
Appendix D – Migratory fauna listed under the EPBC Act

A desktop assessment was undertaken to determine the migratory fauna within a 10 kilometre radius of the study area. Table A shows the species that are 'present', 'likely' or 'possible' to occur within the study area, based on field surveys and observations of suitable habitat. Table B shows the species that are 'unlikely' to occur within the study area.

All information in these tables taken from NSW OEH and Commonwealth DSEWPaC Threatened Species profiles (OEH, 2012c, DSEWPaC, 2012b) unless otherwise stated. The codes used in these tables are: CE – Critically Endangered; E – Endangered; V – Vulnerable; EP – Endangered Population; CEEC – Critically Endangered Ecological Community; EEC – Endangered Ecological Community; M - Migratory.

Table A: EPBC Act-listed migratory fauna that are likely or possible to occur, from the locality, habitat association and suitable habitat present at the study area

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
Migratory Birds						
<i>Wetland or Marine species</i>						
<i>Limosa lapponica</i>	Bar-tailed Godwit		M -CAMBA, JAMBA, ROKAMBA; Marine; Wetland	Occurs along NSW coast, with important sites including the Hunter River estuary. Non-breeding visitor to Australia. Mainly inhabits coastal habitats including intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. Often found around seagrass beds and sometimes in nearby saltmarsh. Also recorded from sewage farms, saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats.	20 records within 10km (OEH, 2012b)	Possible. Observations of this species along Windang Beach near the entrance of Lake Illawarra. May fly over study area on occasion or roost. Suitable breeding habitat not present.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Monarcha melanopsis</i>	Black-faced Monarch		M -Terrestrial	This species of bird usually inhabits dense gullies of rainforest, sclerophyll forests and eucalypt woodlands along the coastal regions from Victoria to Cape York and is migratory over much of its range (Slater <i>et al.</i> , 1989).	<p>Predicted to occur within 10km (DSEWPaC, 2012b).</p> <p>Recorded near Wharton's Creek, Bulli (WCC, 2004).</p>	<p>Possible</p> <p>May forage in study area on occasion. Suitable breeding habitat not present.</p>
<i>Limosa limosa</i>	Black-tailed Godwit	V	M - CAMBA, JAMBA, ROKAMBA; Marine; Wetland	The Black-tailed Godwit is a migratory wading bird that breeds in Mongolia and Eastern Siberia and flies to Australia for the southern summer, arriving in August and leaving in March. In NSW, it is most frequently recorded at Kooragang Island (Hunter River estuary), with occasional records elsewhere along the north and south coast, and inland. Records in western NSW indicate that a regular inland passage is used by the species, as it may occur around any of the large lakes in the western areas during summer, when the muddy shores are exposed. It is usually found in sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. It has also been found around muddy lakes and swamps, wet fields and sewerage treatment works.	1 record within 10km (OEH, 2012b)	<p>Possible.</p> <p>May fly over on occasion particularly in association with Lake Illawarra. Potential beaches include Windang Beach, Bellambi and Stanwell Park. Suitable roosting habitat available. Suitable breeding habitat not present.</p>

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Limicola falcinellus</i>	Broad-billed Sandpiper		M-CAMBA, JAMBA, ROKCAMBA; Marine	In NSW, occurs in coastal areas, from Ballina, south to Shoalhaven Heads. In Victoria, they are an annual visitor in small numbers in coastal regions, with rare inland records. Occurs in sheltered parts of the coast, favouring estuarine mudflats but also occasionally occur on saltmarshes, shallow freshwater lagoons, saltworks and sewage farms, and in areas with large soft intertidal mudflats, which may have shell or sandbanks nearby. Occasionally they occur on reefs or rocky platforms. They have also been recorded in creeks, swamps and lakes near the coast, particularly those with bare mudflats or sand exposed by receding water (OEH, 2012b).	2 records within 10km from 1983 & 1995 (OEH, 2012b)	Possible. Suitable roosting habitat available. Suitable breeding habitat not present. Beaches such as Bellambi and Corrimal Beach study areas adjoin watercourses potentially suitable for foraging for this species. Nearby Stanwell Park outside the study area may also provide suitable foraging habitat.
<i>Hydroprogne caspia</i>	Caspian Tern		M – CAMBA, JAMBA; Marine	Occurs east of the Great Divide, mainly in coastal regions, and also in the Riverina and Lower and Upper Western Regions, with occasional records elsewhere (Higgins & Davis, 1996).	25 records within 10km (OEH, 2012b)	Possible. May forage within study areas that encompass intertidal zones such as Stanwell Park (amongst

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
						others), or use parts of study area as a movement corridor.
<i>Ardea ibis</i>	Cattle Egret	M - CAMBA as <i>Ardeola ibis</i> , JAMBA as <i>Bubulcus ibis</i> ;	Marine; Wetland	Occurs across NSW. Principal breeding sites are the central east coast from Newcastle to Bundaberg. Also breeds in major inland wetlands in north NSW (notably the Macquarie Marshes). Occurs in tropical and temperate grasslands, wooded lands and terrestrial wetlands. Uses predominately shallow, open and fresh wetlands with low emergent vegetation and abundant aquatic flora. Sometimes observed in swamps with tall emergent vegetation and commonly use areas of tall pasture in moist, low-lying areas.	Predicted to occur within 10km (DSEWPaC, 2012b) Recorded at Sandon Point and surrounds (QEM, 1992; Chafer, 1997; Sefton, 1983)	Possible. May forage in the study areas opportunistically; Bellambi Beach and Sandon Point are nearby suitable habitat. Unlikely breed in the study areas.
<i>Tringa nebularia</i>	Common Greenshank	M - CAMBA JAMBA, ROKAMBA;	Wetland	The species has been recorded in most coastal regions' especially west of the Great Dividing Range, especially between the Lachlan and Murray Rivers and the Darling River drainage basin, including the Macquarie Marshes, and north-west regions (Higgins & Davies, 1996). Typically is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity including sheltered coastal habitats such as embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both	22 records within 10km (OEH, 2012b)	Possible. May forage on occasion. Suitable breeding habitat not present. Beaches such as Bellambi and Corrimal Beach study areas adjoin watercourses

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
				permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. It will also use artificial wetlands generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees.		potentially suitable for foraging for this species. Nearby Stanwell Park outside the study area may also provide suitable foraging habitat.
<i>Sterna hirundo</i>	Common Tern	M-CAMBA, JAMBA, ROKAMBA; Marine		Common Terns are marine, pelagic and coastal. However, off Wollongong, NSW, Common Terns were recorded in all marine zones but generally recorded in offshore and pelagic waters, 11–55km from shore (DSEWPAC, 2013b). This species nest on the ground in the open, usually on bare substrates, occasionally near vegetation or in it, or on a floating mat of vegetation. They usually nest on islands, either marine or in lakes, only sometimes on mainland beaches or promontories or salt or freshwater marshes. Common Terns often nest in sites washed over by winter storms or floods.	7 records within 10km (OEH, 2012b)	Likely. Could forage throughout the study area. May forage within study areas that encompass intertidal zones such as Stanwell Park, Woonona Beach, Towradgi Beach (amongst others), or use parts of study area as a movement corridor. Potential breeding habitat present.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Calidris ferruginea</i>	Curlew Sandpiper		M – CAMBA, JAMBA, ROKAMBA; Wetland	<p>Occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April. Occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin.</p> <p>The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April.</p>	10 records within 10km (OEH, 2012b)	<p>Possible.</p> <p>May fly over study area on occasion or roost. Suitable breeding habitat not present.</p>
<i>Charadrius bicinctus</i>	Double-banded Plover		M; Wetland	<p>Occurs along the coast and inland areas of NSW. Non-breeding visitor. Important sites in NSW include Lake Bathurst and Botany Bay (Penrhyn Estuary and Sydney Airport). Inhabits littoral, estuarine and fresh/saline terrestrial wetlands as well as saltmarsh, grasslands and pasture.</p>	Predicted to occur within 10km (DSEWPac, 2012b)	<p>Possible.</p> <p>Could potentially forage in some patches.</p> <p>Records have been observed outside the study area of Windang Beach.</p>

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Numenius madagascariensis</i>	Eastern Curlew	M –CAMBA, JAMBA, ROKAMBA; Marine; Wetland		Primarily coastal. Non-breeding visitor to Australia. Associated with sheltered coasts with large intertidal mudflats or sandflats, often with seagrass and are often recorded among saltmarsh. Occasionally found on open beaches, coral reefs, rock platforms or islets. Also recorded from saltworks and sewage farms.	14 records within 10km (OEH, 2012b)	Possible. May fly over study areas on occasion or roost. Suitable breeding habitat not present.
<i>Ardea alba</i>	Eastern Great Egret	M; Marine – CAMBA, JAMBA		Occurs across NSW. Within NSW there are breeding colonies within the Darling Riverine Plains and Riverina regions, and minor colonies across its range including the north and north-east of the state. Reported from a wide range of wetland habitats (for example inland and coastal, freshwater and saline, permanent and ephemeral, open and vegetated, large and small, natural and artificial).	Predicted to occur within 10km (DSEWPac, 2012b) Recorded at Sandon Point and surrounds (QEM, 1992; Chaffer, 1997; Sefton, 1983)	Likely. May forage within study area, or use parts of study area as a movement corridor
<i>Pandion haliaetus</i>	Eastern Osprey	M; Marine		Favours coastal areas, especially the mouths of large rivers, lagoons and lakes. They feed on fish over clear, open water. Breeding takes place from July to September in NSW, with nests being built high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea.	1 record within 10km from 1995 (OEH, 2012b)	Likely. Could forage in the study area and roost in trees within the site.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Charadrius leschenaultii</i>	Greater Sand-plover	V	M -Bonn, CAMBA, JAMBA, ROKAMBA; Wetland	In NSW, the species has been recorded between the northern rivers and the Illawarra, with most records coming from the Clarence and Richmond estuaries (OEH, 2012b). Occurs mainly on sheltered sandy, shelly or muddy beaches or estuaries with large intertidal mudflats or sandbanks (OEH, 2012b). Roosts during high tide on sandy beaches and rocky shores; begin foraging activity on wet ground at low tide, usually away from the edge of the water; individuals may forage and roost with other waders (OEH, 2012b).	7 records within 10km (OEH, 2012b)	Possible. May roost or forage on occasion. Limited suitable habitat present.
<i>Pluvialis squatarola</i>	Grey Plover		M; Bonn, CAMBA, JAMBA, ROKAMBA; Marine; Wetland	Breed north of 65° N in the Northern Hemisphere, in northern Siberia, from the White Sea east to the Gulf of Anadyr, and in Alaska and northern Canada from the shores of the Bering Sea east to Baffin Island. In Australia, occur almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons. They also occur around terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes.	15 records within 10km (OEH, 2012b)	Possible. May roost or forage on occasion. Limited suitable habitat present
<i>Heteroscelus brevipes</i>	Grey-tailed Tattler		M – JAMBA, CAMBA and ROKAMBA; Wetland	Occurs along NSW coast, more common north of Sydney. Non-breeding visitor to Australia. Inhabits sheltered coasts with reefs and rock platforms or with intertidal mudflats. Usually forages in shallow water on hard intertidal substrates, but also recorded foraging on intertidal mudflats with mangroves/seagrass and occasionally on intertidal sandflats.	11 records within 10km (OEH, 2012b)	Possible. Suitable foraging habitat available within study area.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Thinornis rubricollis</i>	Hooded Plover (eastern)	CE	M; Marine	The Hooded Plover is endemic to southern Australia and is nowadays found mainly along the coast from south of Jervis Bay. In the late 1920s and early 1930s the species was recorded from Port Stephens but are now considered locally extinct. It has not been seen in the Sydney area since the 1940s. Occasionally, individual birds are sighted slightly further north to the Shoalhaven River and Comerong Beach and one bird was sighted at Lake Illawarra in March 2001. Hooded Plovers prefer sandy ocean beaches backed by sparsely vegetated sand-dunes for shelter and nesting. Hooded Plovers display high nest site fidelity and nest solitarily. Occasionally Hooded Plovers are found on tidal bays and estuaries, rock platforms and rocky or sand-covered reefs near sandy beaches, and small beaches in lines of cliffs. They regularly use near-coastal saline and freshwater.	2 records within 10km (OEH, 2012b)	Likely. Could forage throughout the study area. Potential breeding habitat present.
<i>Gallinago hardwickii</i>	Latham's Snipe		M – Bonn as <i>Gallinago hardwickii</i> , CAMBA as <i>Gallinago hardwickii</i> , JAMBA as <i>Gallinago hardwickii</i> , ROKAMBA as <i>Gallinago hardwickii</i> ;	Occurs along the coast and west of the Great Dividing Range. Non breeding visitor to Australia. Inhabit permanent and ephemeral wetlands up to 2000m asl. Typically in open, freshwater wetlands with low, dense vegetation (incl. swamps, flooded grasslands and heathlands). Can also occur in saline/brackish habitats and in modified or artificial habitats close to human activity.	Predicted to occur within 10km (DSEWPac, 2012b) Closest records from Seaford Swamp in Victoria (Bamford et al., 2008) Observed at Tramway Creek and Woodlands Creek (WCC, 2004)	Possible. May forage in the study area. Unlikely breed in the study area.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
			Marine; Wetland			
<i>Charadrius mongolus</i>	Lesser Sand-plover	V	M -Bonn, CAMBA, JAMBA, ROKAMBA;M arine; Wetland	In NSW, occurs along the coastline preferring beaches of sheltered bays, harbours and estuaries with large intertidal sandflats or mudflats; occasionally occurs on sandy beaches, coral reefs and rock platforms (OEH, 2012b). Roosts during high tide on sandy beaches, spits and rocky shores; forage individually or in scattered flocks on wet ground at low tide, usually away from the water's edge (OEH, 2012b).	2 records within 10km (OEH, 2012b)	Possible. May roost and forage on occasion within the study area.
<i>Sterna albifrons</i>	Little Tern		M-CAMBA, ROKAMBA; Marine	In NSW occurs mainly north of Sydney, with smaller numbers south to Victoria. Almost exclusively coastal, preferring sheltered environments; may occur several kilometres from the sea in harbours, inlets and rivers . Nests in low dunes or sandy beaches just above high tide mark near estuary mouths/ adjacent to coastal lakes and islands. Forage in shallow waters of estuaries, coastal lagoons and lakes, also along open coasts, less often at sea, and usually within 50m of shore.	135 records within 10km (OEH, 2012b) Known breeding habitat at Perkins Beach Windang (WCC, 2010). Towradgi Beach listed in Species Recovery Plan.	Likely. Known breeding site at Perkins Beach Windang.
<i>Pluvialis fulva</i>	Pacific Golden Plover		M – Bonn, CAMBA, JAMBA, ROKAMBA; Marine; Wetland	Widespread along coast, may occur inland along major river systems. Important sites in NSW comprise the Hunter and Shoalhaven estuaries and Richmond and Clarence Rivers. Does not breed in Australia. Usually forages on sandy or muddy shores or margins of sheltered areas such as estuaries and lagoons, though it also feeds on rocky shores, islands or reefs. Occasionally forage among vegetation,	10 records within 10km (OEH, 2012b)	Possible May forage within study area on occasion.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
				such as saltmarsh, mangroves or in pasture or crops.		
<i>Rostratula benghalensis</i>	Painted Snipe (was Australian Painted Snipe)	E	V; M -CAMBA; Wetland	Normally found in permanent or ephemeral shallow inland wetlands, either freshwater or brackish. Nests on the ground amongst tall reed-like vegetation near water. Feeds on mudflats and the water's edge taking insects, worm and seeds. Prefers fringes of swamps, dams and nearby marshy areas with cover of grasses, lignum, low scrub or open timber.	Predicted to occur within 10km (DSEWPaC, 2012b)	Possible. Refer to Appendix C.
<i>Calidris canutus</i>	Red Knot		M – CAMBA, JAMBA, ROKAMBA; Marine, Wetland	Found along much of the NSW coast. inhabit intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (Higgins & Davies, 1996) (DSEWPaC, 2012b).	10 records within 10km (OEH, 2012b)	Possible. May forage on occasion. Suitable breeding habitat not present.
<i>Calidris ruficollis</i>	Red-necked Stint		M – Bonn, CAMBA, JAMBA, ROKAMBA, Marine; Wetland	Found in most coastal areas. inhabit intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (Higgins & Davies, 1996)	12 records within 10km (OEH, 2012b)	Possible. May forage or roost on occasion. Suitable breeding habitat not present. Has been observed along the

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
				(DSEWPaC, 2012b).		beach at Windang.
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	E; M; Terrestrial	In NSW confined to two known breeding areas: the Capertee Valley and Bundarra-Barraba region. Non-breeding flocks occasionally seen in coastal areas foraging in flowering Spotted Gum and Swamp Mahogany forests, presumably in response to drought. Inhabits dry open forest and woodlands, particularly Box-Ironbark woodland and riparian forests of River Sheoak, with an abundance of mature trees, high canopy cover and abundance of mistletoes.	Predicted to occur within 10km (DSEWPaC, 2012b)	Possible. Refer to Appendix C.
<i>Arenaria interpres</i>	Ruddy Turnstone		M - Bonn, CAMBA, JAMBA, ROKAMBA; Marine; Wetland	Widespread throughout Australia during non-breeding periods. Mainly found on coastal regions with exposed rock coast lines or coral reefs. It also lives near platforms and shelves, often with shallow tidal pools and rocky, shingle or gravel beaches. It can, however, be found on sand, coral or shell beaches, shoals, cays and dry ridges of sand or coral. It has occasionally been sighted in estuaries, harbours, bays and coastal lagoons, among low saltmarsh or on exposed beds of seagrass, around sewage ponds and on mudflats (DSEWPaC, 2012b)	26 records within 10km (OEH, 2012b) Observed passing through on northerly migration route to northern hemisphere (our Autumn). Gather in small flocks and feed before departing (WCC, 2004).	Possible. May roost or forage on occasion in the foredunes observations at Sandon Point.
<i>Rhipidura rufifrons</i>	Rufous Fantail		M; Terrestrial	Found along NSW coast and ranges. Inhabits rainforest, dense wet forests, swamp woodlands and mangroves. During migration, it may be found in more open habitats or urban areas (Birds Australia, 2008).	Predicted to occur within 10km (DSEWPaC, 2012b). Recorded near Hewitts	Possible. May forage within study area, or use parts of study area

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					Creek, Bulli (WCC, 2004)	as a movement corridor.
<i>Calidris alba</i>	Sanderling	M -Bonn, CAMBA, JAMBA, ROKAMBA; Wetland		<p>Sanderlings occur along the NSW coast, with occasional inland sightings.</p> <p>Often found in coastal areas on low beaches of firm sand, near reefs and inlets, along tidal mudflats and bare open coastal lagoons; individuals are rarely recorded in near-coastal wetlands</p> <p>Roosts on bare sand, behind clumps of beach-cast kelp or in coastal dunes.</p>	<p>17 records within 10km (OEH, 2012b)</p> <p>The main area where this species has been recorded is Windang, with occasional records at Bellambi (WCC, 2010)</p>	<p>Likely.</p> <p>Could forage throughout the study area.</p> <p>Potential breeding habitat located Bellambi and Windang.</p>
<i>Onychoprion fuscata</i>	Sooty Tern	M; Marine		Occurs over tropical and subtropical seas and islands around northern NSW. Occasionally seen along coastal NSW, especially after cyclones. Breeds in sand or coral scrapes on offshore islands and cays including Lord Howe and Norfolk Islands.	3 records within 10km (OEH, 2012b)	<p>Possible.</p> <p>Possible rare use of Beaches in Wollongong LGA such as Coledale Beach, Sandon Point Bulli, Woonona (amongst others).</p>

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Numenius phaeopus</i>	Whimbrel		M- Bonn, CAMBA, JAMBA, ROKAMBA; Marine	Occurs along NSW coast. Non-breeding visitor to Australia. Often found on intertidal mudflats (with/without mangroves) of sheltered coasts, also harbours, lagoons, estuaries and river deltas. Also uses saltflats with saltmarsh, saline grasslands and sewage farms/ saltworks.	Predicted to occur within 10km (DSEWPaC, 2012b) Solitary bird observed in 2001 (WCC, 2004).	Possible. May forage on occasion. Suitable breeding habitat not present.
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle		M; Terrestrial	This species of large bird occurs along the coastline of Australia and also range inland over large rivers and wetlands, favouring forested coasts and forested margins of inland waterways. Nests are usually near water, in tall live or dead trees or on remote coastal cliffs. River Red Gum (<i>Eucalyptus camaldulensis</i>), Forest Red Gum (<i>E. tereticornis</i>) and Southern Mahogany (<i>E. botryoides</i>) are commonly used as nest trees (Emison & Bilney, 1982). On islands free of predators, nests may be close to the ground in shrubs or rocky platforms (Marchant & Higgins, 1993).	30 records within 10km (OEH, 2012b) Predicted to occur within 10km (DSEWPaC, 2012b) One adult seen from Sandon Point surf club as it fished offshore and along McCauleys beach where it caught a fish at the exit of Tramway Creek. Then flew to the turpentine forest (WCC, 2004)	Likely. Known roost tree in Turpentine Forest; cuttlefish shells usually at base.

Table B: EPBC Act-listed migratory fauna that are unlikely to occur, from the locality, habitat association and suitable habitat present at the study area

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
Migratory Birds						
<i>Wetland or Marine species</i>						
<i>Stercorarius parasiticus</i>	Arctic Jaeger		M; Marine – JAMBA ROKAMBA	Occurs along the coasts of Australia. Nests near other seabird colonies.	7 records within 10km (OEH, 2012b)	Unlikely. May fly over on occasion or rest on the shoreline. Unlikely to rely on habitats in the proposal footprint.
<i>Sula leucogaster</i>	Brown Booby		M – CAMBA, JAMBA, ROKAMBA; Marine	In NSW, occurs and is recorded in the southern parts of NSW to Tweed Heads. Occurs in both marine and terrestrial habitat; including coastal waters, harbours and estuaries and near offshore islands but seldom flying over land (Marchant & Higgins 1990). Nests in on the ground in a variety of sites, from rugged rocky terrain (cliffs, steep slopes) on larger islands, to beaches, coral rubble and guano flats on cays (OEH, 2012b).	1 record within 10km from 1985 (OEH, 2012b)	Unlikely. Limited suitable habitat.
<i>Irediparra gallinacea</i>	Comb-crested Jacana	V		Occurs on freshwater wetlands in northern and eastern Australia, mainly in coastal and subcoastal regions, from the north-eastern Kimberley Division of Western Australia to Cape York Peninsula then south along the east coast to the Hunter region of NSW – some recorded in south-eastern NSW potentially in response to	2 records within 10km (OEH, 2012b)	Unlikely. May roost on occasion in the study area.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
				unfavourable conditions (OEH, 2012b).		
<i>Actitis hypoleucos</i>	Common Sandpiper	M – CAMBA, ROKAMBA, Marine; Wetland		Widespread in small numbers; predominantly concentrated in northern and western Australia (Higgins & Davies, 1996). The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. Has also been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties.	1 record within 10km from 1989 (OEH, 2012b)	Unlikely. May roost on occasion in the study areas. Beaches such as Bellambi and Corrimal Beach study areas adjoin watercourses potentially suitable for foraging for this species. Nearby Stanwell Park outside the study area may also provide suitable foraging habitat.
<i>Egretta scara</i>	Eastern Reef Egret	M- CAMBA; Marine		Occurs along much of the Australian coastline except Victoria, Tasmania (Birdlife, 2013). They usually inhabit rocky shorelines and coral islands and reefs, where they forage for fish, crustaceans and molluscs.	9 records within 10km (OEH, 2012b) Recorded by Sandon Point and surrounds (Chafer et al, 1992)	Unlikely. May forage in the study areas opportunistically; Bellambi Beach and Sandon Point are

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
						nearby suitable habitat. Unlikely breed in the study areas.
<i>Puffinus carneipes</i>	Flesh-footed Shearwater	V	M-JAMBA, ROKAMBA ; Marine	Ranges throughout the Pacific and Indian Oceans. There are two main breeding areas: one in the South West Pacific includes Lord Howe Island and New Zealand; the other along the coast of Western Australia (OEH, 2012b). Nests in forests near sandy soils.	9 records within 10km (OEH, 2012b)	Unlikely. Could forage in the surrounds and occasionally roost in vegetation within the study area.
<i>Apus pacificus</i>	Fork-tailed Swift		M; Marine-CAMBA, JAMBA, ROKAMBA	Recorded in all regions of NSW. Non-breeding, and almost exclusively aerial while in Australia. Occurs over urban and rural areas as well as areas of native vegetation. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs (Higgins, 1999).	Predicted to occur within 10km (DSEWPaC, 2012b)	Unlikely. Could potentially occur in some patches, although no records present in the study area.
<i>Plegadis falcinellus</i>	Glossy Ibis		M- Bonn, CAMBA; Marine	Generally located east of the Kimberley in Western Australia and Eyre Peninsula in South Australia.	6 records within 10km (OEH, 2012b)	Unlikely. Limited suitable habitat present.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Calidris tenuirostris</i>	Great Knot		M; Wetland	In NSW, the species has been recorded at scattered sites along the coast to about Narooma. It has also been observed inland at Tullakool, Armidale, Gilgandra and Griffith. Occurs within sheltered, coastal habitats containing large, intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons. Often recorded on sandy beaches with mudflats nearby, sandy spits and islets and sometimes on exposed reefs or rock platforms (OEH, 2012b).	10 records within 10km (OEH, 2012b)	Unlikely. May roost on occasion. Limited suitable habitat present.
<i>Fregata ariel</i>	Lesser Frigatebird		M, CAMBA JAMBA ROKAMBA	Common and widespread on Australian seas (Lindsey, 1986). It is common in tropical seas, breeds on remote islands, including Christmas Island in the Indian Ocean. Mostly commonly seen from the mainland prior to onset of a tropical cyclone. Predominantly aerial birds, they do use trees and bushes to nest. Diet mainly consists of squid and flying fish.	1 recorded within 10km (OEH, 2012b)	Unlikely. May fly over on occasion. Limited suitable habitat available. This species has been records on the rocky outcrops of Port Kembla outside the study area.
<i>Numenius minutus</i>	Little Curlew		M - CAMBA, JAMBA, ROKAMBA ; Marine,	In NSW, most records are scattered east of the Great Dividing Range, from Casino, south to Greenwell Point with a few scattered records west of the Great Dividing Range (Higgins & Davies, 1996). Congregates around pools, river beds and water-filled tidal channels, and shallow water at edges of billabongs. The species prefers pools with bare dry mud (including	Predicted to occur within 10km (DSEWPac, 2012b)	Unlikely. Limited suitable habitat present.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
			Wetland	mudbanks in shallow water) and they do not use pools if they are totally dry, flooded or heavily vegetated (Higgins & Davies, 1996).		
<i>Sterna albifrons</i>	Little Shearwater	M; Marine	Widespread; Lord Howe Island has one of the larger breeding colonies in the Australian region; Breeding sites at Lord Howe Island include Roach Island, Muttonbird Island, Blackburn Island and on the main Island at Muttonbird Point and Transit Hill (OEH, 2012b).	3 records within 10km (OEH, 2012b). One record at Austinmer Beach from NPWS, (2002).	Unlikely. May fly over on occasion. Limited suitable habitat available.	
<i>Tringa stagnatilis</i>	Marsh Sandpiper	M- Bonn, CAMBA, JAMBA, ROKAMBA; Marine	It is recorded in all regions of NSW but especially the central and south coasts and (inland) on the western slopes of Great Divide and Western Plains (OEH, 2012b). It lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes (DSEWPaC, 2012b)	6 records within 10km (OEH, 2012b)	Unlikely. Limited suitable habitat present.	
<i>Neophema chrysogaster</i>	Orange-bellied Parrot CE	CE; M- Bonn; Marine; Terrestrial	Breeds in Tasmania and migrates in winter to SE South Australia and southern Victoria. There are occasional reports from NSW, including Shellharbour, Maroubra and the Shoalhaven. In winter, usually found within 3km of the coast in saltmarsh and strandline/foredune vegetation. May also occur on golf-courses and other grassy areas, including improved pasture.	1 record within 10km (OEH, 2012b) Predicted to occur within 10km (DSEWPaC, 2012b)	Unlikely. May forage in nearby grasslands but unlikely to be impacted by proposed works.	

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
<i>Calidris melanotos</i>	Pectoral Sandpiper	M – Bonn, JAMBA, ROKCAMBA; Marine		In NSW, the Pectoral Sandpiper is widespread, but scattered. Records exist east of the Great Divide, from Casino and Ballina, south to Ulladulla (DSEWPaC, 2013a). Prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	4 records within 10km (OEH, 2012b)	Unlikely. Limited suitable habitat present.
<i>Merops ornatus</i>	Rainbow Bee-eater	M – JAMBA; Terrestrial		Widespread across mainland Australia. Mainly inhabits open forests and woodlands and shrublands, often in proximity to permanent water. Also occurs in cleared/semi-cleared habitats including farmland and residential areas. Excavates a nest burrow in flat/sloping ground in banks of waterways, dams, roadside cuttings, gravel pits or cliff faces. Southern populations migrate north for winter after breeding.	Predicted to occur within 10km (DSEWPaC, 2012b)	Unlikely. Could potentially occur in some patches, although no records present in the study area.
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	M; Terrestrial		In NSW widespread on and east of the Great Divide, sparsely scattered on the Western Slopes, very occasional records on the Western Plains. Inhabit heavily vegetated gullies in eucalypt-dominated forests and taller woodlands, often near wetlands and watercourses. On migration, occur in coastal forests, woodlands, mangroves and drier woodlands and open forests. Generally not in rainforests.	Predicted to occur within 10km (DSEWPaC, 2012b)	Unlikely. Could potentially occur in some patches, although no records present in the study area.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	M - Bonn, CAMBA, JAMBA, ROKAMBA;		Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent	8 records within 10km (OEH, 2012b)	Unlikely. Limited suitable habitat present.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
			Wetland	sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves. (DSEWPaC, 2012b)		
<i>Puffinus tenuirostris</i>	Short-tailed Shearwater		M – JAMBA, ROKAMBA; Marine	This species breeds on Tasmania and off the coast of south Australia, with the bulk of the population in the south-east. It undergoes transequatorial migration, wintering north of Japan near the Aleutian Islands (USA), with some moving north of the Bering Strait. The return migration route incorporates the central Pacific, with some moving down the western coast of North America. Breeding occurs mainly on coastal islands, typically in areas of grassland or other vegetation, but sometimes cliffs or bare ground.	304 records within 10km (OEH, 2012b)	Unlikely. May fly over study area on occasion.
<i>Puffinus griseus</i>	Sooty Shearwater		M-CAMBA, JAMBA; Marine	Breed on small islands in the south Pacific and south Atlantic Oceans, mainly around New Zealand, the Falkland Islands, Tierra del Fuego and also in the Auckland Islands and Phillip Island off Norfolk Island.	7 records within 10km (OEH, 2012b)	Unlikely. May fly over study area on occasion – limited suitable habitat present.
<i>Macronectes giganteus</i>	Southern Giant	E	E, M; Marine	Nests in open vegetation on Antarctic and subantarctic islands, including Macquarie and Heard Islands and in Australian Antarctic	Predicted to occur within 10km (DSEWPaC,	Unlikely

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
	Petrel			territory (OEH, 2012b). It is an opportunistic scavenger and will poach from fishing vessels or animal carcasses on land (OEH, 2012b).	2012b) Records along the shoreline at McCauley's Beach Thirroul (WCC, 2010)	May fly over study areas on occasion. Unlikely to rely on these habitats.
<i>Calonectris leucomelas</i> <i>/Puffinus leucomelas</i>	Streaked Shearwater		M – CAMBA, JAMBA, ROKAMBA; Marine	This species is pelagic, but also occurs in inshore waters. It occurs in the Pacific Ocean, nesting in Japan and many of its offshore islands. After breeding, the Streaked Shearwater migrates toward southern Australia. Feeds mainly on fish and squid. It follows fishing boats, attracted to anchovy crawls off Japan. Streaked Shearwater uses burrows to nest in, and prefers forested hills.	4 records within 10km (OEH, 2012b)	Unlikely. May fly over study area on occasion – limited suitable habitat present.
<i>Xenus cinereus</i>	Terek Sandpiper	V	M; Marine	The two main sites for this species in NSW are the Richmond River and Hunter River estuaries. Inhabits coastal mudflats, lagoons, creeks and estuaries. Favours mudbanks and sandbanks near mangroves, also observed on rocky pools and reefs and up to 10km inland around brackish pools. Roost communally in mangroves or dead trees. Forages in open intertidal mudflats.	6 records within 10km (OEH, 2012b)	Unlikely. May fly over study area or roost within dune vegetation on occasion – limited suitable habitat present.
<i>Tringa incana</i>	Wandering Tattler		M- CAMBA, JAMBA, ROKAMBA;	This species is vagrant in the East-Asian Australasian Flyway and is uncommon in Australia (DSEWPaC, 2012b). Found on rocky coasts with reefs and platforms, points, spits, piers, offshore islands and	7 records within 10km (OEH, 2012b)	Unlikely. Limited habitat

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
			Marine	shingle beaches or beds. It is occasionally seen on coral reefs or beaches, and tends to avoid mudflats (Higgins & Davies, 1996). Foraging habitat is among rocks or shingle, or in shallow pools at edges of reefs or beaches, mainly along the tideline. Wandering Tattlers have been recorded roosting or perching on top of boulders surrounded by or close to water (Higgins & Davies, 1996).		present.
<i>Puffinus pacificus</i>	Wedge-tailed Shearwater		M- JAMBA; Marine	Breeds on the east and west coasts of Australia and on off-shore islands. Areas where breeding occurs include Cocos-Keeling Island (WA), islands off the west coast of WA, islands and cays of the Great Barrier Reef (Queensland), islands along the eastern coast of eastern Australia, including Montague Island (NSW), and Lord Howe Island and Norfolk Island (NSW). A pelagic, marine bird known from tropical and subtropical waters. The species has been recorded in offshore waters of eastern Victoria and southern NSW, mostly over continental slope with sea-surface temperatures of 13.9–24.4°C and usually off the continental shelf in north-west Australia.	6546 records within 10km (OEH, 2012b)	Unlikely. Limited habitat present.
<i>Phaethon lepturus</i>	White-tailed Tropicbird		M- CAMBA, JAMBA, Marine	In Australia, the White-tailed Tropicbird (Indian Ocean) nests in Pisonia trees amongst Pisonia-coconut vegetation, and on sandy ground. In Australia, the White-tailed Tropicbird (Indian Ocean) breeds in the Cocos-Keeling Islands in the main atoll, where breeding was last recorded in 1941), and at Ashmore Reef (on West, Middle and East Islands) and Rowley Shoals off the northern coast of Western Australia (D. James, 2005, pers.	4 records within 10km (OEH, 2012b)	Unlikely. Limited habitat present.

Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
				comm.; Johnstone & Storr, 1998; Marchant & Higgins, 1990).		
<i>Hirundapus caudacutus</i>	White-throated Needletail	<i>Hirundapus caudacutus</i>	M –CAMBA, JAMBA, ROKAMBA,	This species of migratory bird migrates from breeding grounds in Siberia, the Himalayas, and Japan to Australia in Summer, arriving mid-October and departing mid-April. It is known to inhabit a variety of habitats including forests, woodlands, farmlands, plains, lakes, coasts and towns (Pizzey and Knight, 1999). Feeds on insects during flight, chiefly ahead of weather changes. In Australia, this species is nomadic, responding to local weather changes (DSEWPac, 2012b).	9 records within 10km (OEH, 2012b) Predicted to occur within 10km (DSEWPac, 2012b) Recorded by a Thirroul resident at Sandon Point (WCC, 2004)	Unlikely. May fly over study area on occasion or roost on the shoreline.
<i>Chlidonias leucopterus</i>	White-winged Black Tern		M -CAMBA, JAMBA, ROKAMBA; Marine	In NSW, the species is widespread east of the Great Divide, mainly south to Wollongong, but with scattered records found further south (Morris, 1971). The species mostly inhabits fresh, brackish or saline, and coastal or subcoastal wetlands. White-winged Black Terns frequent tidal wetlands, such as harbours, bays, estuaries and lagoons, and their associated tidal sandflats and mudflats.	16 records within 10km (OEH, 2012b). Scattered records in the Wollongong region (DSEWPac, 2012b).	Unlikely. May fly over study area on occasion; limited habitats present.
<i>Tringa glareola</i>	Wood Sandpiper		M - Bonn, CAMBA, JAMBA, ROKAMBA; Marine	In NSW there are records east of the Great Divide, from Stratheden and Casino, south to Nowra and elsewhere, mostly from the Riverina, but also from the Upper and Lower Western Regions (DSEWPac 2013). The Wood Sandpiper uses well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes. They are typically associated with emergent, aquatic plants or grass, and dominated	1 records within 10km from 1987 (OEH, 2012b)	Unlikely. Limited habitat present.

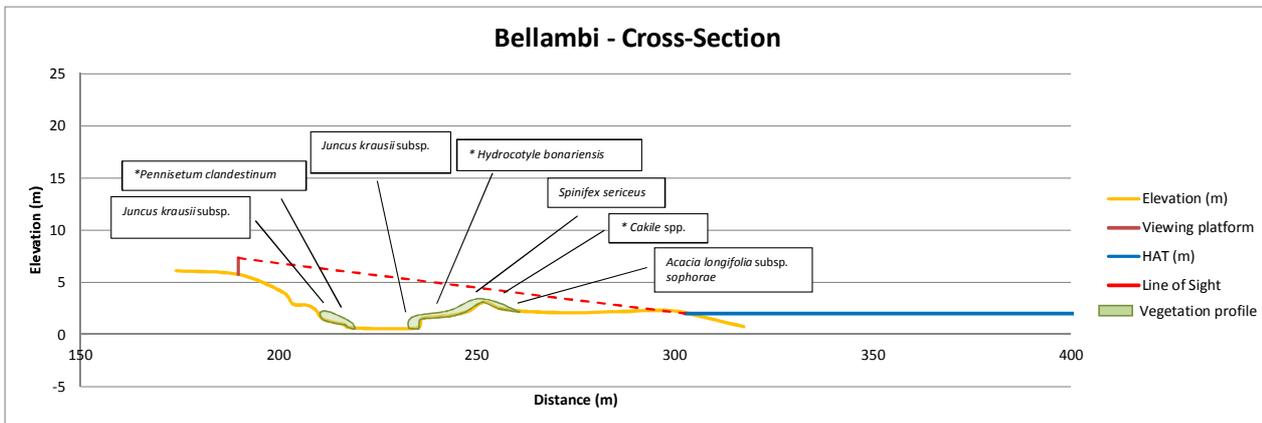
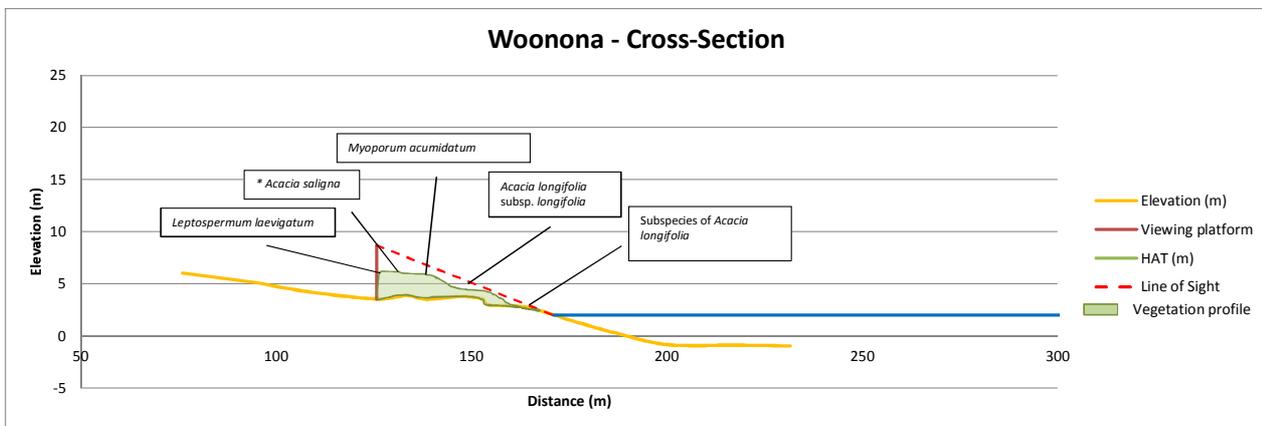
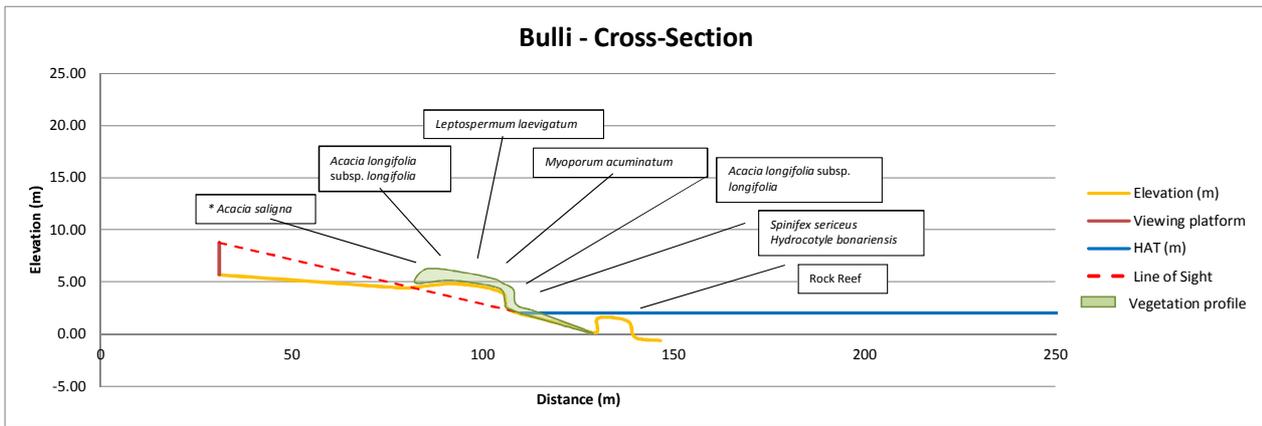
Scientific Name	Common Name	TSC Status	EPBC Status	Habitat Association	Details of Record	Likelihood of Occurrence within study areas.
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by taller fringing vegetation, such as dense stands of rushes or reeds, shrubs, or dead or live trees, especially *Melaleuca* and River Red Gums *Eucalyptus camaldulensis* and often with fallen timber.

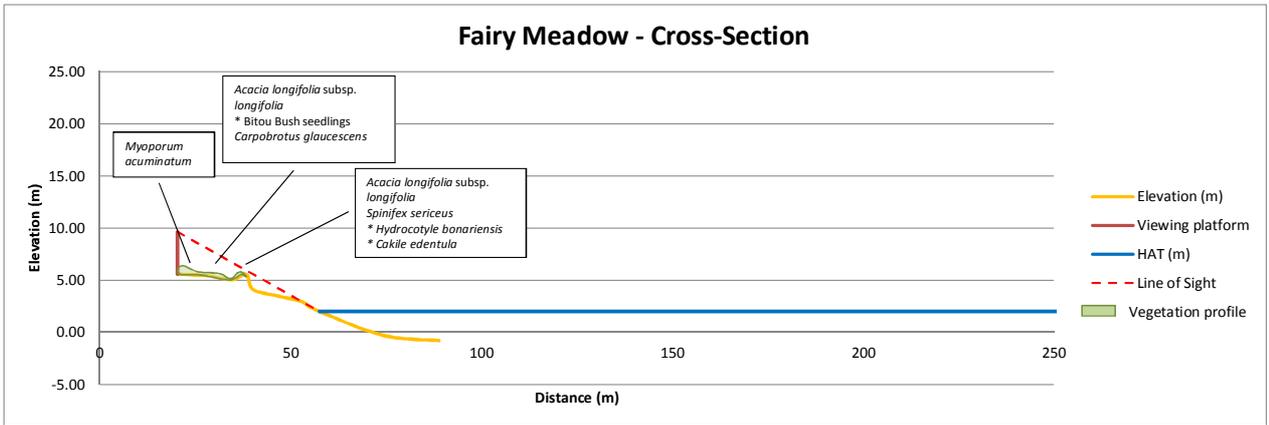
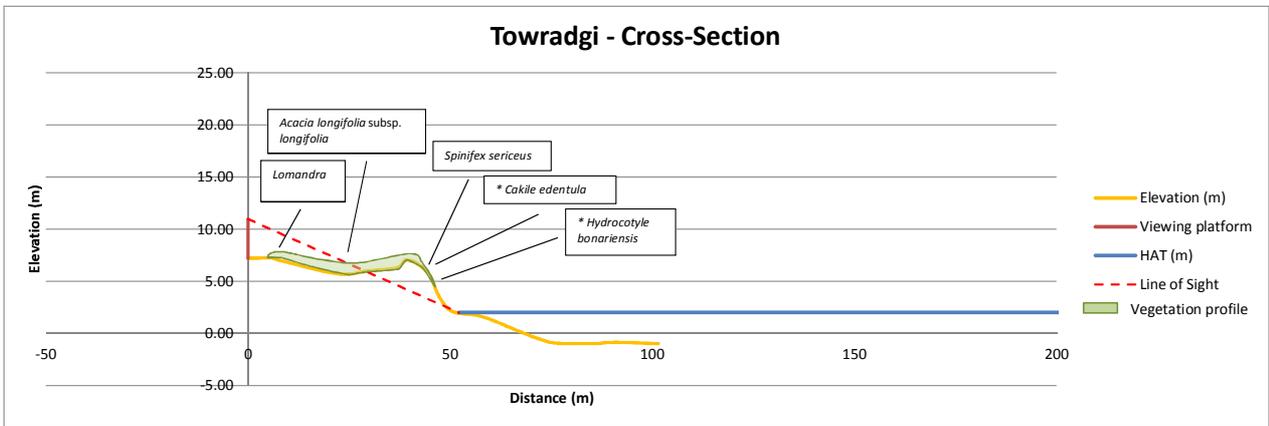
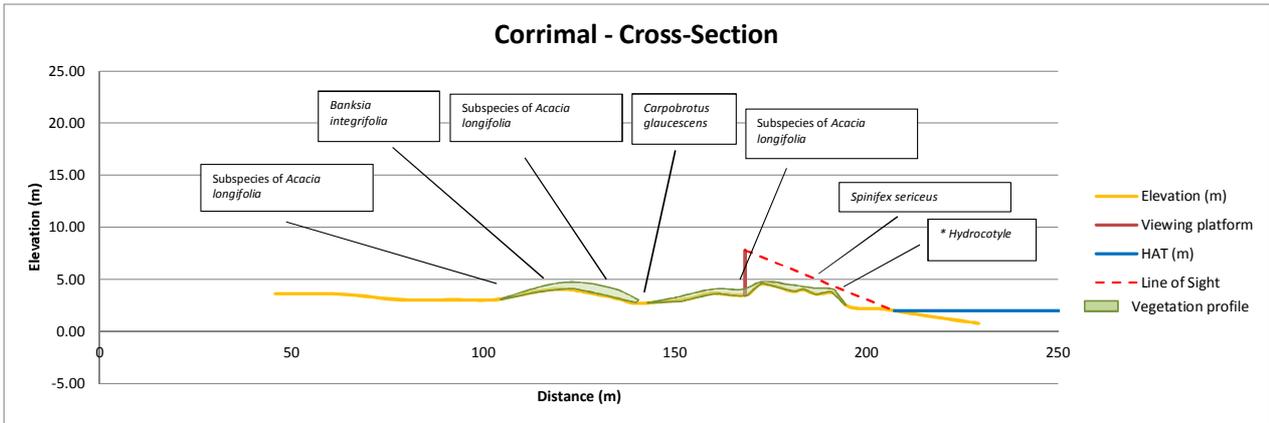
Appendix E – Vegetation cover profiles

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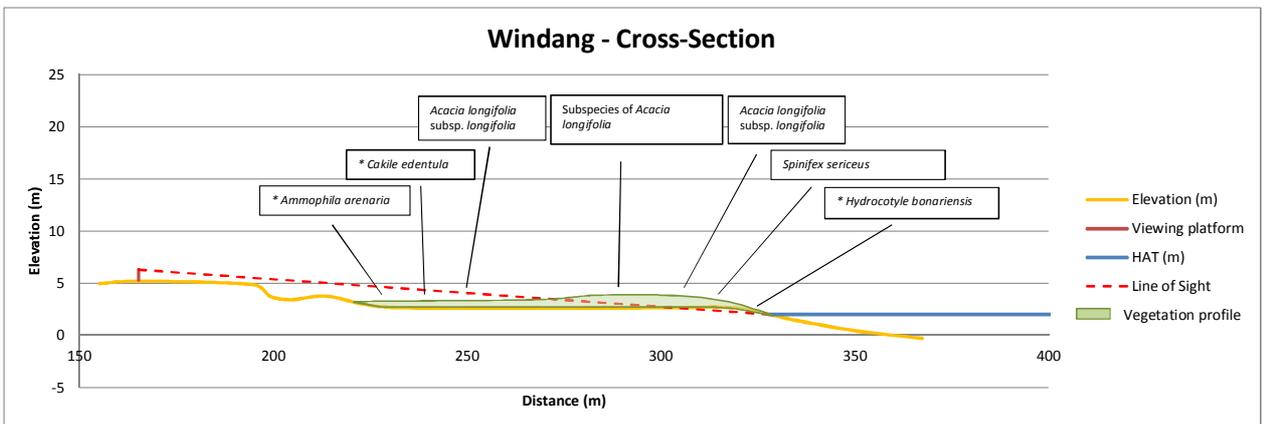
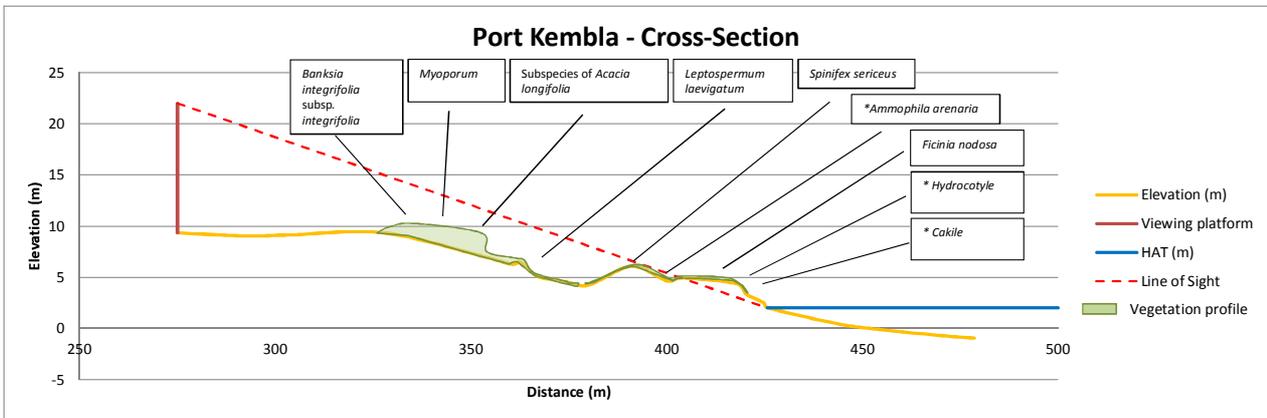
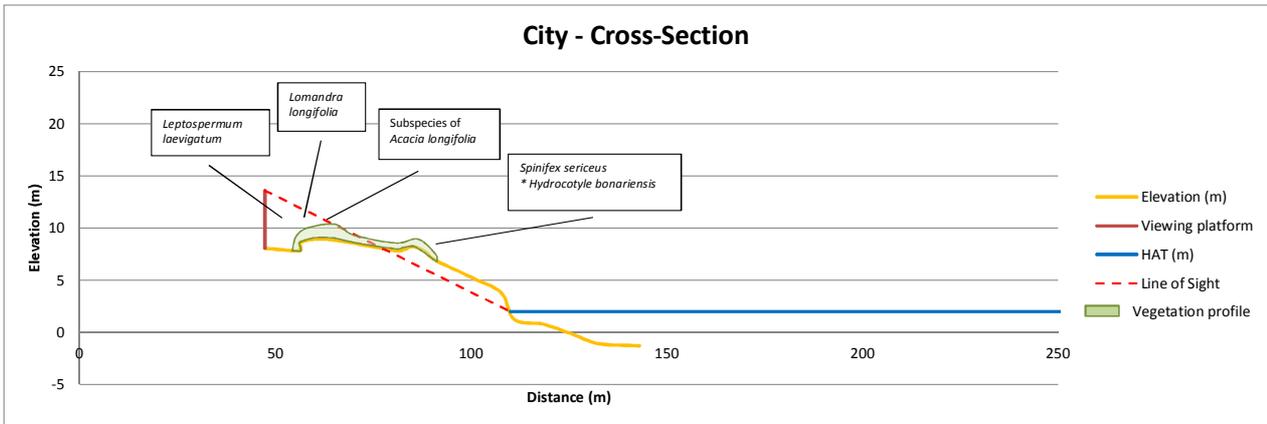
2013 Survey Site Notes Illustrating Extent of Vegetation (and Species), Viewing Platform and Line of Sight



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