Appendix E

Threatened Species Profiles

(No. of pages excluding this page = 20)

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
Acacia curranii	Curly-bark Wattle	Plant> wattle	Vulnerable TSC Act	Predicted	Grows in Acacia shrubland and mallee. Prefers acidic, skeletal soils in rocky habitats and occupies specialised habitats comprising rocky ridges and deeply weathered sandstone. Associated species in NSW populations include Eucalyptus dwyeri, E. populneus subsp. bimbil, E. intertexta, E. microcarpa, E. morrisii, Callitris glaucophylla, Acacia doratoxylon, A. havilandiorum, A. aneura and Eremophila spp. Flowers from August to September; no seedlings have been recorded from any site and attempts to germinate seeds after pre-sowing treatment have been largely unsuccessful. Regenerates from root suckers after fire, with fire disturbance also said to contribute to seedling establishment. Forms open to closed shrublands (sometimes with scattered emergent trees), with plants locally frequent to dominant in populations. Queensland populations are described as grove-forming and growing in dense pure stands. Populations with about 2500 plants over approximately 5 hectares have been recorded, as well as less than 10 plants within Nombinnie Nature Reserve; populations near Lake Cargelligo range from one to several thousand individuals; several hundred plants occur in the two patches at Gurulmundi.	Has potential to occur but was not recorded. Habitat niches given targeted assessment. This species will not be affected by the Proposal.
Acacia loderi Shrublands	Nelia Shrublands	Community > Threatened Ecological Communities	Conservation status in NSW Endangered Ecological Community	Predicted	**Description** The Acacia loderi Shrubland community is dominated by the tall shrub or small tree, Acacia loderi(commonly known in some parts of its range as Nelia). Other tree species that may occur in association with A. loderi are A. aneura, A. oswaldii, Callitris gracilis, Casuarina pauper and Flindersia maculosa. **Distribution** The Acacia loderi Shrublands are known from the Broken Hill Complex, Murray-Darling Depression, Cobar Peneplain, Riverina, Mulga Lands and Darling Riverine Plains Bioregions. Sites occur from south-western NSW to north-western Victoria and eastern South Australia. In NSW, the community is mainly confined to south-western NSW, extending east to Hillston and north to White Cliffs. The major stands occur between Broken Hill, Ivanhoe and Wilcannia, while isolated stands occur beyond these areas. **Habitat and ecology** •The community has a naturally open structure of individual shrubs to small trees (to 8 m tall) with a low, diverse understorey dominated by chenopod sub-shrubs, herbs and grasses. The community is often interspersed by woodlands of Belah Casuarina pauper, Rosewood Alectryon oleifolius or Flindersia maculosa. •Indigenous people have a strong cultural association with Nelia. •Remnants are found on solonized brown and duplex soils on level to undulating plains or on calcareous red earths; at Kinchega National Park remnants are restricted to level areas on solonized brown soils; typical habitat has a rainfall range of 240mm to 280mm.	Not recorded in the Project Area.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
Acacia petraea	Lancewood	Plant > Shrub	Conservation status in NSW: Endangered	Known	Recorded in NSW from the Hungerford and Bourke-Louth districts. Also occurs in several localities in south-western Queensland, confined to the Grey Range and its outliers in the Gregory South and Warrego districts. **Habitat and ecology** •Lancewood grows in heath to woodland vegetation on rocky ridge tops, jump-ups and scarps with shallow to skeletal, gravely sandy soils. •Associated species near Hungerford include Eremophila scoparia, E. latrobei and Dodonaea petiolaris. •Near Hungerford, the species has been found only on ridge tops along rocky outcrops, growing as a common tree with Eremophila scoparia, Eremophila latrobei and Dodonaea petiolaris. •Flowers in winter and spring. •Plant abundance in populations has been recorded as common and as a very sparse roadside scrub. In Queensland, Acacia petraea grows as a tall shrubland.	Not recorded in the Project Area.
Ambassis agassizii - endangered population	Olive Perchlet population in Western NSW	Animal > Endangered Populations	Endangered Population	Predicted	**Distribution.** Olive perchlets are a small native fish that occur in both eastern (coastal) and western (Murray-Darling) drainages, but these populations may be genetically distinct. The western population of the olive perchlet was once widespread throughout the Murray-Darling system of South Australia, Victoria, western New South Wales and southern Queensland. This population has suffered a serious decline and is now found only at a few sites in the Darling River drainage. The species is extinct in Victoria and has not been found in South Australia since 1983. **Habitat and ecology**. Olive perchlets inhabit rivers, creeks, ponds and swamps. They are usually found in slow-flowing or still waters, often near overhanging vegetation or amongst logs, dead branches and boulders. They often congregate around suitable shelter (e.g. snags and vegetation) during the day but disperse during the night to feed on micro-crustaceans and insects, including larvae. Males and females reach sexual maturity in one year. Spawning occurs in November and December, when water temperatures reach about 23°C. Females release adhesive eggs about 0.7mm in diameter amongst aquatic vegetation.	No habitat for this species in the Project Site.
Amytornis striatus	Striated Grasswren	Animal > Birds	Conservation status in NSW: Vulnerable	Predicted	**Distribution** This species is widely distributed through the arid and semi-arid regions of mainland Australia, with three subspecies currently recognised. In NSW, the race striatus was formerly distributed from the Namoi Valley area through the southern half of the Murray-Darling Basin. It is now currently known from only two disjunct localities. In central NSW, populations remain extant in Yathong Nature Reserve and surrounding areas of leasehold land. A second population occurs in south-western NSW in the Scotia Mallee west of the Darling River, including Tarawi NR, Scotia Sanctuary and adjoining properties. This population is contiguous with	This species was not recorded during the assessment. Habitat critical for breeding etc would remain unaffected. This species will not be affected by the proposed works.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					populations in adjoining mallee country in South Australia. **Habitat and ecology** •Confined to areas with mature spinifex (Triodia irritans), usually in association with mallee eucalypts and sandy soils. •Usually recorded in pairs, though often in small parties, and first often detected by its call. Can be shy and difficult to observe, though may also be inquisitive and respond to observers, particularly during the breeding season. •Occupies vegetation with a post fire age of six to 30 years. •Feeds on the ground upon small invertebrates and seeds. •Nests are a substantial dome of interwoven grasses, bark and spinifex, well-hidden towards the top of a spinifex clump.	
Amytornis textilis modestus	Thick-billed Grasswren (eastern subspecies)	Animal > Birds	Conservation status in NSW: Critically Endangered National conservation status: Vulnerable	SEWPaC predicted	**Distribution** Formerly occurred in central and western NSW, from the lower reaches of the Namoi River, south to Mossgiel. Generally thought to be extinct in NSW until recently located in the Packsaddle area. May still occur at other locations in Upper Western Region. **Habitat and ecology** •Sedentary, usually inhabiting dense, low saltbush, cottonbush, bluebush and nitre-bush areas on sandy plains or depressions in gibber; also occurs along watercourses in clumps of Canegrass; when disturbed, individuals take refuge in any available cover, including piles of old flood debris along dry sandy watercourses and down rabbit burrows. •The nest is deep and loosely-made, shaped either like a cup, half-dome or dome; located on or near the ground in a clump of Canegrass, within the foliage of low shrub (saltbush, bluebush) or in flood debris, and constructed of dead grasses, twigs and dry bark strips. •Established pairs maintain 20 - 40 hectare territories year-round and rarely, perhaps never, band with their neighbours outside the breeding season. •Forages on the ground and under or around bushes for a wide variety of seeds, berries and invertebrates.	The Project Site is not close the known distribution of this species.
Antechinomys laniger	Kultarr	Animal > Marsupials	Endangered	Predicted	**Distribution.** The Kultarr is a mouse-sized marsupial with very large ears, long delicate legs and a thin tail that is tipped with a dark tuft. Widespread across arid and semi-arid NSW but present in very low numbers. Records typically derive from captures by domestic cats or are collected after falling into steep-sided holes. Recent records have come primarily from the Cobar and Brewarrina region. The Kultar has been recorded within 15 km of the Project Site. **Habitat and ecology.** It's a terrestrial insectivore that inhabits open country, especially claypans among Acacia woodlands. Nocturnal, sheltering by day in hollow logs or tree-stumps, beneath saltbush and spinifex tussocks, in deep	Recorded close to the Project Site. Further work recommended continuing to trap for species and manage any extant population. A 7-part test has been provided.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					cracks in the soil and in the burrows of other animals. Populations appear to fluctuate seasonally in response to environmental stresses, including declines following periods of drought and intensive flooding. (OE&HW threatened species web page 2010).	
Apus pacificus	Fork-tailed swift	Animal > Birds	Migratory Species EPBC Act	Predicted	In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They are also found at treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes. The sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines. They forage aerially, up to hundreds of meters above ground, but also less than 1 m above open areas or over water. They often occur in areas of updraughts, especially around cliffs. They are said to search along edges of low-pressure systems, which assist flight. Low-flying Swifts are said to be precursors of unsettled weather, possibly because insect prey fly at a lower altitude when the air is humid and when the air density is low. They sometimes feed aerially among tree-tops in open forest. They probably roost aerially, but are occasionally observed to land. They were once recorded roosting in trees, using a bare exposed branch emergent above the foliage. Sometimes they loaf in the air, by allowing strong winds to support them). There have been rare records of loafing elsewhere including Swifts briefly resting on ground and alighting on wire netting of a tennis court. Once, one was seen attempting to land on the wall of a lighthouse.	Has potential to occur but was not recorded. This species will not be affected by the Proposal.
Ardea alba	Great Egret	Animal > Birds	Migratory Species EPBC Act	Predicted	The Great Egret is partially migratory, with northern hemisphere birds moving south from areas with colder winters. It breeds in colonies in trees close to large lakes with reed beds or other extensive wetlands. It builds a bulky stick nest.	This species was not recorded. This species will not be affected by the Proposal.
Ardea ibis	Cattle Egret	Animal > Birds	Migratory Species EPBC Act	Predicted	The Cattle Egret occurs in tropical and temperate grasslands, wooded lands and terrestrial wetlands. It has occasionally been seen in arid and semi-arid regions however this is extremely rare. High numbers have been observed in moist, low-lying poorly drained pastures with an abundance of high grass; it avoids low grass pastures. It has been recorded on earthen dam walls and ploughed fields. It is commonly associated with the habitats of farm animals, particularly cattle, but also pigs, sheep, horses and deer. The Cattle Egret is known to follow earth-moving machinery and has been located at rubbish tips. It uses predominately shallow, open and fresh wetlands including meadows and swamps with low emergent vegetation and abundant aquatic flora. They have sometimes been observed in swamps with tall emergent vegetation .	This species was not recorded. This species will not be affected by the Proposal..

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
Ardeotis australis	Australian Bustard	Animal > Birds	Endangered	Known	**Distribution.** Mainly inhabits tussock and hummock grasslands, though prefers tussock grasses to hummock grasses; also occurs in low shrublands and low open grassy woodlands; occasionally seen in pastoral and cropping country, golf courses and near dams. **Habitat and ecology** Breeds on bare ground on low sandy ridges or stony rises in ecotones between grassland and protective shrubland cover; roosts on ground among shrubs and long grasses or under trees. Forages on insects, young birds, lizards, mice, leaves, seeds and fruit. Dispersive, with irregular widespread movements over long distances; movements are thought to be in response to habitat and climatic conditions; known to converge on areas with high mice numbers and in recently burnt areas.	Low, this species is very unlikely to be recorded in the Project Site will not be affected by the proposed works.
Artesian Springs Ecological Community	Artesian Springs Ecological Community	Community > Threatened Ecological Communities	Endangered Ecological Community	Predicted	**Distribution.** Occurs at the edges of the Great Artesian Basin. Mostly found in Queensland and South Australia, however, a few occur in the Mulga Lands, Darling Riverine Plains and Cobar Peneplain Bioregions of New South Wales. **Habitat and ecology.** Flow rates, water depth, water temperature and chemistry vary within and between springs; this provides a variety of habitat types. Vegetation structure and floristics may be influenced by grazing pressure; the persistence of some species is dependent upon grazing by native herbivores to control competitors. Though further study is required, it is thought that fire may assist in maintaining or increasing flows from the vent and may help control the dominant plant species that out compete other plant species of conservation concern (e.g., Ericaulon carsonii).	This was not record in the Project Site
Atriplex infrequens	A saltbush	Plant> Shrub	Conservation status in NSW: Vulnerable National conservation status: Vulnerable	Predicted / Known	**Distribution** Confined to the NSW far western plains. Recorded rarely from sites in the north and with isolated collections from the Eubalong and Pooncarie areas in the south. **Habitat and ecology** •Atriplex infrequens is associated with broad drainage tracts, clay flats and possibly occasionally inundated habitats. Very little ecological information is available for this species so its critical habitat components can only be speculated as relatively undisturbed and ungrazed drainage lines and flats. •Flowering time has not been recorded, however seeding is recorded in December. •Population structure and disturbance regimes are not known.	This species was not recorded in the Project Site. .
Austrostipa metatoris	A Spear-grass	Plant> grass	Endangered TSC & EPBC Acts	Predicted	Flowers in response to rain. Grows in sandy areas of the Murray Valley; habitats include sandhills, sandridges, undulating plains and flat open mallee country, with red to red-brown clay-loam to sandy-loam soils. Associated species include *Eucalyptus populnea, E. intertexta, Callitris glaucophylla, Casuarina cristata, Santalum acuminatum* and *Dodonaea viscosa*. It is not known if fire plays a role in the ecology of this species although most species of *Austrostipa* provide an	Has potential to occur but was not recorded. The assessment included targeted inspection for this species.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					abundance of highly flammable ephemeral fuel in periods following above-average rainfall. Recorded in populations as locally frequent or dominant only in scattered patches.	This species will not be affected by the Proposal.
Bertya opponens	Coolabah Bertya - profile	Plant> Shrub	Conservation status in NSW: Vulnerable National conservation status: Vulnerable	SEWPaC predicted	**Distribution** This plant is currently known from only four scattered sites in NSW: one from private property near Coolabah in western NSW and two to the south of Narrabri on the North West Slopes, including the largest population in Jacks Creek State Forest. The fourth population was known from private property near Cobar but this population has not been seen since 1982 and is possibly now extinct. **Habitat and ecology** •Coolabah Bertya occurs in a range of habitats ranging from stony mallee ridges and cypress pine forest on red soils in the west, to coastal cliff edges in open eucalypt forest in the east. The wide variation in habitat type between the populations makes the identification of critical habitat very difficult. Consideration of disturbance regimes and grazing management are probably more important to the survival of populations in the long term. •Associated species at Jacks Creek State Forest include Eucalyptus chloroclada, Callitris glaucophylla and Eucalyptus fibrosa. The Gibraltar Range habitat is recorded as a ridge crest immediately above the cliff, with Eucalyptus campanulata, Eucalyptus notabilis and Allocasuarina littoralis woodland. •Each population of Coolabah Bertya has a slightly different age structure, ranging from senescent to a similar number of juveniles and adults. •Flowering time for the western populations is July and August, although seed formation can commence as early as July, especially in Jacks Creek State Forest. The coastal populations flower slightly later and are still in seed-set around January and February. •The disturbance agents of fire and mechanical disturbance appear to trigger germination and/or suckering in Coolabah Bertya. The most appropriate time interval between disturbance events is not known.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Bidyanus bidyanus	Silver perch	Animal > Fish	Vulnerable	Known	**Distribution.** Silver perch are a moderate to large freshwater fish native to the Murray-Darling river system. Silver perch are oval shaped with a small head that can become beak-like in larger fish. The colour can be grey, greenish, gold or silvery, darker on the back and paler on the sides, with a white belly. Juveniles may be mottled with vertical dark bars. Silver perch usually reach 30-40 cm and 0.5-1.5 kg, but have been recorded up to 8 kg. Silver perch were once widespread and abundant throughout most of the Murray-Darling river system. They have now declined to low numbers or disappeared from most of their former range. Silver perch are now successfully bred for aquaculture, conservation and to enhance recreational fishing, and large numbers have been stocked into	Low, this species will not be affected by the proposed works.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					impoundments and smaller numbers into rivers in the Murray-Darling Basin. However, in most cases stocking of silver perch has not managed to establish reproducing populations, and they are still considered under threat in the wild. The most abundant remaining natural population occurs in the central Murray River downstream of Yarrawonga Weir as well as several of its anabranches and tributaries (including the Edward River, an anabranch of the Murray which flows through Deniliquin and the Murrumbidgee River). The central Murray population is considered secure and self-sustaining. There have also been reports of self-sustaining populations in other rivers, including the MacIntyre and Macquarie rivers in northern NSW and the Warrego River in Queensland, mostly from recreational anglers. Little is currently known about the status of these populations. **Habitat and ecology.** Silver perch seem to prefer fast-flowing, open waters, especially where there are rapids and races, however they will also inhabit warm, sluggish water with cover provided by large woody debris and reeds. They are omnivorous, feeding on small aquatic insects, molluscs, earthworms and green algae. Males reach sexual maturity at three years of age, when around 25 cm in length, and females at five years, when around 29 cm. Adults migrate upstream in spring and summer to spawn. Juveniles also sometimes move upstream in response to rising water temperatures and levels. Females can shed 300,000 or more semi-buoyant eggs of about 2.75 mm in diameter. The eggs develop in a few days to become feeding larvae that drift downstream.	
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions		EEC	Vulnerable EPBC Act	Known	The nomination was for 'Buloke grassy woodlands'. ESSS decided to amend the name to 'Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions'. This is to take account of regional variation in the composition and conservation of buloke woodlands across their whole range. Ecological communities dominated by buloke (also known as bull oak) are widely recognised in the scientific community to represent distinct woodland communities containing Buloke, *Allocasuarina luehmannii*, or occasionally other species, as structural dominants. Slender Cypress Pine, *Callitris gracilis*, and Grey Box, *Eucalyptus microcarpa*, are locally dominant in some occurrences of the nominated community. The nominated community occurs in southern New South Wales, Victoria and South Australia, within the boundaries of the specified bioregions, which are nationally recognised biogeographical areas. The nominated woodland's component communities are generally characterised as woodland or open woodland with a well developed ground stratum that is usually grassy, but also includes many subshrubs and herbs; some component communities have understoreys that are predominantly shrubby or herbaceous.	This EEC was not recorded in the project Site.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					Most component communities lack a well-developed tall shrub layer. Buloke is common to all component communities, but slender cypress-pine and grey box may be structurally dominant in some. The composition of the ground stratum varies considerably among component communities. Native grasses often include wallaby grasses, *Danthonia* spp., and spear grasses, *Stipa* spp. Exotic grasses, which are frequently abundant, include Wimmera rye grass, *Lolium ridigum*, and several bromes, *Bromus* spp. Native subshrubs and herbs may include nodding saltbush, *Einadia nutans*, variable groundsel, *Senecio pinnatifolius*, variable sida, *Sida corrugata*, New Holland daisies, *Vittadinia* spp., grassy bindweed, *Convolvulus remotus,* and wingless bluebush, *Maireana enchylaenioides*. Exotic herbs may include clovers, *Trifolium* spp., sand catchfly, *Sinene apetala*, skeleton weed, *Chondrilla juncea*, and common pepper-cress, *Lepidium africanum*. The community is an important source of food for the endangered South-eastern Red-tailed Black-Cockatoo.	
Botaurus poiciloptilus	Australasian Bittern	Animal > Birds	Vulnerable	Known	**Distribution**. Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. **Habitat and ecology**. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (Typha spp.) and spikerushes (Eleoacharis spp.). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. Feeding platforms may be constructed over deeper water from reeds trampled by the bird; platforms are often littered with prey remains. Breeding occurs in summer from October to January; nests are built in secluded places in densely-vegetated wetlands on a platform of reeds; there are usually six olive-brown eggs to a clutch.	This species will not be affected by the proposed works.
Burhinus grallarius	Bush Stone-curlew	Animal > Birds	Endangered	Known	**Distribution.** The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still common however and in the south-east it is either rare or extinct throughout its former range. **Habitat and ecology**. Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. Largely nocturnal, being especially active on moonlit nights. Feed on insects and small vertebrates, such as frogs, lizards and snakes. Nest on the ground in a scrape or small bare patch. Two eggs are laid in spring and early summer. Utilises open forests and savannah woodlands, sometimes dune scrub, savannah and mangrove fringes.	This species was not recorded during the assessment. It will not be affected by the proposed works.
Cacatua leadbeateri	Pink Cockatoo	Animal > Birds	Vulnerable	Known	**Distribution.** Found across the arid and semi-arid inland, from south-western Queensland south to north-west Victoria, through most of South Australia, north into the south-west Northern Territory and across to the west coast between	This species was recorded overflying the Mine Site. Habitat for the species

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					Shark Bay and about Jurien. In NSW it is found regularly as far east as about Bourke and Griffith, and sporadically further east than that. **Habitat and ecology.** Inhabits a wide range of treed and treeless inland habitats, always within easy reach of water. Feeds mostly on the ground, especially on the seeds of native and exotic melons and on the seeds of species of saltbush, wattles and cypress pines. Normally found in pairs or small groups, though flocks of hundreds may be found where food is abundant. Nesting, in tree hollows, occurs throughout the second half of the year; nests are at least 1 km apart, with no more than one pair every 30 square kilometres.	would not be removed (i.e. breeding trees etc) and mitigation reduced access to the TSF. A 7-part test has been provided.
Calyptorhynchus banksii	Red-tailed Black-Cockatoo	Animal > Birds	Conservation status in NSW: Vulnerable National conservation status: Endangered	Predicted	The Red-tailed Black-Cockatoo is the most widespread of the Black-Cockatoos, ranging broadly across much of northern and western Australia as well as western Victoria. In NSW, one population occurs on the north-western slopes and plains but another small isolated population is found in the coastal north-east. **Habitat and ecology** Red-tailed Black-Cockatoos are found in a wide variety of habitats. In coastal north-east NSW they have been recorded in dry open forest and areas of mixed rainforest/eucalypt forest.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal
Certhionyx variegatus	Pied Honeyeater	Animal > Birds	Vulnerable	Known	**Distribution.** Widespread throughout acacia, mallee and spinifex scrubs of arid and semi-arid Australia. Occasionally occurs further east, on the slopes and plains and the Hunter Valley, typically during periods of drought. **Habitat and ecology**. Inhabits wattle shrub (primarily Mulga, *Acacia aneura*), mallee, spinifex and eucalypt woodlands, usually when shrubs are flowering; feeds on nectar, predominantly from various species of emu-bushes (*Eremophila* spp.); also from mistletoes and various other shrubs (e.g. *Brachysema* spp. and *Grevillea* spp.); also eats saltbush fruit, berries, seed, flowers and insects. Highly nomadic, following the erratic flowering of shrubs; can be locally common at times. Constructs a relatively large cup-shaped nest, usually robust, although occasionally loose, constructed of grasses and fine twigs, bound with spider webs, in the fork of a shrub or tree up to 5 m above the ground.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal
Chalinolobus picatus	Little Pied Bat	Animal > Bats	Vulnerable	Known	**Distribution.** The Little-Pied Bat is found in inland Queensland and NSW (including Western Plains and slopes) extending slightly into South Australia and Victoria. **Habitat and ecology**. Occurs in dry open forest, open woodland, mulga woodlands, chenopod shrublands, cypress-pine forest, mallee, Bimbil box. Roosts in caves, rock outcrops, mine shafts, tunnels, tree hollows and buildings. Can tolerate high temperatures and dryness but need access to nearby open water. Feeds on moths and possibly other flying invertebrates.	Recorded in Project Site. A 7-part test has been provided.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Animal > Birds	Vulnerable	Known	**Distribution.** The Brown Treecreeper is endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. The western boundary of the range of *Climacteris picumnus victoriae* runs approximately through Wagga Wagga, Temora, Forbes, Dubbo and Inverell and along this line the subspecies intergrades with the arid zone subspecies of Brown Treecreeper *Climacteris picumnus picumnus*. The eastern subspecies lives in eastern NSW in eucalypt woodlands through central NSW and in coastal areas with drier open woodlands such as the Snowy River Valley, Cumberland Plains, Hunter Valley and parts of the Richmond and Clarence Valleys. The population density of this subspecies has been greatly reduced over much of its range, with major declines recorded in central NSW and the northern and southern tablelands. Declines have occurred in remnant vegetation fragments smaller than 300 hectares that have been isolated or fragmented for more than 50 years. **Habitat and ecology**. The species breeds in pairs or co-operatively in territories which range in size from 1.1 to 10.7 ha (mean = 4.4 ha). Each group is composed of a breeding pair with retained male offspring and, rarely, retained female offspring. Often in pairs or cooperatively breeding groups of two to five birds. Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (Eucalyptus camaldulensis) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains. Sedentary, considered to be resident in many locations throughout its range; present in all seasons or year-round at many sites; territorial year-round, though some birds may disperse locally after breeding. Gregarious and usually observed in pairs or small groups of eight to 12 birds; terrestrial and arboreal in about equal proportions; active, noisy and conspicuous while foraging on trunks and branches of trees and amongst fallen timber; spend much more time foraging on the ground and fallen logs than other treecreepers. When foraging in trees and on the ground, they peck and probe for insects, mostly ants, amongst the litter, tussocks and fallen timber, and along trunks and lateral branches; up to 80% of the diet is comprised of ants; other invertebrates (including spiders, insects larvae, moths, beetles, flies, hemipteran bugs, cockroaches, termites and lacewings) make up the remaining percentage; nectar from Mugga Ironbark (E. sideroxylon) and paperbarks, and sap from an unidentified eucalypt are also	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					eaten, along with lizards and food scraps; young birds are fed ants, insect larvae, moths, craneflies, spiders and butterfly and moth larvae. Hollows in standing dead or live trees and tree stumps are essential for nesting.	
Cinclosoma castanotus	Chestnut Quail-thrush	Animal > Birds	Vulnerable TSC Act	Predicted	Throughout its distribution it occurs in a wide range of arid and semi-arid habitats; mainly in the low shrubs and undergrowth of mallee scrub, but also in Acacia scrubs, dry sclerophyll woodland, heath, and native pine. However, in NSW it seems to occur almost exclusively in mallee habitats, with understorey dominated by spinifex, chenopods or other shrubs including Acacia species. Only rarely, such as in Cocoparra NP, is it recorded in other types of woodland, and in these areas a dense understorey may be a prerequisite. Occupies vegetation with a wide range of fire histories, though appears to occur at highest densities in areas two to fifteen years post fire. There is some evidence from the Victorian mallee that if the interval between fires is too short (less than fifteen years) local declines may occur. These birds forage on the ground, often among spinifex clumps, on a wide range of invertebrates (including grasshoppers, bugs, beetles, flies, caterpillars and ants), seeds of both native and introduced species and, more rarely, fruits. Its nest is a depression in the ground lined with strips of bark, fine grass or sticks, placed near a mallee trunk, against a fallen branch, under a low bush or in a sparse tuft of grass. Almost always lays a clutch of two eggs.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Circus assimilis	Spotted Harrier	Animal > Birds	Vulnerable	Known	The Spotted Harrier *Circus assimilis* is a medium-sized (50-60 cm), slender bird of prey having an owl-like facial ruff that creates the appearance of a short, broad head, and long, bare yellow legs. The upperparts are blue-grey with dark barring, and the wingtips are black. The face, innerwing patch, and underparts are chestnut. The long tail is boldly banded, with a wedge-shaped tip. Juveniles are mottled and streaked ginger and brown, with prominent ginger shoulders, fawn rump and banded tail. The very similar Swamp Harrier is generally browner with a prominent white rump, a more rounded, less banded tail, and barred rather than solid black wingtips. The Square-tailed Kite has a pale face, short legs, and longer, boldly banded wingtips. The Spotted Harrier occurs in grassy open woodland including acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe (*e.g.* chenopods) (Marchant and Higgins 1993; Aumann 2001a). It is found mostly commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. The species builds a stick nest in a tree and lays eggs in spring (or sometimes autumn), with young remaining in the nest for several months.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal
Crinia sloanei	Sloane's Froglet	Animal > Frog	Vulnerable TSC Act	Predicted	It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats.	Has potential to occur but was not recorded. The assessment included targeted inspection for this

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
						species. This species will not be affected by the Proposal.
Dasyurus maculatus	Spotted-tailed Quoll	Animal > Marsupials	Vulnerable	Known	**Distribution.** The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Queensland. Only in Tasmania is it still considered common. **Habitat and ecology.** Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock crevices, boulder fields and rocky-cliff faces as den sites. Mostly nocturnal, although will hunt during the day; spends most of the time on the ground, although also an excellent climber and may raid possum and glider dens and prey on roosting birds. Use 'latrine sites', often on flat rocks among boulder fields and rocky cliff-faces; these may be visited by a number of individuals; latrine sites can be recognised by the accumulation of the sometimes characteristic 'twisty-shaped' faeces deposited by animals. Consumes a variety of prey, including gliders, possums, small wallabies, rats, birds, bandicoots, rabbits and insects; also eats carrion and takes domestic fowl. Females occupy home ranges up to about 750 hectares and males up to 3500 hectares; usually traverse their ranges along densely vegetated creek lines. Average litter size is five; both sexes mature at about one year of age.	Is unlikely to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal
Delma australis	Marble-faced Delma	Animal> Reptile	Vulnerable TSC Act	Predicted	In NSW, appears to be restricted to temperate mallee woodlands or spinifex grasslands but elsewhere is also found in chenopod shrublands, heathlands and buloke associated with mallee habitats or eucalypt lined watercourses. The species occupies areas with a sandy substrate but may also utilise cracking red loam soils, but has also recently been recorded in spinifex on rocky hillsides. Found in deep leaf litter, under rocks, logs, fallen timber or in grass clumps such as spinifex. They are considered to be terrestrial although they may climb into hummock grass and even sleep in the branches of small shrubs. They are generally active during the day but have been observed being active at night or round sunrise and sunset. They are active hunters and their main food consists of various types of insects and spiders. Lays two eggs in November or December which hatch after approximately 70 days.	Is unlikely to occur and was not recorded. The assessment included targeted inspection for this species. Vegetation density was considered unlikely to support a local population. This species will not be affected by the Proposal.
Diuris tricolor/ Diuris sheaffiana	Pine Donkey Orchid	Plant > Orchids	Conservation status in NSW: Vulnerable National	Known	**Distribution.** Sporadically distributed on the western slopes of NSW, extending from south of Narrandera all the way to the far north of NSW. Localities include the Condobolin-Nymagee road, Wattamondara towards Cowra, Cooyal, Adelong, Red Hill north of Narrandera, Coolamon, near Darlington Point, Eugowra,	Has potential to occur – the assessment occurred when the species was not in flower. Recommendations

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
			conservation status: Vulnerable		Girilambone, Dubbo, Muswellbrook, and several sites west of Wagga Wagga. **Habitat and ecology.** The Pine Donkey Orchid grows in sclerophyll forest among grass, often with native Cypress Pine (*Callitris spp.*). It is found in sandy soils, either on flats or small rises. Also recorded from a red earth soil in a Bimble Box community in western NSW. Usually recorded as common and locally frequent in populations, however only one or two plants have also been observed at sites. The species has been noted as growing in large colonies. Disturbance regimes are not known, although the species is usually recorded from disturbed habitats. Associated species include *Callitris glaucophylla, Eucalyptus populnea, Eucalyptus intertexta*, Ironbark and *Acacia* shrubland. The understorey is often grassy with herbaceous plants such as *Bulbine* species. Flowers from September to November or generally spring. The species is a tuberous, deciduous terrestrial orchid and the flowers have a pleasant, light sweet scent.	in the report request targeted assessment.
Drymodes brunneopygia	Southern Scrub-robin	Animal > Birds	Vulnerable	Known	**Distribution** This species is restricted to mallees and shrublands across southern Australia and in NSW is confined to two main areas. The first is in central NSW and is centred on Round Hill and Nombinnie Nature Reserves, though suitable habitat probably exists on adjoining leasehold lands. This population once extended south and east to near Griffith and West Wyalong, but clearing appears to have led to its local extinction in most of this region. The final record from The Charcoal Tank NR was in 1993, while in Pulletop NR it has not been observed since 1982. The other population occurs in the far south west of NSW, mainly within the Scotia mallee centred on Tarawi NR and Scotia Sanctuary. Records east of the Darling River are more scattered, with recent confirmation in Mallee Cliffs NP, and a new population recently detected on leasehold land to the north of Euston. Other populations may still occur in other areas of mallee, particularly those with a well developed shrub layer in the south west corner of the state. **Habitat and ecology** •Inhabits mallee and acacia scrub, particularly with dense sub-shrubs in the understorey, including Broombush and other dry shrubs. •Occupies vegetation with a post fire age of 4-80 years, but is most abundant in areas with a post fire age of 26-40 years as dependent on a well-developed shrub layer. •Forages around the base of mallee trees and on the ground beneath shrubs for ground- and litter-dwelling invertebrates, with certain ant species dominating. •Constructs a shallow cup-shaped nest of twigs, bark and grass, which is normally located on the ground and usually concealed in the shelter of a tree, shrub or fallen branch. This species usually has a clutch of only one egg.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. No Wildlife Atlas records are for this in the Cobar LGA.
Epthianura albifrons	White-fronted	Animal >	Endangered	Known	The White-fronted Chat is found across the southern half of Australia, from	Has potential to occur but

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
	Chat	Birds			southernmost Queensland to southern Tasmania, and across to Western Australia as far north as Carnarvon. Found mostly in temperate to arid climates and very rarely sub-tropical areas, it occupies foothills and lowlands up to 1000 m above sea level. In NSW, it occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. Along the coastline, it is found predominantly in saltmarsh vegetation but also in open grasslands and sometimes in low shrubs bordering wetland areas. **Habitat and ecology** •Gregarious species, usually found foraging on bare or grassy ground in wetland areas, singly or in pairs. They are insectivorous, feedin mainly on flies and beetles caught from or close to the ground. •Have been observed breeding from late July through to early March, with 'open-cup' nests built in low vegetation. Nests in the Sydney region have also been seen in low isolated mangroves. Nests are usually built about 23 cm above the ground (but have been found up to 2.5 m above the ground). •Two to three eggs are laid in each clutch, and the complete nesting cycle from nest-building to independent young is approximately 50 days •Birds can breed at one year of age and are estimated to live for five years.	was not recorded. The assessment included targeted inspection for this species. No Wildlife Atlas records are for this in the Cobar LGA.
Falco hypoleucos	Grey Falcon	Animal > Birds	Vulnerable	Known	**Distribution**. Arid zone woodland and scrub. **Habitat and ecology.** It has been recorded along the Culgoa, Paroo, Darling and Murray Rivers on flat mainly treeless or lightly timbered plains with open, drier vegetation types or along the timbered drainage systems where it nests in tall trees near to or overhanging water.	It is possible that this species may be recorded in the study area. The proposed works would have no affect on this species.
Gallinago hardwickii	Latham's Snipe	Animals> Birds	Migratory Species EPBC Act	Predicted	In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. Latham's Snipe occurs in temperate and tropical regions of Australia. Its altitudinal range extends from sea-level (i.e. the coast) or possibly below. For example, there are records from near Lake Eyre to approximately 2000 m above sea-level. In Australia, Latham's Snipe occurs in a wide variety of permanent and ephemeral wetlands. They usually occur in open, freshwater wetlands that have some form of shelter (usually low and dense vegetation) nearby. They generally occupy flooded meadows, seasonal or semi-permanent swamps, or open waters, but various other freshwater habitats can be used including bogs, waterholes, billabongs, lagoons, lakes, creek or river margins, river pools and floodplains. The structure and composition of the	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.

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					vegetation that occurs around these wetlands is not important in determining the suitability of habitat. As such, snipe may be found in a variety of vegetation types or communities including tussock grasslands with rushes, reeds and sedges, coastal and alpine heathlands, lignum or tea-tree scrub, button-grass plains, alpine herbfields and open forest. Latham's Snipe sometimes occur in habitats that have saline or brackish water, such as saltmarsh, mangrove creeks, around bays and beaches, and at tidal rivers. These habitats are most commonly used when the birds are on migration. They are regularly recorded in or around modified or artificial habitats including pasture, ploughed paddocks, irrigation channels and drainage ditches, ricefields, orchards, saltworks, and sewage and dairy farms . They can also occur in various sites close to humans or human activity (e.g. near roads, railways, airfields, commercial or industrial complexes).The foraging habitats of Latham's Snipe are characterized by areas of mud (either exposed or beneath a very shallow covering of water) and some form of cover (e.g. low, dense vegetation) The snipe roost on the ground near (or sometimes in) their foraging areas, usually in sites that provide some degree of shelter, e.g. beside or under clumps of vegetation, among dense tea-tree, in	
Geophaps scripta	Squatter Pigeon	Animal > Birds	Conservation status in NSW: Endangered National conservation status: Vulnerable	Predicted	**Description** Squatter Pigeons are medium-sized ground-dwelling pigeons. They are brown with black and white markings on the face and a blue-grey breast bordered below by a white 'V'. The mottled brown wings have a metallic green and purple patch. **Distribution** Found from north Queensland to the North West Slopes of NSW and extending down to the Liverpool Plains and Dubbo. Today they are very rare in the southern parts of their range. **Habitat and ecology** •Grassy woodlands and plains, preferring sandy areas and usually close to water. •Feed on the ground, on seeds of grasses, herbs and shrubs, as well as insects. •Nest on the ground.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. No Wildlife Atlas records are for this in the Cobar LGA.
Goodenia occidentalis	Western Goodenia -	Plant > Herbs and Forbs	Conservation status in NSW: Endangered	Predicted	**Distribution** Recorded in NSW from Tundulya Station about 40 km SE of Louth. Extends across the drier parts of southern Australia, from near the central-western coast of WA, through SA to central-western NSW. **Habitat and ecology** •Grows in a variety of drier communities, mainly in mallee and Acacia scrub, and mainly in sandy soils. Recorded in NSW growing in deep red sand to sandy-loam on a stabilised sand dune and in a depression amongst sandhills. •Other habitats include gentle slopes, ridge tops, lateritic outcrops, sandy flats and pebbly to gravely sands. Associated species include Acacia aneura and Triodia scariosa.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					•Flowers chiefly from July to October. •The species is known to grow in disturbed areas and can become common in patches on disturbed flats. •Recorded in populations as locally common to frequent.	
Grantiella picta	Painted Honeyeater	Animal > Birds	Vulnerable	Known	**Distribution.** The Painted Honeyeater is nomadic and occurs at low densities throughout its range. The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. During the winter it is more likely to be found in the north of its distribution. **Habitat and ecology.** Inhabits Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests. A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus Amyema. Insects and nectar from mistletoe or eucalypts are occasionally eaten. Nest from spring to autumn in a small, delicate nest hanging within the outer canopy of drooping eucalypts, she-oak, paperbark or mistletoe branches.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Grus rubicunda	Brolga	Animal > Birds	Vulnerable	Known	**Distribution** Wetlands and farmland. Though Brolgas often feed in dry grassland or ploughed paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged. **Habitat and ecology.** They feed using their heavy straight bill as a 'crowbar' to probe the ground or turn it over, primarily on sedge roots and tubers. They will also take large insects, crustaceans, molluscs and frogs. The famous Brolga 'dance' is apparently at least in part a courtship or bonding display where a pair or many pairs face each other, crouch down and stretch upwards, trumpet, leap and toss grass and sticks into the air. The nest comprises a platform of grasses and sticks, augmented with mud, on an island or in the water. Two eggs are laid from winter to autumn. (DEC threatened species website 2005).	Is very unlikely to occur and was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Haliaeetus leucogaster	White-bellied Sea-eagle	Animal > Birds	Migratory Species EPBC Act	Predicted	The White-bellied Sea-Eagle is found in coastal habitats (especially those close to the sea-shore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands. The habitats occupied by the sea-eagle are characterised by the presence of large areas of open water (larger rivers, swamps, lakes, the sea). Birds have been recorded in (or flying over) a variety of terrestrial habitats. The species is mostly recorded in coastal lowlands, but can occupy habitats up to 1400 m above sea level on the Northern Tablelands of NSW and up to 800 m above sea level in Tasmania and South Australia. Birds have been recorded at or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs, saltmarsh and sewage ponds. They also occur at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves. Terrestrial habitats include coastal dunes, tidal flats, grassland,	Unlikely to and was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					heathland, woodland, forest (including rainforest) and even urban areas. Breeding has been recorded on the coast, at inland sites, and on offshore islands. Breeding territories are located close to water, and mainly in tall open forest or woodland, although nests are sometimes located in other habitats such as dense forest (including rainforest), closed scrub or in remnant trees on cleared land. The White-bellied Sea-Eagle generally forages over large expanses of open water; this is particularly true of birds that occur in coastal environments close to the sea-shore, where they forage over in-shore waters. However, the White-bellied Sea-Eagle will also forage over open terrestrial habitats (such as grasslands). Birds may move to and congregate in favourable sites during drought or food shortage. There are no published sources that state that the White-bellied Sea-Eagle occurs in any threatened ecological communities. However, given the widespread distribution of the species, its ability to make long-distance movements, and the broad range of habitats that it may be recorded in or flying over, it is possible that the sea-eagle may occur in one or more of the threatened communities listed under the EPBC Act 1999. The White-bellied Sea-Eagle is not known to associate with any other listed threatened species.	
Hamirostra melanosternon	Black-breasted Buzzard	Animal > Birds	Vulnerable	Known	**Distribution.** The Black-breasted Buzzard is found sparsely in areas of less than 500mm rainfall, from north-western NSW and north-eastern South Australia to the east coast at about Rockhampton, then across northern Australia south almost to Perth, avoiding only the Western Australian deserts. **Habitat and ecology.** Lives in a range of inland habitats, especially along timbered watercourses which is the preferred breeding habitat. Also hunts over grasslands and sparsely timbered woodlands. Not a powerful hunter, despite its size, mostly taking reptiles, small mammals, birds, including nestlings, and carrion. Also specialises in feeding on large eggs, including those of emus, which it cracks on a rock. Breeds from August to October near water in a tall tree. The stick nest is large and flat and lined with green leaves. Normally two eggs are laid (DEC threatened species website 2005).	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Hieraaetus morphnoides	Little Eagle	Animal > Birds	Vulnerable TSC Act	Predicted	Occupies open eucalypt forest, woodland or open woodland. Sheoak or acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. Lays two or three eggs during spring, and young fledge in early summer. Preys on birds, reptiles and mammals, occasionally adding large insects and carrion.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Hirundapus caudacutus	White-throated Needletail	Animal > Birds	Migratory Species EPBC Act	Predicted	In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground . Because they are aerial, it has been stated that conventional habitat descriptions are	Has potential to occur but was not recorded.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					inapplicable , but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland . They also commonly occur over heathland , but less often over treeless areas, such as grassland or swamps . When flying above farmland, they are more often recorded above partly cleared pasture, plantations or remnant vegetation at the edge of paddocks. In coastal areas, they are sometimes seen flying over sandy beaches or mudflats, and often around coastal cliffs and other areas with prominent updraughts, such as ridges and sand-dunes. They are sometimes recorded above islands well out to sea.	The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Hylacola cauta	Shy Heathwren	Animal > Birds	Vulnerable TSC Act	Predicted	Generally occurs singly or in pairs, where it can be secretive, keeping within dense vegetation. In spring, males may sing from the top of low shrubs. Inhabits mallee woodlands with a relatively dense understorey of shrubs and heath plants. The central NSW population (for example in Cocoparra NP) also occurs at low densities in rocky hilltop vegetation with a thick shrub layer such as Broombush or Tea-tree. Appears to occur in all age classes of vegetation, though believed to prefer either one to five years following fire when the resprouting eucalypts provide dense vegetation cover or in long unburnt (greater than 40 years) areas which have a well developed shrub layer. Feeds on the ground, almost entirely on insects (cockroaches, grasshoppers, bugs, lerps, beetles, caterpillars, moths, ants, spiders and insect eggs) and rarely on seeds, including those of saltbush. Breeds late winter to early summer and builds a dome-shaped nest in a concealed location on the ground, using a variety of plant materials.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Inland grey box woodland EEC in the SW Slopes, Brigalow Belt South, Cobar Peneplain, and Riverina Bioregions – Gazetted April 2007.	Inland Grey Box Woodland	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	Inland Grey Box Woodland occurs predominately within the Riverina and South West Slopes regions of NSW down to the Victorian border. It includes Albury to the east and may extend out west towards Hay. This community also extends across the slopes and plains in Central and Northern NSW up to the Queensland Border. This includes Yetman and Inverell in the North, Molong to the east of the Central Slopes and plains and out towards Nymagee to the west.	Was not recorded in the Project Site.
Leipoa ocellata	Malleefowl	Animal > Birds	Endangered	Predicted	**Distribution.** Recorded mainly from the southern half of the western NSW, from the Pilliga forest, south-west to the Griffith and Wentworth districts, excluding the southern Riverina. Marked declines in both distribution and abundance have occurred throughout its range in the last 50 years; for example, in NSW they previously occurred east to Temora and north to around Cobar. Disjunct records occur at "Wallanburra" Station, 45 km south west of Bourke in Mulga/Bimble Box during 1991, Gongolgon in 1994, and Goulbourn River National Park in 1989, however the current status of these populations is unknown. Malleefowl will occupy areas within five years of fire, however they prefer older age classes.	Recorded close by to the Project Site. Targeted assessment of the impact footprints demonstrated that the species would not be affected (habitat is unlikely to support the species).

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					Habitat and ecology. Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300-450 mm mean annual rainfall) areas. Less frequently found in other eucalypt woodlands (e.g., mixed Western Grey Box and Yellow Gum or Bimble Box, Ironbark-Callitris Pine, Callitris Pine, Mulga Acacia aneura, and Gidgee A. cambagei). Prefers areas of light sandy to sandy loam soils and habitats with a dense but discontinuous canopy, dense and variable shrub and herb layers. A pair may occupy a range of between 50 and 500 ha, overlapping with those of their neighbours. Mainly forage in open areas on seeds of acacias and other native shrubs (Cassia, Beyeria, Bossiaea), buds, flowers and fruits of herbs and various shrubs, insects (cockroaches, ants, soil invertebrates), and cereals if available. Incubate eggs in large mounds that contain considerable volumes of sandy soil. The litter within the mounds must be dampened for it to decompose and provide heat for incubation of eggs. (OE&HW threatened species web page 2010)	
Lepidium monoplocoides	Winged Peppercress	Plant> Forbes and Herbs	Endangered Conservation status in NSW: Endangered National conservation status: Endangered	Predicted	Occurs on seasonally moist to waterlogged sites, on heavy fertile soils, with a mean annual rainfall of around 300-500 mm. Predominant vegetation is usually an open woodland dominated by *Allocasuarina luehmannii* (Bullоak) and/or eucalypts, particularly *Eucalyptus largiflorens* (Black Box) or *Eucalyptus populnea* (Poplar Box). The field layer of the surrounding woodland is dominated by tussock grasses. Recorded in a wetland-grassland community comprising *Eragrostis australasicus, Agrostis avenacea, Austrodanthonia duttoniana, Homopholis proluta, Myriophyllum crispatum, Utricularia dichotoma* and *Pycnosorus globosus*, on waterlogged grey-brown clay. Also recorded from a *Maireana pyramidata* shrubland. Flowers from late winter to spring, or August to October. The species is highly dependent on seasonal conditions. Occurs in periodically flooded and waterlogged habitats and does not tolerate grazing disturbance. The number of plants at each site varies greatly with seasonal conditions, but sites tend to be small in area with local concentrations of the plant. Has been recorded as uncommon to locally common with hundreds of plants at sites.	Has potential to occur but was not recorded. Habitat this species is associated with would remain unaffected by the impact. The assessment included targeted inspection for this species (was dependant on high rainfall which was experienced during the assessment). Potential to occur was reduced given the levels of grazing and lack of detection during favourable climatic conditions (note: Australian plants may flower outside of 'normal' times of year if environmental conditions are favourable). This species will not be affected by the Proposal.
Limosa limosa	Black-tailed Godwit	Animal > Birds	Vulnerable	Known	**Distribution.** The Black-tailed Godwit is a migratory wading bird that breeds in Mongolia and Eastern Siberia (Palaearctic) and flies to Australia for the southern summer, arriving in August and leaving in March. In NSW, it is most frequently	Has potential to occur but was not recorded.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					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. The species has been recorded within the Murray-Darling Basin, on the western slopes of the Northern Tablelands and in the far north-western corner of the state. **Habitat and ecology.** Primarily a coastal species. Usually found in sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. Further inland, it can also be found on mudflats and in water less than 10 cm deep, around muddy lakes and swamps. Individuals have been recorded in wet fields and sewerage treatment works. Forages for insects, crustaceans, molluscs, worms, larvae, spiders, fish eggs, frog eggs and tadpoles in soft mud or shallow water. Roosts and loafs on low banks of mud, sand and shell bars. Frequently recorded in mixed flocks with Bar-tailed Godwits.	The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Macquaria austrsissica	Macquarie Perch	Animal > Fish	Vulnerable EPBC	Predicted	The Macquarie Perch is a riverine, schooling species. It prefers clear water and deep, rocky holes with lots of cover. As well as aquatic vegetation, additional cover may comprise of large boulders, debris and overhanging banks. Spawning occurs just above riffles (shallow running water). Populations may survive in impoundments if able to access suitable spawning sites. Spawning sites used by the Macquarie Perch in the rivers flowing into Lake Eildon (between 1966–69) consisted of rubble substrate of small boulders, pebbles and gravel. Water depth was 0.2–0.9 m (usually 0.4–0.6 m) and water velocity was 0.3–0.6 m/s. There was also a pool (usually 15–30 m long and at least 1.5 m deep) immediately upstream and fast-flowing broken water immediately downstream. Although this species can tolerate temperatures of < 9 °C (the temperature of the water at the bottom of Lake Eildon) they appear to require a temperature of at least 16.5 °C for spawning to occur. Newly hatched yolk sac larvae shelter amongst pebbles. In Seven Creeks, this species occurred in deep pools and riffles above falls where the substrate was gravel and boulders.	The Project Site does not possess habitat for this species. This species would not be affected by the Proposal.
Maccullochella pelii peelii	Murray Cod	Animal > Fish	Vulnerable EPBC	Predicted	The Murray Cod is found in a wide range of warm water habitats, from clear, rocky streams to slow-flowing turbid rivers and billabongs. Generally, they are found in waters up to 5 m deep and in sheltered areas with cover from rocks, timber or overhanging banks. The species is highly dependent on wood debris for habitat, using it to shelter from fast-flowing water.	The Project Site does not possess habitat for this species. This species would not be affected by the Proposal.
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Animal > Birds	Vulnerable	Known	**Distribution.** The Hooded Robin is common in few places, and rarely found on the coast. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form is found from Brisbane to Adelaide throughout much of inland NSW, with the exception of the north-west. The species is	Has potential to occur but was not recorded. The assessment included

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. **Habitat and ecology**. The nest is a small, neat cup of bark and grasses bound with webs, in a tree fork or crevice, from less than 1 m to 5 m above the ground. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. Often perches on low dead stumps and fallen timber or on low-hanging branches, using a perch-and-pounce method of hunting insect prey. Territories range from around 10 ha during the breeding season, to 30 ha in the non-breeding season. May breed any time between July and November, often rearing several broods. The nest is defended by both sexes with displays of injury-feigning, tumbling across the ground. A clutch of two to three is laid and incubated for fourteen days by the female. Two females often cooperate in brooding (OE&HW threatened species web page 2010)	targeted inspection for this species. This species would not be affected by the proposed work.
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Animal > Birds	Vulnerable	Known	**Distribution.** The subspecies is widespread, from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. It is rarely recorded east of the Great Dividing Range, although regularly observed from the Richmond River district. It has also been recorded at a few scattered sites in the Hunter, Central Coast and Illawarra regions. **Habitat and ecology.** Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (*Eucalyptus sideroxylon*), White Box (*Eucalyptus albens*), Grey Box (*Eucalyptus microcarpa*), Yellow Box (*Eucalyptus melliodora*) and Forest Red Gum (*Eucalyptus tereticornis*). Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks and tea-trees. A gregarious species usually seen in pairs and small groups of up to 12 birds. Feeding territories are large making the species locally nomadic. Recent studies have found that the Black-chinned Honeyeater tends to occur in the largest woodland patches in the landscape as birds forage over large home ranges of at least 5 hectares. Moves quickly from tree to tree, foraging rapidly along outer twigs, underside of branches and trunks, probing for insects. Nectar is taken from flowers, and honeydew is gleaned from foliage. Breeds solitarily or co-operatively, with up to five or six adults, from June to December. The nest is placed high in the crown of a tree, in the uppermost lateral branches, hidden by foliage. It is a compact, suspended, cup-shaped nest. Two or three eggs are laid and both parents and occasionally helpers feed the young.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Merops ornatus	Rainbow Bee-eater	Animal > Birds	Migratory Species EPBC	Predicted	In northern Australia, it often inhabits mangroves. The bee-eater has also been recorded in other vegetation types including heathland, sedge land, semi-	The assessment included targeted inspection for this

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
			Act		evergreen mesophyll vine forest, and semi-deciduous vine thicket, and at the ecotone between open forest and closed monsoon forest. It also inhabits sand dune systems in coastal areas and at inland sites that are in close proximity to water, and has occasionally been recorded on beaches and coral cays. The Rainbow Bee-eater is also common in cleared and semi-cleared habitats. It occurs in farmland, orchards and vineyards, and is regularly recorded in other disturbed habitats including roadside vegetation and in quarries, mines or gravel pits, where they often breed. It has also been recorded in towns and suburbs and around homesteads. On migration, the Rainbow Bee-eater may also fly over the top of non-preferred habitats such as rainforest or treeless plains. The Rainbow Bee-eater has not been formally identified to occur in any threatened ecological communities. However, the widespread distribution of the bee-eater, and the variety of habitats that it has been recorded in, indicate that it could potentially occur in some of the threatened ecological communities listed under the *EPBC Act 1999*.	species as well as tunnels in steep sided embankments used for breeding. It was not recorded in the area. This species will not be affected by the Proposal.
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South western Slopes bioregions	Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South western Slopes bioregions	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Distribution.** This EEC is known from parts of the Local Government Areas of Berrigan, Bland, Bogan, Carrathool, Conargo, Coolamon, Coonamble, Corowa, Forbes, Gilgandra, Griffith, Gwydir, Inverell, Jerilderee, Lachlan, Leeton, Lockhart, Moree Plains, Murray, Murrumbidgee, Narrabri, Narranderra, Narromine, Parkes, Urana, Wagga Wagga and Warren, and but may occur elsewhere in these bioregions.	This EEC was not recorded in the Project Site.
Neophema pulchella	Turquoise Parrot	Animal > Birds	Vulnerable	Known	**Distribution.** The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. **Habitat and ecology.** Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Usually seen in pairs or small, possibly family, groups and have also been reported in flocks of up to thirty individuals. Prefers to feed in the shade of a tree and spends most of the day on the ground searching for the seeds or grasses and herbaceous plants, or browsing on vegetable matter. Forages quietly and	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					may be quite tolerant of disturbance. However, if flushed it will fly to a nearby tree and then return to the ground to browse as soon as the danger has passed. Nests in tree hollows, logs or posts, from August to December. It lays four or five white, rounded eggs on a nest of decayed wood dust.	
Ninox connivens	Barking Owl	Animal > Birds	Vulnerable	Known	**Distribution.** The barking owl is distributed sparsely throughout temperate and semi-arid areas of mainland Australia, however is most abundant in the tropical north (Kavanagh 2002a). Most records for this species occur west of the Great Dividing Range (Kavanagh 2004). **Habitat and ecology.** Habitat for this species includes dry forests and woodlands (Kavanagh 2002a), often in association with hydrological features such as rivers and swamps (Taylor *et al.* 2002). Large hollows are required for breeding.	Is unlikely to occur and was not recorded. The assessment included targeted inspection for this species. (This species is associated with rivers etc) This species would not be affected by the proposed work.
Nyctophilus timoriensis	Greater Long-eared Bat (south eastern form)	Animal > Bats	Conservation status in NSW: Vulnerable National conservation status: Vulnerable	Predicted	**Distribution.** The Greater Long-eared Bat is found across much of inland southern Australia and north-eastern Tasmania. It reaches the coast in subtropical Queensland and from the Eyre Peninsula to north of Perth. **Habitat and ecology.** Generally associated with the semi-arid woodlands and mallee. Roosts in tree hollows, crevices, and under loose bark. Slow flying agile bat, utilising the understorey to hunt non-flying prey - especially caterpillars and beetles - and will even hunt on the ground. Mating takes place in autumn with one or two young born in late spring to early summer.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Oxyura australis	Blue-billed Duck	Animal > Birds	Vulnerable	Known	**Distribution.** The Blue-billed Duck is endemic to south-eastern and south-western Australia. It is widespread in NSW, but most common in the southern Murray-Darling Basin area. Birds disperse during the breeding season to deep swamps up to 300 km away. It is generally only during summer or in drier years that they are seen in coastal areas. **Habitat and ecology.** The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. It will fly if disturbed, but prefers to dive if approached. Blue-billed Ducks will feed by day far from the shore, particularly if dense cover is available in the central parts of the wetland. They feed on the bottom of swamps eating seeds, buds, stems, leaves, fruit and small aquatic insects such as the larvae of midges, caddisflies and dragonflies. Blue-billed Ducks are partly migratory, with short-distance movements between breeding swamps and over-wintering lakes with some long-	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					distance dispersal to breed during spring and early summer. Blue-billed Ducks usually nest solitarily in Cumbungi over deep water between September and February. They will also nest in trampled vegetation in Lignum, sedges or Spike-rushes, where a bowl-shaped nest is constructed. The most common clutch size is five or six. Males take no part in nest-building or incubation. Young birds disperse in April-May from their breeding swamps in inland NSW to non-breeding areas on the Murray River system and coastal lakes (DEC threatened species website 2005).	
Pachycephala inornata	Gilbert's Whistler	Animal > Birds	Vulnerable	Predicted	**Distribution**. The Gilbert's Whistler is sparsely distributed over much of the arid and semi-arid zone of inland southern Australia, from the western slopes of NSW (south from the Warrumbungles) to almost the Western Australian coast. The species was once distributed almost continuously across the southern mallee of NSW. There are now only three separate populations left in NSW. Most of the eastern population occurs in an area enclosed by a line joining Gilgandra to Cobar, then south to Narrandera, east to Wagga Wagga, north to Wellington and back to Gilgandra. The species is also recorded along the Murray River Valley between Mathoura and Wentworth. There is a restricted population in the Scotia mallee area north of Wentworth. The Gilbert's Whistler occurs in ranges, plains and foothills in arid and semi-arid timbered habitats. In NSW it occurs mostly in mallee shrubland, but also in box-ironbark woodlands, Cypress Pine and Belah woodlands and River Red Gum forests. Within the mallee the species is often found in association with an understorey of spinifex and low shrubs including acacias, hakeas, sennas and grevilleas. In woodland habitats, the understorey comprises dense patches of shrubs. **Habitat and ecology.** The Gilbert's Whistler forages on or near the ground in shrub thickets and in tops of small trees. Its food consists mainly of spiders and insects such as caterpillars, beetles and ants. Occasionally, seeds and fruits are eaten. The young are fed insects. Breeding takes place from August to November. Patches of dense understorey shrubs associated with mallee or woodland are essential for territorial pairs to breed. Aggregations of nesting pairs are sometimes recorded. At Cowra three pairs nested in a 25 ha area. Nests are built 2 m above the ground in the fork of dense foliage of prickly plants such as acacias. The nest is either a lined cup or sometimes birds use the old nests of other species, particularly disused babblers' nests. Two or three eggs, occasionally four, are laid. The pair holds and defends the territory all year round. Whistlers do not make any regular large-scale movements, though young disperse after fledging.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Pachycephala	Red-lored	Animal >	Critically	Predicted	Found in mallee woodland with a shrub layer, usually of Broombush and native	Has potential to occur but

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
rufogularis	Whistler	Birds	Endangered TSC Act, Vulnerable EPBC Act		pine such as Mallee Pine (*Callitris verrucosa*), with occasional patches of spinifex and emergent mallee, forming a relatively dispersed canopy. Occupies vegetation with a post fire age of 4-40 years, but is most abundant in areas with a post fire age of 21-40 years. Feeds mainly on the ground, eating invertebrates (airborne and ground-dwelling, including caterpillars, weevils, grasshoppers, beetles, larvae), and some berries and seeds. A substantial cup nest is constructed by these birds, mainly of coarse bark and mallee leaves, neatly woven around the rim, located within low shrubs (e.g. Broombush).	was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Petroica phoenicea	Flame Robin	Animal > Birds	Vulnerable TSC Act	Predicted	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. The groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense. Occasionally occurs in temperate rainforest, and also in herbfields, heathlands, shrublands and sedgelands at high altitudes. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains). Often occurs in recently burnt areas; however, habitat becomes unsuitable as vegetation closes up following regeneration. In winter lives in dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees. In winter, occasionally seen in heathland or other shrublands in coastal areas. Birds forage from low perches, from which they sally or pounce onto small invertebrates which they take from the ground or off tree trunks, logs and other coarse woody debris. Flying insects are often taken in the air and sometimes gleans for invertebrates from foliage and bark. In their autumn and winter habitats, birds often sally from fence-posts or thistles and other prominent perches in open habitats. Occur singly, in pairs, or in flocks of up to 40 birds or more; in the non-breeding season they will join up with other insectivorous birds in mixed feeding flocks. Breeds in spring to late summer. Nests are often near the ground and are built in sheltered sites, such as shallow cavities in trees, stumps or banks. Builds an open cup nest made of plant materials and spider webs. Eggs are oval in shape and are pale bluish- or greenish-white and marked with brownish blotches; clutch size is three or four eggs.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Phascolarctos cinereus	Koala	Animal > Marsupials	Vulnerable	Known	**Distribution.** The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In NSW it mainly occurs on the central and north coasts with some populations in the western region. It was historically abundant on the south coast of NSW, but now occurs in sparse and possibly disjunct populations. Koalas are also known from several sites on the southern tablelands. **Habitat and ecology**. Spend most of their time in trees, but will descend and traverse open ground to move between trees. Home range size varies with quality of habitat, ranging from less than two ha to several hundred hectares in size. Generally solitary, but have complex social hierarchies based on a dominant male	Has potential to occur along Sandy Creek but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					with a territory overlapping several females and sub-ordinate males on the periphery. Females breed at two years of age and produce one young per year. Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species. Inactive for most of the day, feeding and moving mostly at night.	
Polytelis swainsonii	Superb Parrot	Animal > Birds	Vulnerable	Known	**Distribution.** The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. It is estimated that there are less than 5000 breeding pairs left in the wild. **Habitat and ecology.** Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest. In the Riverina the birds nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum Forest or Woodland. On the South West Slopes nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakelys Red Gum, Yellow Box, Apple Box and Red Box. Nest in small colonies, often with more than one nest in a single tree. Breed between September and January. May forage up to 10 km from nesting sites, primarily in grassy box woodland. Feed in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds and herbaceous plants. Also eaten are fruits, berries, nectar, buds, flowers, insects and grain.	Recorded in Project Site. An assessment of significance has been provided.
Pomatostomus halli	Hall's Babbler	Animal > Birds	Conservation status in NSW: Vulnerable	Not predicted	Inhabits dry Acacia scrub, mainly Mulga, with a grassy understorey including spinifex, on ridges and plains with either sandy or stony soils. Occasionally occurs in open dry Eucalyptus (Bimblebox) woodland, and mulga- or eucalypt-lined watercourses. Hall's Babblers construct neat spherical dome nests, each with a side entrance, from twigs within the outer branches of acacias, in the upright forks of mulgas and Casuarina, or in a horizontal eucalypt branch 3-10 m above the ground. Probably sedentary, maintaining home ranges of up to several hectares which contain a clump of roosting nests, each securely attached to small branches just inside the foliage, 3-7 m above the ground. Appear to occur in very localised patches. These noisy birds are frequently observed in flocks of up to 20 individuals. These birds feed mostly on the ground in grassy areas, they also glean and probe on trunks and branches. Diet includes insects (especially beetle pupae and	Recorded in McKinnons Pipeline. A 7-part test has been provided.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					caterpillars), spiders and seeds.	
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Animal > Birds	Conservation status in NSW: Vulnerable	Known	**Distribution.** The Grey-crowned Babbler is found throughout large parts of northern Australia and in south-eastern Australia. In NSW, the eastern sub-species occur on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Hay. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands. **Habitat and ecology.** Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Flight is laborious so birds prefer to hop to the top of a tree and glide down to the next one. Birds are generally unable to cross large open areas. Live in family groups that consist of a breeding pair and young from previous breeding seasons. A group may consist of up to fifteen birds. All members of the family group remain close to each other when foraging. A soft 'chuck' call is made by all birds as a way of keeping in contact with other group members. Feed on invertebrates, either by foraging on the trunks and branches of eucalypts and other woodland trees or on the ground, digging and probing amongst litter and tussock grasses. Build and maintain several conspicuous, dome-shaped stick nests about the size of a football. A nest is used as a dormitory for roosting each night. Nests are usually located in shrubs or sapling eucalypts, although they may be built in the outermost leaves of low branches of large eucalypts. Nests are maintained year round, and old nests are often dismantled to build new ones. Breed between July and February. Usually two to three eggs are laid and incubated by the female. During incubation, the adult male and several helpers in the group may feed the female as she sits on the nest. Young birds are fed by all other members of the group. Territories range from one to fifty hectares (usually around ten hectares) and are defended all year. Territorial disputes with neighbouring groups are frequent and may last up to several hours, with much calling, chasing and occasional fighting (OE&HW threatened species web page 2010).	Recorded in McKinnons Pipeline. A 7-part test has been provided.
Pterostylis cobarensis	Greenhood Orchid	Plant > Orchids	Conservation status in NSW: Vulnerable National conservation status: Vulnerable	Known	**Distribution.** Known chiefly from the Nyngan-Cobar-Bourke district in the far western plains of New South Wales. Recorded districts include Narrabri, Nyngan, Cobar, Nymagee, Mt Gundabooka, Mt Grenfel and Mutawintji National Park. There are also records from the Darling Downs district of Queensland. **Habitat and ecology.** The group includes some of the most drought tolerant orchids in Australia. Survival strategies include the large tuberoids which store moisture, the overlapping rosette leaves which trap moisture and direct it to the root zone, and the tendency to grow in sites of litter accumulation and near rocks where run-off is concentrated. *Pterostylis cobarensis* occurs as frequent to abundant plants sometimes occasional) in usually very localised populations.	Possible. Further work recommended during flowering period to detect it.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					Pollinated by the males of small gnats which are attracted to the flower by some pseudosexual perfume. Habitats are eucalypt woodlands, open mallee or *Callitris* shrublands on low stony ridges and slopes in skeletal sandy-loam soils. Associated species include *Eucalyptus morrisii, E. viridis, E. intertexta, E. vicina, Callitris glaucophylla, Geijera parviflora, Casuarina cristata, Acacia doratoxylon, Senna* spp. and *Eremophila* spp. Flowers from September to November. Vegetative reproduction is not common in this group of Greenhoods, but some species may form more than one dropper annually. Plants are deciduous and die back to the large, underground tubers after seed release. New rosettes are produced following soaking autumn and winter rains.	
Pyrrholaemus brunneus	Redthroat	Animal > Birds	Conservation status in NSW: Vulnerable	Predicted	**Distribution** Endemic to southern mainland Australia in all States and the NT, the Redthroat is a sedentary species with no known large-scale seasonal movements. In NSW, the species is confined to the far west of the state, with populations known from four main areas, though the species is probably under-recorded due to its shy habits and low observer numbers within its distribution. A population exists in the Bulloo Overflow to the east of Tibooburra, with occasional records further to the west in Sturt NP. There are records from around Broken Hill extending at least as far north as Mutawintji NP. The two areas in the south west of NSW is in chenopod shrublands (particularly Old Man Saltbush) to the north of Penarie, 25 kilometres north of Balranald and around the Great Darling Anabranch (particularly around Nearie Lake NR) to the north of Wentworth. Scattered records are known from other locations, such as around Lake Victoria and near Oxley, so further survey may reveal greater numbers in NSW. **Habitat and ecology** •This species is usually solitary or in pairs and males can be very vocal and frequently mimic the calls of other birds. However, it is generally a shy and unobtrusive species, feeding quietly on the ground or in low shrubs, and flying rapidly between shrubs when disturbed, making observation difficult. •In NSW the species has been recorded mainly in chenopod shrublands including Old Man Saltbush, Black Bluebush and Dillon Bush shrublands. Around Broken Hill it appears to be associated with the denser vegetation, particularly Acacias, found in drainage lines that run from the rocky hills. In other locations it is known from Canegrass and Lignum swamps and depressions, particularly on floodplains. •In other parts of its range, the Redthroat mainly inhabits acacia (particularly Mulga) and chenopod shrublands, often along watercourses or drainage lines. At this point of time it is not known from Mulga woodlands in NSW. More rarely it is also known to occur in mallee with a diverse heath shrub layer (SA/Victoria), taller	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.

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					semi-arid woodlands (WA), heathlands dominated by banksia and tea tree (Victoria) and shrublands with a White Cypress Pine overstorey (SA). •Breeds in late winter to spring and builds a bulky dome-shaped nest with a side entrance from coarse strips of bark, grass and feathers. The nest is located in shrubs or small trees up to one metre above the ground and usually contains two to four eggs. •Their diet consists of a wide variety of terrestrial invertebrates (beetles, ants, termites, earwigs, grasshoppers, bugs, caterpillars, butterflies, moths, wasps and spiders) and grass seeds gathered from the ground and amongst low foliage.	
Pyrrholaemus sagittatus	Speckled Warbler	Animal > Birds	Vulnerable	Known	**Distribution.** The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. There has been a decline in population density throughout its range, with the decline exceeding 40% where no vegetation remnants larger than 100ha survive. **Habitat and ecology.** The Speckled Warbler lives in a wide range of eucalypt dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area. The diet consists of seeds and insects, with most foraging taking place on the ground around tussocks and under bushes and trees. Pairs are sedentary and occupy a breeding territory of about ten hectares, with a slightly larger home-range when not breeding. The rounded, domed, roughly built nest of dry grass and strips of bark is located in a slight hollow in the ground or the base of a low dense plant, often among fallen branches and other litter. A side entrance allows the bird to walk directly inside. A clutch of 3-4 eggs is laid, between August and January, and both parents feed the nestlings. The eggs are a glossy red-brown, giving rise to the unusual folk names 'Blood Tit' and 'Chocolatebird'. Some cooperative breeding occurs. The species may act as host to the Black-eared Cuckoo. Speckled Warblers often join mixed species feeding flocks in winter, with other species such as Yellow-rumped, Buff-rumped, Brown and Striated Thornbills.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Rostratula benghalensis australis	Painted Snipe (Australian subspecies) -	Animal > Birds	Conservation status in NSW: Endangered National conservation status:	Known	**Distribution.** In NSW, this species has been recorded at the Paroo wetlands, Lake Cowell, Macquarie Marshes and Hexham Swamp. Most common in the Murray-Darling Basin. **Habitat and ecology.** Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. The nest	Has very low potential to occur and was not recorded. The assessment included targeted inspection for this

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
			Vulnerable		consists of a scrape in the ground, lined with grasses and leaves. Breeding is often in response to local conditions; generally occurs from September to December. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter.	species. This species would not be affected by the proposed work.
Rulingia procumbens	Rulingia procumbens	Plant > Forb, Herb	Vulnerable TSC and EPBC Acts	Predicted	Recorded in *Eucalyptus dealbata* and *Eucalyptus sideroxylon* communities, *Melaleuca uncinata* scrub, under mallee eucalypts with a *Calytrix tetragona* understorey, and in a recently burnt Ironbark and *Callitris* area. Also in *Eucalyptus fibrosa* subsp. *nubila, Eucalyptus dealbata, Eucalyptus albens* and *Callitris glaucophylla* woodlands north of Dubbo. Other associated species include *Acacia triptera, Callitris endlicheri, Eucalyptus melliodora, Allocasuarina diminuta, Philotheca salsolifolia, Xanthorrhoea* species, *Exocarpos cupressiformis, Leptospermum parvifolium* and *Kunzea parvifolia*. Fruiting period is summer to autumn. Flowers from August to December. Appears to produce seed which persists for some time in the seed bank. Large numbers of seedlings have been observed germinating after fire at sites where the species was not apparent above ground before the fires. Clusters of individuals may be clonal. The species is often found as a pioneer species of disturbed habitats. It has been recorded colonising disturbed areas such as roadsides, the edges of quarries and gravel stockpiles and a recently cleared easement under power lines. Has been recorded in populations of 50+ individuals of various ages, 28 plants on the western side of the road and 58 plants on the sunnier eastern side. Populations may comprise a single cohort of individuals, or have a multi-aged structure where some individuals appear to be old with thickened runners.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Animal > Bats	Vulnerable	Known	**Distribution.** The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. In the most southerly part of its range - most of Victoria, south-western NSW and adjacent South Australia - it is a rare visitor in late summer and autumn. There are scattered records of this species across the New England Tablelands and North West Slopes. **Habitat and ecology**. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. Breeding has been recorded from December to mid-March, when a single young is born. Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn.	Recorded in Project Site. A 7-part test has been provided.
Simoselaps fasciolatus	Narrow-banded Snake -	Animal > Reptile	Conservation status in NSW: Vulnerable	Known	**Distribution** North-western NSW. Recorded near the Paroo River, White Cliffs and Mutawintji National Park.	Was not captured in the Project Site. Distribution is not consistent with the

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					Habitat and ecology ◦A nocturnal burrowing snake that shelters under well embedded fallen timber and stumps, in associated soil cracks and holes within litter, or under grass hummocks. ◦Feeds primarily on skinks and reptile eggs. ◦Prefers open woodland or shrubland, sometimes with a hummock grass understorey.	area.
Sminthopsis macroura	Stripe-faced Dunnart	Animal > Marsupials	Vulnerable	Known	**Distribution.** Throughout much of inland central and northern Australia, extending into central and northern NSW, western Queensland, Northern Territory, South Australia and Western Australia. They are rare on the NSW Central West Slopes and North West Slopes with the most easterly records of recent times located around Dubbo, Coonabarabran, Warialda and Ashford. **Habitat and ecology.** Native dry grasslands and low dry shrublands, often along drainage lines. During periods of hot weather they shelter in cracks in the soil, in grass tussocks or under rocks and logs.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Stagonopleura guttata	Diamond Firetail	Animal > Birds	Vulnerable	Known	**Distribution**. The diamond firetail is a sedentary finch species which has a recorded habitat of open grassy woodland, mallee and forest, usually in the vicinity of watercourses, wooded urban fringes and smaller town outskirts. **Habitat and ecology**. This species may opportunistically use the woodland galleries The diamond firetail requires regular visits to watering sites during feeding activities.	Has potential to occur (around Sandy Creek) but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Stictonetta naevosa	Freckled Duck	Animal > Birds	Vulnerable	Known	**Distribution**. The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. The species may also occur as far as coastal NSW and Victoria during such times. **Habitat and ecology.** Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. Generally rest in dense cover during	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.

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					the day, usually in deep water. Feed at dawn and dusk and at night on algae, seeds and vegetative parts of aquatic grasses and sedges and small invertebrates. Nesting usually occurs between October and December but can take place at other times when conditions are favourable. Nests are usually located in dense vegetation at or near water level (DEC threatened species website 2005).	
Swainsona murrayana	Slender Darling-pea	Plant> Herb & Forb	Conservation status in NSW: Vulnerable National conservation status: Vulnerable	Predicted	The species has been collected from clay-based soils, ranging from grey, red and brown cracking clays to red-brown earths and loams. Grows in a variety of vegetation types including bladder saltbush, black box and grassland communities on level plains, floodplains and depressions and is often found with Maireana species. Plants have been found in remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated. Plants produce winter-spring growth, flower in spring to early summer and then die back after flowering. They re-shoot readily and often carpet the landscape after good cool-season rains. The species may require some disturbance and has been known to occur in paddocks that have been moderately grazed or occasionally cultivated. *Swainsona* species contain a poisoning principle, swainsonine, which affects the nervous system and is toxic to stock.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Tiliqua occipitalis	Western Blue-tongued Lizard	Animal> reptile	Vulnerable TS C Act	Predicted	Diurnally forages for insects, snails, native vegetation and carrion. Inhabits plains, swales, ranges and sometimes dunes of loamy or clayey/sandy soils vegetated by woodlands, especially mallee, shrublands (including chenopods), heaths or hummock grasslands. Preferred vegetation type appears to be mixed mallee/Triodia communities. Terrestrial, and known to utilise rabbit warrens for shelter	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species will not be affected by the Proposal.
Tyto novaehollandiae	Masked Owl	Animal > Birds	Vulnerable	Known	**Distribution.** Extends from the coast where it is most abundant to the western plains. Overall records for this species fall within approximately 90% of NSW, excluding the most arid north-western corner. There is no seasonal variation in its distribution. **Habitat and ecology.** Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. The typical diet consists of tree-dwelling and ground mammals, especially rats. Pairs have a large home-range of 500 to 1000 hectares. Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting.	Has potential to occur but was not recorded. The assessment included targeted inspection for this species. This species would not be affected by the proposed work.
Vespadelus baverstocki	Inland Forest Bat	Animal > Bat	Vulnerable TSC Act	Predicted	Roosts in tree hollows and abandoned buildings. Known to roost in very small hollows in stunted trees only a few metres high. The habitat requirements of this species are poorly known but it has been recorded from a variety of woodland	Has potential to occur but was not recorded.

Scientific Name	Common Name	Type of species	Level of Threat	Known or Predicted to occur	Habitat requirements (as per OE&H or SEWPAC websites)	Potential for this species to occur in the Project Site.
					formations, including mallee, mulga and River Red Gum. Most records are from drier woodland habitats with riparian areas inhabited by the Little Forest Bat. However, other habitats may be used for foraging and/or drinking. Colony size ranges from a few individuals to more than sixty. Females congregate to raise young in November and December, with young carried for the first week following birth. Young are independent by January. These bats fly rapidly and cover an extensive foraging area and are presumed to feed on flying insects.	The assessment included targeted inspection for this species. This species will not be affected by the Proposal.