Act: E	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – no dense heath habitats on site; limited potential for dispersal from distant areas of occupation (e.g., Booderee NP)
<i>Diomedea antipodensis</i> Antipodean Albatross	BC Act: V EPBC Act: M, N, V	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Diomedea antipodensis gibsoni</i> Gibson's Albatross	BC Act: V EPBC Act: N, V	1	Foraging, feeding or related behaviour likely to occur within 10 km	1 km (12/09/2006)	1 km (12/09/2006)	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.

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<i>Diomedea epomophora</i> Southern Royal Albatross	EPBC Act: M, N, V	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Diomedea exulans</i> Wandering Albatross	BC Act: E EPBC Act: M, N, V	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Diomedea sanfordi</i> Northern Royal Albatross	EPBC Act: M, N, E	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Esacus magnirostris</i> (Beach Stone-curlew)	BC Act: CE	1		5.8 km (13/12/2022)	5.8 km (13/12/2022)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats. Note: the species is not EPBC listed.
<i>Falco hypoleucos</i> Grey Falcon	BC Act: E EPBC Act: V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – occurs in arid regions in the interior of NSW, and occasionally open woodland habitats near the coast. The forest habitats on site are not suitable for this species.
<i>Fregetta grallaria</i> <i>grallaria</i> White-bellied Storm-	BC Act: V EPBC Act: V	0	Species or species habitat likely to occur	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.

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Petrel			within 10 km				
<i>Gallinago hardwickii</i> Latham's Snipe	EPBC Act: M, N	0	Species or its habitat likely to occur within 10 km	-	-	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Glossopsitta pusilla</i> Little Lorikeet	BC Act: V	22	-	0 km (21/04/2022)	0 km (21/04/2022)	-	Recorded – suitable foraging habitat of eucalypt blossom is found throughout the site. Small hollows suitable for nesting are also found on site. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts on any individuals occupying the site at the time of clearing. Note: the species is not EPBC listed.
<i>Grantiella picta</i> Painted Honeyeater	BC Act: V EPBC Act: V	0	Species or species habitat likely to occur within 10 km	-	-	-	Low – occurs on the inland slopes of the Great Dividing Range in Box-Gum Woodlands and Box-Ironbark Forests where it feeds on fruits of mistletoes. No suitable habitat is found on site.
<i>Haematopus fuliginosus</i> Sooty Oystercatcher	BC Act: V	35	-	0.6 km (30/10/2006)	2.6 km (18/11/2020)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats. The proposed action will not significantly impact marine environments. Note: the species is not EPBC listed.
<i>Haematopus longirostris</i> Pied Oystercatcher	BC Act: E	96	-	0.5 km (26/12/2019)	5.9 km (06/12/2020)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats. The proposed action will not significantly impact marine environments. Note: the species is not EPBC listed.
<i>Haliaeetus leucogaster</i> White-bellied Sea-	BC Act: V EPBC Act: N	60	Species or its habitat known to	0.9 km (29/08/2020)	2.6 km (18/11/2020)	Unlikely	Low – no open water foraging habitat; stick nests found, however only large enough to be potentially used by smaller raptor species, no large stick nests in large emergent trees

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Eagle			occur within 10 km				or stags found.
<i>Hieraaetus morphnoides</i> Little Eagle	BC Act: V	7	-	0.4 km (04/06/2004)	7.7 km (15/03/2015)	-	Moderate – occurs in open eucalypt forests and woodland throughout mainland Australia. The dense forests found on site could potentially be utilized, however, are not preferred habitat. Note: the species is not EPBC listed.
<i>Hirundapus caudacutus</i> White-throated Needletail	EPBC Act: M, N, V	21	Species or its habitat known to occur within 10 km	0.6 km (05/12/2018)	6.6 km (25/12/2021)	Unlikely	Moderate – species is almost entirely aerial throughout its Australian range, feeding on insects at relatively high altitudes, including above urban areas. Breeds in Asia.
<i>Hydroprogne caspia</i> Caspian Tern	EPBC Act: M	9	-	0.6 km (30/10/2006)	1.5 km (30/08/2020)	-	Not present – no open water foraging habitat; no roosting or nesting habitat.
<i>Ixobrychus flavicollis</i> Black Bittern	BC Act: V	1	-	6 km (17/07/2008)	6 km (17/07/2008)	-	Not present – no permanent wetland habitat present on site.
<i>Lathamus discolor</i> Swift Parrot	BC Act: E EPBC Act: N, CE	6	Species or its habitat known to occur within 10 km	0 km (25/03/2017)	9.6 km (12/10/2022)	-	Low – onsite record not considered reliable Refer to: Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 9 Ecoplanning (2021) <i>Preliminary Documentation Submission</i> Section 4
<i>Limosa lapponica baueri</i> Bar-tailed Godwit	EPBC Act: M, N, V	12	Species or its habitat known to occur within 10 km	1.2 km (01/05/2017)	1.5 km (23/10/2020)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.

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<i>Lophoictinia isura</i> Square-tailed Kite	BC Act: V	17	-	0 km (08/02/2018)	6.6 km (28/01/2022)	Recorded	Recorded – foraging habitat and potential stick nests found on site. Note: the species is not EPBC listed. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. The FFMP includes mapping of stick nests which will be checked for nesting activity prior to clearing.
<i>Macronectes giganteus</i> Southern Giant Petrel	BC Act: E EPBC Act: M, N, E	1	Species or species habitat may occur within 10 km	7.2 km (20/02/2009)	7.2 km (20/02/2009)	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Macronectes halli</i> Northern Giant Petrel	BC Act: V EPBC Act: M, N, V	1	Foraging, feeding or related behaviour likely to occur within 10 km	9.9 km (13/06/2010)	9.9 km (13/06/2010)	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Melanodryas cucullata cucullata</i> Hooded Robin (South-eastern form)	BC Act: V EPBC Act: E	0	Species or species habitat may occur within 10 km	-	-	-	Low – no records within locality. This species was listed under the EPBC Act after the referral for EPBC 2020/8704 was submitted. Therefore, the EPBC Act does not require impacts on this species to be assessed and approved in relation to the proposed action.
<i>Merops ornatus</i> Rainbow Bee-eater	EPBC Act: N	0	Species or its habitat may occur within 10 km	-	-	-	Low – not previously recorded in the area and rare on the South Coast. Only marginal habitat is found potentially at the edges of the closed canopy forest on site, as this species prefers cleared areas, open forest, woodland and shrubland, usually near water.

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<i>Monarcha melanopsis</i> Black-faced Monarch	EPBC Act: M, N	0	Species or its habitat known to occur within 10 km	No records in locality	No records in locality	Recorded	Recorded – not in BioNet, only by BES (2006) Refer to: Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 10
<i>Monarcha trivirgatus</i> Spectacled Monarch	EPBC Act: M, N	0	Species or its habitat may occur within 10 km	No records in locality	No records in locality	-	Refer to: Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 10 DoE (2015) <i>Referral guideline for 14 birds listed as migratory species under the EPBC Act</i> Moist forest and wet sclerophyll forest Area threshold for significant impact – 1,300 ha (1%) or 210 ha (0.1%)
<i>Myiagra cyanoleuca</i> Satin Flycatcher	EPBC Act: M, N	0	Species or its habitat known to occur within 10 km	No records in locality	No records in locality	Likely	Refer to: Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 10 DoE (2015) <i>Referral guideline for 14 birds listed as migratory species under the EPBC Act</i> Breeds at high elevations, common in tall wet sclerophyll forest along watercourses Area threshold for significant impact – 17,000ha (1%) or 1,700 ha (0.1%)
<i>Ninox strenua</i> Powerful Owl	BC Act: V	26	-	0 km (04/09/2022)	0 km (04/09/2022)	Recorded	Recorded – recorded on site by BES (2006). Suitable prey species have been recorded on the site and in adjacent habitats. The proposed action will remove 17.18 hectares of potential foraging habitat. A small number of large tree hollows suitable for nesting are also found on site, however

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							no evidence of nesting owls, pellets or owl wash observed during site assessment by Ecoplaning. Note: not EPBC listed. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. The FFMP includes mapping of HBTs which will be checked for nesting activity prior to clearing.
<i>Neophema chrysogaster</i> Orange-bellied Parrot	BC Act: CE EPBC Act: N, CE	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – breeds in Tasmania and non-breeding foraging is known from salt marshes in South Australia and Victoria
<i>Neophema chrysostoma</i> Blue-winged Parrot	EPBC Act: V, N	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – breeds in Tasmania, South Australia and Southern Victoria. Non-breeding foraging is known from salt marshes in South Australia and Victoria
<i>Numenius madagascariensis</i> Far Eastern Curlew	EPBC Act: M, N, CE	13	Species or its habitat known to occur within 10 km	1.2 km (12/03/2015)	1.2 km (12/03/2015)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Numenius phaeopus</i> Whimbrel	EPBC Act = M	18	Species or its habitat known to occur within 10 km	1.2 km (01/05/2017)	1.2 km (01/05/2017)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Pachyptila turtur subantarctica</i>	EPBC Act: N, V	0	Species or its habitat known to	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.

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						BES (2006)	This assessment
Fairy Prion (southern)			occur within 10 km				
<i>Pachycephala olivacea</i> Olive Whistler	BC Act = V	2	-	0.6 km (30/10/2006)	0.6 km (30/10/2006)	-	Low - Mostly inhabit wet forests above about 500 m. It has a disjunct distribution in NSW chiefly occupying the beech forests around Barrington Tops and the MacPherson Ranges in the north and wet forests from Illawarra south to Victoria.
<i>Pandion haliaetus</i> Osprey	BC Act: V EPBC Act: M, N	8	Species or its habitat known to occur within 10 km	0.9 km (07/09/2012)	5.6 km (19/09/2020)	-	Moderate – inhabits coastal environments and known to forage and breed in the locality. Forages over large waterbodies. Species has potential to roost or nest within the site, however, the stick nests observed on site do not appear large enough to belong to this species, and there are no large emergent trees or tall structures within the site to build a nest. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. The FFMP includes mapping of stick nests which will be checked for nesting activity prior to clearing.
<i>Petroica boodang</i> Scarlet Robin	BC Act: V	1	-	9.6 km (30/07/2020)	9.6 km (30/07/2020)	-	Moderate – suitable eucalypt forest habitat is found on site, however, there are few records of this species in the locality.
<i>Pezoporus wallicus wallicus</i> Eastern Ground Parrot	BC Act: V	1	-	0 km (27/12/2005)	0 km (27/12/2005)	-	Low – no preferred heathland or sedgeland habitat is found on site. While some dense low vegetation is found in parts of the site, the site and surrounding area are not characteristic of this species preferred habitat and there are few records in the locality. This record is highly unlikely on nearby the site. Note: the species is not EPBC listed.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
<i>Phaethon lepturus</i> White-tailed Tropicbird	EPBC Act: M, N	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site
<i>Phoebastria fusca</i> Sooty Albatross	BC Act: V EPBC Act: M, N, V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Pterodroma cervicalis</i> White-necked Petrel	EPBC Act: N	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Pterodroma leucoptera leucoptera</i> Gould's Petrel	BC Act: E EPBC Act: E	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Pterodroma neglecta neglecta</i> Kermadec Petrel (western)	BC Act: V EPBC Act: V	0	Foraging, feeding or related behaviour may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Pycnoptilus floccosus</i> Pilotbird	EPBC Act: V (<i>Listing effective as of 2/03/2022</i>)	1	Species or species habitat likely to occur within 10 km	0 km (01/03/2016)	0 km (01/03/2016)	-	Low – record considered unlikely. Habitat critical to survival according to EPBC: wet sclerophyll forests in temperate zones in moist gullies with dense undergrowth (Higgins & Peter 2002), and

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
	– not applicable to this Referral)						dry sclerophyll forests and woodlands occupying dry slopes and ridges (Higgins & Peter 2002).
<i>Rhipidura rufifrons</i> Rufous Fantail	EPBC Act: M, N	0	Species or its habitat known to occur within 10 km	-	-	Recorded	Refer to: Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 10 DoE (2015) <i>Referral guideline for 14 birds listed as migratory species under the EPBC Act</i> Area threshold for significant impact – 11,000 ha (1%) or 1,100 ha (0.1%)
<i>Rostratula australis</i> Australian Painted Snipe	BC Act: E EPBC Act: N, E	0	Species or species habitat likely to occur within 10 km	-	-	-	Low – only marginal potential wetland habitat is present. No records of this species in the locality
<i>Stagonopleura guttata</i> Diamond Firetail	BC Act: V EPBC: V	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – rarely see east the Great Dividing Range on the south coast of NSW
<i>Stercorarius skua</i> Great Skua	EPBC: N	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site
<i>Sterna hirundo</i> Common Tern	EPBC Act = M	2	Species or species habitat likely	1.2 km (04/11/2009)	2.6 km (25/01/2020)	-	Not present – no open water foraging habitat; no roosting or nesting habitat

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						BES (2006)	This assessment
			to occur within 10 km				
<i>Sterna striata</i> White-fronted Tern	EPBC Act: N	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – no open water foraging habitat; no roosting or nesting habitat
<i>Sternula albifrons</i> Little Tern	BC Act: E EPBC Act: M, N	49	Breeding likely to occur within 10 km	0.6 km (10/11/2020)	5.8 km (06/01/2022)	-	Not present – no open water foraging habitat and no sandy beach roosting or nesting habitat is found on the site. The proposed action will not significantly impact nesting colonies on beaches in the area of Lake Conjola. The proposed action will not significantly impact marine environments.
<i>Sternula nereis nereis</i> Australian Fairy Tern	EPBC Act: V	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – no open water foraging habitat; no roosting or nesting habitat
<i>Thalassarche bulleri</i> Buller's Albatross	EPBC Act: M, N, V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Thalassarche bulleri platei</i> Northern Buller's Albatross	EPBC Act: V, N	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Thalassarche carteri</i> Indian Yellow-nosed Albatross	EPBC: V, M, N	0	Species or species habitat may	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
			occur within 10 km				
<i>Thalassarche cauta</i> Shy Albatross	BC Act: V EPBC Act: M, N, V	1	Foraging, feeding or related behaviour likely to occur within 10 km	7 km (29/02/2020)	7 km (29/02/2020)	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Thalassarche eremita</i> Chatham Albatross	EPBC Act: M, N, E	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Thalassarche impavida</i> Campbell Albatross	EPBC Act: M, N, V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Thalassarche melanophris</i> Black-browed Albatross	BC Act: V EPBC Act: M, N, V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Thalassarche salvini</i> Salvin's Albatross	EPBC Act: M, N, V	0	Foraging, feeding or related behaviour likely to	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.

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						BES (2006)	This assessment
			occur within 10 km				
<i>Thalassarche steadi</i> White-capped Albatross	EPBC Act: M, N, V	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments. No suitable roost habitat or breeding habitat within the site.
<i>Thalasseus bergii</i> Crested Tern	EPBC Act: M	35	-	0.4 km (30/08/2020)	1.5 km (23/10/2020)	-	Not present – no open water foraging habitat; no roosting or nesting habitat.
<i>Thinornis cucullatus cucullatus</i> Eastern Hooded Dotterel	BC Act: CE EPBC Act: N, V	32	Species or its habitat known to occur within 10 km	0.8 km (14/01/2005)	1.5 km (23/10/2020)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats. The proposed action will not significantly impact marine environments.
<i>Tringa nebularia</i> Greenshank	EPBC Act: N, M	0	Species or its habitat likely to occur within 10 km	-	-	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.
<i>Tyto novaehollandiae</i> Masked Owl	BC Act: V	12	-	0.2 km (31/03/2005)	2.4 km (11/04/2023)	Possible	High – foraging habitat present throughout, small number of suitable potential nesting hollows
<i>Tyto tenebricosa</i> Sooty Owl	BC Act: V	13	-	0.9 km (07/09/2012)	7.2 km (26/10/2016)	Unlikely	High – moderate to low quality potential foraging habitat, prefers wet sclerophyll forest, rainforest, gullies,
<i>Xenus cinereus</i> Terek Sandpiper	BC Act = V EPBC Act = M	1		1.6 km (14/11/2007)	1.6 km (14/11/2007)	-	Not present – no suitable aquatic foraging habitats on site; no terrestrial roosting or nesting habitats.

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						BES (2006)	This assessment
KINGDOM: Animalia; CLASS: Mammalia							
<i>Arctocephalus forsteri</i> New Zealand Fur-seal	BC Act: V EPBC Act: N	3	Species or species habitat may occur within 10 km	7.4 km (01/08/2022)	9.7 km (04/08/2022)	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Arctocephalus pusillus doriferus</i> Australian Fur Seal	BC Act: V EPBC Act: N	3	Species or species habitat may occur within 10 km	6.9 km (28/02/2011)	6.9 km (28/02/2011)	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Balaenoptera acutorostrata</i> Minke Whale	EPBC Act: W	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Balaenoptera borealis</i> Sei Whale	BC Act: V EPBC Act: W, M, V	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Balaenoptera edeni</i> Bryde's Whale	EPBC Act: W, M	0	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Balaenoptera musculus</i>	BC Act: E EPBC Act:	0	Species or species	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.

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Blue Whale	W, M, E		habitat may occur within 10 km				
<i>Balaenoptera physalus</i> Fin Whale	BC Act: V EPBC Act: W, M, V	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Caperea marginata</i> Pygmy Right Whale	EPBC Act: W, M	0	Foraging, feeding or related behaviour likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Cercartetus nanus</i> Eastern Pygmy-possum	BC Act: V	2	-	0.4 km (07/12/2018)	0.4 km (07/12/2018)	-	Moderate – not recorded on site during fauna surveys (BES 2006, Ecoplanning 2020). Preferred heathland habitat with abundant proteaceous shrubs not present, however, suitable habitat is present in the form of dry sclerophyll forest with patches of dense understorey, including banksias, eucalypts, and bottlebrushes which could provide nectar, as well as fruits and insects. Fire impacts – High intensity fire has likely resulted in mortality of Eastern Pygmy-possums within fire grounds (e.g., mapped Very High burnt class), while lower intensity fire areas (mapped Low or Moderate burnt class) are likely to have provided refugia within which populations could survive. Recovery of flowering understory species, such as banksia, is likely to be an important factor in the ability of Eastern Pygmy-possums to recolonize high intensity burnt

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							areas. FFMP will mitigate impacts by ensure removal and relocation of any individuals found on site during vegetation clearing by the supervising ecologist.
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	BC Act: V EPBC Act: V	0	Species or species habitat likely to occur within 10 km	-	-	-	Low – wide-ranging foraging behaviour feeding on insects from the air; no roosting habitat (caves or similar structures) on the site; no potential roosting habitat (cliff-lines, escarpments) within 5km of the site; no records within the locality.
<i>Dasyurus maculatus maculatus</i> Spotted-tailed Quoll (southeastern mainland population)	BC Act: V EPBC Act: E	3	Species or its habitat known to occur within 10 km	0.1 km (30/06/2006)	5.5 km (10/07/2019)	-	Not present – Refer to: Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 7
<i>Delphinus delphis</i> Common Dolphin	EPBC Act: W	0	Species or its habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Eubalaena australis</i> Southern Right Whale	BC Act: E EPBC Act: W, M, E	2	Species or species habitat known to occur within 10 km	2.3 km (03/07/2011)	8.3 km (27/07/2016)	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Falsistrellus tasmaniensis</i> Eastern False Pipistrelle	BC Act: V	7	-	0.4 km (24/09/2008)	1.4 km (06/12/2018)	-	High – suitable foraging habitat and potential roost hollows are present on site. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. The FFMP includes mapping of

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							HBTs which will be soft-felled and inspected for microbats.
<i>Isoodon obesulus obesulus</i> Southern Brown Bandicoot (eastern)	BC Act: E EPBC Act: E	2	Species or its habitat known to occur within 10 km	0 km (24/03/2017)	5.4 km (19/06/2022)	Unlikely	Refer to: Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 10
<i>Grampus griseus</i> Risso's Dolphin	EPBC Act: W	0	Species or its habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Lagenorhynchus obscurus</i> Dusky Dolphin	EPBC Act: W, M	0	Species or its habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Megaptera novaeangliae</i> Humpback Whale	BC Act: V EPBC Act: W, V	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Micronomus norfolkensis</i> Eastern Coastal Free-tailed Bat	BC Act: V	5	-	0.4 km (24/09/2008)	6.6 km (20/12/2018)	Possible	High – suitable foraging habitat and potential roost hollows are present on site. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. The FFMP includes mapping of HBTs which will be soft-felled and inspected for microbats.
<i>Miniopterus orianae oceanensis</i> Large Bent-winged	BC Act: V	11	-	0 km (12/06/2020)	0 km (12/06/2020)	-	High – suitable foraging habitat is present on site. Habitat surveys did not find any suitable roosts on site, such as stormwater tunnels, buildings, caves, or derelict mines.

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						BES (2006)	This assessment
Bat							FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. However, due to the lack of roosting habitat, this species is not likely to be present on site.
<i>Myotis macropus</i> Southern Myotis	BC Act: V	5	-	1.3 km (06/12/2018)	1.3 km (06/12/2018)	-	High – suitable foraging habitat and potential roost hollows are present on site. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. The FFMP includes mapping of HBTs which will be soft-felled and inspected for microbats.
<i>Orcinus orca</i> Killer Whale	EPBC Act: W, M	0	Species or its habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Petauroides volans</i> Greater Glider	BC Act: E EPBC Act: E	28	Species or its habitat known to occur within 10 km	0 km (02/08/2005)	9.7 km (11/04/2023)	Recorded	Refer to: Ecoplanning (2020a) <i>Matters of National Environmental Significance Assessment</i> Section 5 Ecoplanning (2022) <i>Preliminary Documentation Submission</i> Section 5 Gaia Research (2021) <i>Targeted surveys for the Greater Glider Petauroides volans in the Conjola area, Nowra</i>
<i>Petaurus australis</i> Yellow-bellied Glider	BC Act: V EPBC Act: V (turpentlist)	10	-	0.3 km (17/11/2005)	8.5 km (11/04/2023)	Possible	Moderate – this species has not been recorded within the site despite adequate survey effort conducted by Ecoplanning, ANU, and BES (2006). Notwithstanding, there are a number of records in the surrounding area,

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						BES (2006)	This assessment
	ed on 2 March 2022, after the controlled action decision)						including within 300 m of the site, so this species has potential to occur. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing.
<i>Petaurus norfolcensis</i> Squirrel Glider	BC Act: V	1	-	0.8 km (17/11/2005)	0.8 km (17/11/2005)	Possible	Moderate – Surveys conducted by Ecoplanning and ANU detected Sugar Gliders on site. Squirrel Gliders have not been recorded on site despite sufficient survey, and it is not likely that these two glider species occur sympatrically on the site, however, this species has been recorded in close proximity to the site and therefore may occur. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing.
<i>Petrogale penicillata</i> Brush-tailed Rock-wallaby	BC Act: E EPBC Act: V	0	Species or its habitat may occur within 10 km	-	-	-	Not present – rocky habitats are not found within the site. There are no records of this species in the locality.
<i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital	BC Act: E EPBC Act: E	0	Species or its habitat known to occur within 10 km	No records in locality	No records in locality	Unlikely	Low – Based on the EPBC Koala Habitat Assessment Tool the site would not be considered habitat critical to the survival of the Koala given: Koala Occurrence – Low (0): No evidence of Koalas within 5km of the site within the past 2 or 5 years Vegetation composition – High (2+): Has forest or woodland with 2 or more known koala food tree species

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
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Territory)							Habitat connectivity – High (2+): The site is part of a contiguous landscape ≥ 500 ha. Key existing threats – Low (0): Areas which score 0 for koala occurrence and are likely to have some degree dog or vehicle threat present. Recovery value – Low (0) There are no records of this species from within a 10 km radius of the site in the last 20 years and they have not been recorded on site during past and recent surveys. TOTAL = 4 Sites scoring higher than 5 contain habitat critical to survival of Koala. Therefore, the site does not support critical habitat for the Koala.
<i>Phoniscus (Kerivoula) papuensis</i> Golden-tipped Bat	BC Act: V	2	-	7.9 km (28/02/2013)	7.9 km (28/02/2013)	-	Moderate – suitable foraging habitat and potential roost sites are present on site. There are few records of this species in the locality. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing.
<i>Potorous tridactylus tridactylus</i> Long-nosed Potoroo (SE mainland)	BC Act: V EPBC Act: V	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – records from Mella Mella Bay area (1995), Conjola NP near Red Head Forest Road (1998); post-2010 records from Barren Grounds NR 50+ km to the north, Bimberamala NP 50+ km to the southwest.
<i>Pseudomys novaehollandiae</i> New Holland Mouse	EPBC Act: V	0	Species or its habitat may occur within 10 km	-	-	-	Not present – records from Booderee NP (20+ km to the north, with barriers to dispersal including Sussex Inlet and St Georges Basin

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<i>Pteropus poliocephalus</i> Grey-headed Flying-fox	BC Act: V EPBC Act: V	54	Roosting known to occur within 10 km	0 km (14/03/2018)	7.6 km (16/04/2023)	-	Refer to: Ecoplanning (2020) <i>Matters of National Environmental Significance Assessment</i> Section 6 Ecoplanning (2022) <i>Preliminary Documentation Submission</i> Section 3
<i>Saccolaimus flaviventris</i> Yellow-bellied Sheath-tail-bat	BC Act: V	1	-	1.4 km (03/12/2018)	1.4 km (03/12/2018)	-	High – suitable foraging habitat and potential roost hollows are present on site. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. The FFMP includes mapping of HBTs which will be soft-felled and inspected for microbats.
<i>Scoteanax rueppellii</i> Greater Broad-nosed Bat	BC Act: V	5	-	0 km (02/08/2005)	1.4 km (06/12/2018)	Recorded	Recorded – suitable foraging habitat and potential roost hollows are present on site. FFMP Section 5.1.3 details ecologist supervision of tree clearing to mitigate impacts to any individuals occupying the site at the time of clearing. The FFMP includes mapping of HBTs which will be soft-felled and inspected for microbats.
<i>Tursiops aduncus</i> Indian Ocean Bottlenose Dolphin	EPBC Act: W	0	Species or its habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Tursiops truncatus</i> s. str. Bottlenose Dolphin	EPBC Act: W	0	Species or its habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.

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KINGDOM: Animalia; CLASS: Reptilia							
<i>Caretta caretta</i> Loggerhead Turtle	BC Act: E EPBC Act: M, E	1	Breeding likely to occur within 10 km	7.6 km (05/02/2011)	7.6 km (05/02/2011)	-	Not present – marine species; no nesting habitat on site.
<i>Chelonia mydas</i> Green Turtle	BC Act: V EPBC Act: M, N, V	5	Foraging, feeding or related behaviour known to occur within 10 km	2.2 km (04/07/2008)	7.5 km (30/09/2008)	-	Not present – marine species; no nesting habitat on site.
<i>Dermochelys coriacea</i> Leatherback Turtle	BC Act: E EPBC Act: M, E	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – marine species; no nesting habitat on site.
<i>Eretmochelys imbricata</i> Hawksbill Turtle	EPBC Act: M, V	1	Species or its habitat known to occur within 10 km	2.5 km (26/11/2006)	2.5 km (26/11/2006)	-	Not present – marine species; no nesting habitat on site.
<i>Hoplocephalus bungaroides</i> Broad-headed Snake	BC Act: E EPBC Act: V	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – no sandstone habitat; no records in locality; species has low potential for movement into the site from distant areas of occupation.
<i>Natator depressus</i> Flatback Turtle	EPBC Act: M, V	0	Foraging, feeding or related	-	-	-	Not present – marine species; no nesting habitat on site.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
			behaviour known to occur within 10 km				
KINGDOM: Animalia; CLASS: Actinopterygii							
<i>Cosmocampus howensis</i> Lord Howe Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Epinephelus daemелиi</i> Black Rockcod	EPBC Act: V	-	Species or species habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Heraldia nocturna</i> Upside-down Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Hippocampus abdominalis</i> Big-belly Seahorse	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Hippocampus breviceps</i> Short-snouted Seahorse	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
<i>Hippocampus whitei</i> White's Seahorse	EPBC Act: N, E	-	Species or species habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Histiogamphelus briggsii</i> Crested Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Kimblaeus bassensis</i> Trawl Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Lissocampus runa</i> Javelin Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Maroubra perserrata</i> Sawtooth Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Notiocampus ruber</i> Red Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
<i>Phyllopteryx taeniolatus</i> Weedy Seadragon	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Prototroctes maraena</i> Australian Grayling	EPBC Act: N, V	-	Species or species habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Seriolella brama</i> Blue Warehou	EPBC Act: N	-	Species or species habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Solegnathus spinosissimus</i> Spiny Pipehorse	EPBC Act: N	-		-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Solenostomus cyanopterus</i> Robust Ghostpipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Stigmatopora argus</i> Spotted Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Stigmatopora nigra</i> Widebody Pipefish	EPBC Act: N	-	Species or species	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
			habitat may occur within 10 km				
<i>Syngnathoides biaculeatus</i> Double-end Pipehorse	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Syngnathoides biaculeatus</i> Double-end Pipehorse	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Thunnus maccoyi</i> Southern Bluefin Tuna	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Urocampus carinirostris</i> Hairy Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Vanacampus margaritifer</i> Mother-of-pearl Pipefish	EPBC Act: N	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Vanacampus phillipi</i> Port Phillip Pipefish	EPBC Act: N	-	Species or species habitat may	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
			occur within 10 km				
KINGDOM: Animalia; CLASS: Chondrichthyes							
<i>Carcharias taurus</i> (east coast population) Grey Nurse Shark (east coast population)	EPBC Act: N, CE	-	Species or species habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Carcharodon carcharias</i> Great White Shark	EPBC Act: M, N, V	-	Species or its habitat known to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Carcharhinus longimanus</i> Oceanic Whitetip Shark	EPBC Act: M	-	Species or its habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Galeorhinus galeus</i> Eastern School Shark	EPBC Act: N	-	Species or its habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Lamna nasus</i> Mackerel Shark	EPBC Act: M	-	Species or species habitat likely to occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
<i>Manta birostris</i> Giant Manta Ray	EPBC Act: M	-	Species or its habitat may occur	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
			within 10 km				
<i>Rhincodon typus</i> Whale Shark	EPBC Act: M, N, V	-	Species or species habitat may occur within 10 km	-	-	-	Not present – Marine species. The proposed action will not significantly impact marine environments.
KINGDOM: Plantae							
<i>Caladenia tessellata</i> Thick-lipped Spider-orchid	BC Act: E EPBC Act: V	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – no known populations in the region Favours dry sclerophyll woodland with heathy or grassy understorey in 20 known populations from NSW and Victoria
<i>Calochilus pulchellus</i> Pretty Beard-orchid	BC Act: E EPBC Act: E	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – no known populations within the locality.
<i>Correa bauerlenii</i> Chef's Cap	BC Act: V EPBC: V	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – no known populations in the region
<i>Corunastylis vernalis</i> East Lynne Midge-orchid	BC Act: V EPBC Act: V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – occurs in sandy soils in areas where ground cover is more open and sedge dominated, often near ridge crests. No known populations in the region.
<i>Cryptostylis hunteriana</i>	BC Act: V EPBC Act:	1	Species or its habitat	10 km (20/02/2009)	10 km (20/02/2009)	Unlikely	Low – BES (2006) targeted surveys. Species unlikely to have colonized the site to the present date. No well-defined

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
Leafless Tongue Orchid	V		known to occur within 10 km				habitat preferences. Refer to: Ecoplanning (2022) <i>Preliminary Documentation Submission</i> Attachment J
<i>Cynanchum elegans</i> White-flowered Wax Plant	BC Act: E EPBC Act: E	0	Species or species habitat may occur within 10 km	-	-	-	Not present – the site is >50 km south of the southernmost extent of this species' known range. Marginal habitat is present in the Bangalay Moist Woodland/ Open Forest,
<i>Genoplesium baueri</i> Yellow Gnat-orchid	BC Act: E EPBC Act: E	0	Species or species habitat may occur within 10 km	-	-	-	Not present – occurs in sandstone environments primarily in the Sydney Basin. No suitable habitat within the site and no known populations in the region.
<i>Melaleuca biconvexa</i> Biconvex Paperbark	BC Act: V EPBC Act: V	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – not recorded. Conspicuous large shrub/ small tree species.
<i>Persicaria elatior</i> Tall Knotweed	BC Act: V EPBC Act: V	0	Species or species habitat may occur within 10 km	-	-	-	Not present – suitable wetland habitats not found within the site. No known populations in the region. Closest records near Turlinjah to the south and Robertson to the north. Not recorded during flora surveys of the site (BES 2006).
<i>Prasophyllum affine</i> Jervis Bay Leek Orchid	BC Act: E EPBC Act: E	0	Species or species habitat likely to occur within 10 km	-	-	-	Not present – no suitable habitat within the site and no known populations in the region.
<i>Pterostylis gibbosa</i> Illawarra Greenhood	BC Act: E EPBC Act:	0	Species or species	-	-	-	Not present – known only from poorly drained open forests with canopy associations not found on site.

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
	E		habitat may occur within 10 km				
<i>Rhizanthella slateri</i> Eastern Underground Orchid	BC Act: V EPBC Act: E	0	Species or species habitat may occur within 10 km	-	-	-	Low – currently known from fewer than 10 locations, including near Bulahdelah, the Watagan Mountains, the Blue Mountains, Wiseman's Ferry area, Agnes Banks and near Nowra. Known to occur in sclerophyll forest. Highly cryptic as the plant grows almost entirely beneath the soil surface.
<i>Rhodamnia rubescens</i> Scrub Turpentine	BC Act: CE EPBC Act: CE (listed on 11 December 2022, after the controlled action decision)	5	Species or its habitat known to occur within 10 km	0 km (02/08/2005) Recorded on site	0 km (14/06/2017) Confirmed present on site (Ecoplanning 2021d; this assessment)	Recorded	Recorded – Critically endangered due to Fungal disease. Wide ranging along east coast from Qld border south. State-level approval granted for development site. Listed under EPBC Act in December 2020. The proposal was referred to the Department on 24 June 2020. Under the EPBC Act, only species listed at the time of the referral are required to be considered for impact assessment. Notwithstanding, the FFMP includes recommendations in relation to coordinating with local botanic gardens for ex-situ conservation of this species.
<i>Syzygium paniculatum</i> Magenta Lilly Pilly	BC Act: E EPBC Act: V	0	Species or its habitat known to occur within 10 km	-	-	-	Not present – not recorded, conspicuous tree species.
<i>Thesium australe</i> Austral Toadflax	BC Act: V EPBC Act: V	0	Species or species habitat may occur within 10 km	-	-	Unlikely	Low – BES (2006) targeted surveys did not detect this species. Species unlikely to have colonized the site to the present date. Occurs mostly in grassy woodlands associated with <i>Themeda australis</i>

Scientific Name Common Name	Legal Status	No. of records (10 km) ¹	EPBC Act PMST ²	Closest record and date	Most recent and proximity	Likelihood of occurrence	
						BES (2006)	This assessment
<i>Wilsonia backhousei</i> Narrow-leafed Wilsonia	BC Act: V	1	-	3.8 km (28/11/2010)	3.8 km (28/11/2010)	-	Not present – occurs on the margins of salt marshes and lakes.
Ecological Communities							
<i>Coastal Swamp Oak (Casuarina glauca)</i> Forest of New South Wales and South East Queensland ecological community	EPBC Act: E	-	Community likely to occur within area	-	-	-	Not present – Swamp Oak does not form a dominant canopy cover anywhere on the site.
<i>Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland</i>	EPBC Act: E	-	Community likely to occur within area	-	-	-	Present – listed in December 021 (project referral date June 2021) Note: Majority of EEC has been retained in bushland reserve, with only residual impacts.
<i>Illawarra and south coast lowland forest and woodland ecological community</i>	EPBC Act: CE	-	Community likely to occur within area	-	-	-	Not present – refer to Attachment H
<i>Illawarra-Shoalhaven Subtropical Rainforest of the Sydney Basin Bioregion</i>	EPBC Act: CE	-	Community likely to occur within area	-	-	-	Not present – the site does not occur on typical, more fertile soil types and does not contain high structural complexity of vegetation. The site contains contra-indicators such as a relatively uniform simplified canopy/ sub-canopy layer with a dominance of Lilly Pilly and other common mesic species as well as eucalypts.
<i>Littoral Rainforest and Coastal Vine Thickets of Eastern Australia</i>	EPBC Act: CE	-	Community likely to occur within area	-	-	-	Not present – refer to Attachment J

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						BES (2006)	This assessment
<i>River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria</i>	EPBC Act: CE	-	Community likely to occur within area	-	-	-	Not present – the site does not contain alluvial landforms related to coastal river floodplains or sites where transient water accumulates, such as floodplains, river-banks, riparian zones, lake foreshores, creek lines, floodplain pockets, depressions, alluvial flats, fans, terraces, and localised colluvial fans. The site does not contain characteristic canopy species, such as <i>Angophora floribunda</i> (Rough-barked Apple) or <i>Eucalyptus tereticornis</i> (Forest Red Gum)
<i>Subtropical and Temperate Coastal Saltmarsh</i>	EPBC Act: V	-	Community likely to occur within area	-	-	-	Not present – the site does not contain saltmarsh.

Unless otherwise stated, species information has been derived from the DPIE Threatened Species (<http://www.environment.nsw.gov.au/threatenedspecies/>)

Legal Status codes: V = Vulnerable; E = Endangered; CE = Critically Endangered

M = listed Migratory under any of the following agreements – China and Australia Migratory Bird Agreement (CAMBA), Japan and Australia Migratory Bird Agreement (JAMBA), Republic of Korea Australia Migratory Bird Agreement (ROKAMBA), or Bonn Convention; N = listed Marine under the EPBC Act; W = listed cetacean under the EPBC Act

BC Act = NSW *Biodiversity Conservation Act 2016*

EPBC Act = Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Species list obtained from (1) the BioNet Atlas (OEH), (2) EPBC Act Protected Matters Report (DAWE), and BES (2006)

