

APPENDIX 6 – THREATENED AND MIGRATORY BIOTA EVALUATION (LISTED UNDER NSW ACTS)

DISCLAIMER

This report was prepared by Australian Wildlife Conservancy in good faith exercising all due care and attention, but no representation or warranty, express or implied, is made as to the relevance, accuracy, completeness or fitness for purpose of this document in respect of any particular user's circumstances. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect of, their situation. The views expressed within are not necessarily the views of the Office of Environment and Heritage (OEH) and may not represent OEH policy.

© Copyright State of NSW and the Office of Environment and Heritage

Method

When evaluating which threatened and migratory biota listed under either the NSW Threatened Species Conservation Act 1995 (TSC Act) or NSW Fisheries Management Act 1994 (FM Act) are likely to occur within the study area, the following factors were taken into consideration:

- the presence of potential habitat;
- condition of and approximate extent of potential habitat;
- species occurrence within study area and wider locality.

The following criteria were applied to each entity based on the above to determine the likelihood of species occurrence within the study area:

- No (no suitable habitat present and the species not previously recorded within the locality; or in the case of flora, study area extensively searched during the appropriate time of year for detection and species not present);
- Unlikely (no suitable habitat is present, but previously recorded within the locality);
- Low (some suitable habitat present and the species known from the locality; species may infrequently visit the study area en route to foraging resources, but do not depend on the habitats of the study area for survival);
- Moderate (study area contains habitat that could support a population of a species);
- High (study area contains habitat that is likely to support a population of the species including roosting, breeding and foraging habitat);
- Yes (species recorded during the field survey by AWC ecologists).

Biota that are associated with littoral or marine habitats have been excluded from the analysis. All matters of National Environmental Significance that were in the Protected Matters Search Tool report for the vicinity of the proposed activity are assessed under the criteria set out in the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) in Appendix 8.

Legend for Table A6-1

V	Vulnerable
E	Endangered
CE	Critically Endangered
PE	Presumed Extinct
M	Migratory
POP	Endangered Population
TSC	NSW Threatened Species Conservation Act 1995
FM	NSW Fisheries Management Act 1994

Table A6-1: Assessment of the known or predicted threatened and migratory biota known from the Namoi CMA, Pilliga Outwash CMA sub-region and their likelihood of occurrence within the vicinity of the proposal.

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
EXTINCT MAMMALS TO BE REINTRODUCED				
Western Quoll <i>Dasyurus geoffroi</i> PE TSC	See section 4.4.1 of this REF	Presumed Extinct in NSW	Presumed Extinct in NSW	Yes, as a reintroduced species
Western Barred Bandicoot <i>Perameles bougainville</i> PE TSC	See section 4.4.2 of this REF	Presumed Extinct in NSW	Presumed Extinct in NSW	Yes, as a reintroduced species
Bilby <i>Macrotis lagotis</i> PE TSC	See section 4.4.3 of this REF	Presumed Extinct in NSW	Presumed Extinct in NSW	Yes, as a reintroduced species
Northern Hairy-nosed Wombat <i>Lasiorhinus krefftii</i> PE TSC	See section 4.4.4 of this REF	Presumed Extinct in NSW	Presumed Extinct in NSW	Yes, as a reintroduced species
Brush-tailed Bettong <i>Bettongia penicillata ogilbyi</i> PE TSC	See section 4.4.5 of this REF	Presumed Extinct in NSW	Presumed Extinct in NSW	Yes, as a reintroduced species
Bridled Nailtail Wallaby <i>Onychogalea fraenata</i> PE TSC	See section 4.4.6 of this REF	Presumed Extinct in NSW	Presumed Extinct in NSW	Yes, as a reintroduced species
Plains Mouse <i>Pseudomys australis</i>	See section 4.4.7 of this REF	Presumed Extinct in NSW	Presumed Extinct in NSW	Yes, as a reintroduced species

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
PE TSC				
AVIFAUNA				
Australian Bustard <i>Ardeotis australis</i> E TSC	Mainly inhabits tussock and hummock grasslands and low shrublands; occasionally seen in pastoral and cropping country.	No	Yes	Unlikely
Australian Painted Snipe <i>Rostratula australis</i> E TSC	Inhabits inland and coastal shallow freshwater wetlands, occurring in both ephemeral and permanent wetlands with grass. Generally, only seen as a single bird. The breeding wetland areas are the most sensitive to this species.	No	Yes	Low
Australasian Bittern <i>Botaurus poiciloptilus</i> E TSC	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (<i>Typha</i> spp.) and spikerushes (<i>Eleocharis</i> spp.).	No	Yes	Low
Barking Owl <i>Ninox connivens</i> V TSC	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. Requires very large permanent territories in most habitats due to sparse prey densities. Monogamous pairs hunt over as much as 6000 ha, with 2000 ha being more typical in NSW habitats. In western NSW, this species is largely confined to riparian areas where suitable habitat also occurs.	Yes	Yes	Yes
Black Falcon <i>Falco subniger</i> V TSC	Occurs along tree-lined watercourses and in isolated woodlands, mainly in arid and semi-arid areas.	No	No	Low

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
Black-chinned Honeyeater (eastern subspecies) <i>Melithreptus gularis gularis</i> V TSC	This species occupies the upper levels of drier open forest or woodland dominated by Box and Ironbark, especially Mugga Ironbark, White Box, Inland Grey Box and Forest Red Gum. Forests of smooth bark, stringybark, ironbark and tea trees are also known to be used. Their feeding territories can be large, up to 5 ha in area	No	Yes	Moderate
Black-breasted Buzzard <i>Hamirostra melanosternon</i> V TSC	This species inhabits a range of inland habitats, especially along timbered watercourses but also hunts over grasslands. It is sparsely distributed in areas that have less than 500mm of rainfall, but avoids areas of desert.	No	Yes	Unlikely
Black-necked Stork <i>Ephippiorhynchus asiaticus</i> E TSC	Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries. Storks usually forage in water 5-30cm deep for vertebrate and invertebrate prey.	No	Yes	Low
Black-tailed Godwit <i>Limosa limosa</i> V TSC	This species is primarily coastal dwelling, usually in sheltered bays, estuaries and lagoons with intertidal mudflat/sandflat areas. Inland dwellers require mudflats also where they inhabit areas where water may be less than 10cm deep. Areas of muddy lakes and swamp are also used. The Black-tailed Godwit roosts and loafs on low banks	No	No	Low

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
	of mud, shell and sandbars and is frequently recorded in a flock mixed with Bar-tailed Godwits.			
Blue-billed Duck <i>Oxyura australis</i> V TSC	Prefers deep water in large permanent wetlands and swamps.	No	Yes	Low
Brolga <i>Grus rubicunda</i> V TSC	The Brolga occurs in large open wetlands, grassy plains, coastal mudflats and irrigated croplands, with less frequent mangrove-studded creeks and estuaries.	No	Yes	Unlikely
Brown Treecreeper (eastern subspecies) <i>Climacteris picumnus victoriae</i> V TSC	Found in eucalypt woodland (including Box-Gum Woodland) and dry open forest of the inland slopes and plains of the Great Dividing Range. Mainly inhabiting woodlands dominated by stringy barks or other rough-barked eucalypt, with open grassy understorey.	Yes	Yes	Yes
Bush Stone-curlew <i>Burhinus grallarius</i> E TSC	Inhabits open forests and woodlands with complex microhabitat structure.	Yes	Yes	Yes
Curlew Sandpiper <i>Calidris ferruginea</i> E TSC	It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts.	No	No	Unlikely
Diamond Firetail <i>Stagonopleura guttata</i> V TSC	Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum <i>Eucalyptus pauciflora</i> Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in	No	Yes	Moderate

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
	secondary grassland derived from other communities.			
Dusky Woodswallow <i>Artamus cyanopterus cyanopterus</i> V TSC	The Dusky Woodswallow is found in open forests and woodlands, and may be seen along roadsides and on golf courses	Yes	Yes	Yes
Flame Robin <i>Petroica phoenicea</i> V TSC	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Often moves to low open areas in winter.	No	Yes	Moderate
Scarlet Robin <i>Petroica boodnag</i> V TSC	Occurs in dry eucalypt forests and woodlands.	Yes	Yes	Yes
Freckled Duck <i>Stictonetta naevosa</i> V TSC	Prefers 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.	No	Yes	Low
Glossy Black-Cockatoo <i>Calyptorhynchus lathami</i> V TSC	Inhabits open forest and woodlands of the coast and the Great Dividing Range up to 1000m in which stands of sheoak species, particularly Black Sheoak (<i>Allocasuarina littoralis</i>), Forest Sheoak (<i>A. torulosa</i>) or Drooping Sheoak (<i>A. verticillata</i>) occur.	Yes	Yes	Yes
Gilbert's Whistler <i>Pachycephala inornata</i>	This species is widely recorded in Mallee shrublands and also box-ironbark woodlands, Cypress Pine and	No	Yes	Low

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
V TSC	Belah woodlands and River Red Gum Forests. In the Mallee areas, an understorey of spinifex and low shrubs such as wattles, hakeas, senna and hobbushes are preferred. Its preferred foods are beetles, caterpillars, spiders and ants, occasionally seeds and fruit are eaten. Pairs are thought to defend territories year round and do not appear to venture far from their home area.			
Grey-crowned Babbler (eastern subspecies) <i>Pomatostomus temporalis temporalis</i> V TSC	Inhabits open forests and woodlands, favouring inland plains with open shrub layer, little ground cover and plenty of fallen timber and leaf litter.	Yes	Yes	Yes
Grey Falcon <i>Falco hypoleucos</i> E TSC	The Grey Falcon preys on other birds, mainly parrots and pigeon but are known to also eat reptiles and mammals. This species is usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid areas, although they are sometimes found in open woodlands near the coast. Nest sites are usually high up in living Eucalypt trees near water.	No	No	Unlikely
Gull-billed Tern <i>Gelochelidon nilotica</i> CAMBA	This species is found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands. They are only rarely found over the ocean	No	Yes	Low

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
Hooded Robin (south-eastern form) <i>Melanodryas cucullata cucullata</i> V TSC	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.	No	Yes	Moderate
Little Lorikeet <i>Glossopsitta pusilla</i> V TSC	Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophoras, Melaleucas and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity.	Yes	Yes	Yes
Little Eagle <i>Hieraaetus morphnoides</i> V TSC	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.	Yes	Yes	Yes
Malleefowl <i>Leipoa ocellata</i> E TSC	Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species. Prefers areas of light sandy to sandy loam soils and habitats with a dense but discontinuous canopy and	No	Yes	Moderate

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
	dense and diverse shrub and herb layers.			
Magpie Goose <i>Anseranas semipalmata</i> V TSC	Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes.	No	Yes	Low
Marsh Sandpiper <i>Tringa stagnatillis</i> CAMBA JAMBA ROKAMBA	The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, salt pans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks.	No	Yes	Low
Masked Owl <i>Tyto novaehollandiae</i> V TSC	Pairs have a large home-range of 500 to more than 1,000 ha. Lives in dry eucalypt forests and woodlands from sea level to 1,100 m. A forest owl, but often hunts along the edges of forests, including roadsides.	No	No	Low
Painted Honeyeater <i>Grantiella picta</i> V TSC	Inhabits Myall, Brigalow, Box-Gum Woodlands and Box-ironbark Forests and is a specialist mistletoe feeder.	No	Yes	Moderate
Red-tailed Tropicbird <i>Phaethon rubricauda</i> V TSC	A marine species. Breeds in coastal cliffs and under bushes in tropical Australia. Nests on cliffs of the northern hills and southern mountains on the main island at Lord Howe Island.	No	Yes	Unlikely
Regent Honeyeater	Regent Honeyeaters inhabit woodlands that support a	No	Yes	Moderate

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
<i>Anthochaera phrygia</i> CE TSC	significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes.			
Speckled Warbler <i>Chthonicola sagittata</i> V TSC	Occurs in habitat with scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Inhabits in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies.	Yes	Yes	Yes
Spotted Harrier <i>Circus assimilis</i> V TSC	Occurs in grassy open woodland including acacia and mallee remnants, inland riparian woodland and grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands.	No	Yes	Moderate
Square-tailed Kite <i>Lophoictinia isura</i> V TSC	Found in a variety of timbered habitats including woodlands and open forests with a particular preference for timbered watercourses.	No	Yes	Moderate
Superb Parrot <i>Polytelis swainsonii</i> V TSC	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	Yes	Yes	Yes

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
	paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box.			
Swift Parrot <i>Lathamus discolor</i> E TSC	Migrates to the Australian south-east mainland between March and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany <i>Eucalyptus robusta</i> , Spotted Gum <i>Corymbia aculate</i> , Red Bloodwood <i>C. Gummifera</i> , Mugga Ironbark <i>E. Sideroxylon</i> , and White Box <i>E. Albens</i> .	No	No	Low
Turquoise Parrot <i>Neophema pulchella</i> V TSC	Prefer to live on the edge of woodland adjacent to clearings, timbered ridges or creeks in farmland areas. They feed in the shade of trees and spend the majority of their day on the ground searching for food.	Yes	Yes	Yes
Varied Sittella <i>Daphoenositta chrysoptera</i> V TSC	Found in forests and woodlands including mallee and acacia.	Yes	Yes	Yes
White-bellied Sea-Eagle <i>Haliaeetus leucogaster</i> V TSC	Found in coastal areas and inland waterways where it hunts fish.	No	Yes	Low
FISH				

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
Darling River Snail <i>Notopala sublineata</i> CE FM	Once common and widely distributed in the Darling River and its tributaries. The species is now restricted to a few populations in irrigation pipes near Bourke, Brewarrina and Walget.	No	No	No
Macquarie Perch <i>Macquaria australasica</i> E FM	Found in the Murray Darling Basin, the conservation status of remaining populations is not well known, but there have been long-term declines in their abundance.	No	No	No
Murray-Darling Basin population of Eel Tailed Catfish E POP FM	A non-migratory, benthic species, they are relatively sedentary only found within a 5 km range. Appears to prefer clear, sluggish or still waters, can also be found in flowing streams and turbid waters.	No	No	No
Purple-spotted Gudgeon <i>Mogurnda adspersa</i> E FM	This is a benthic species, usually found in rivers, creeks and billabongs with slow-moving or still waters, often amongst weeds, rocks or snags	No	No	No
Silver Perch <i>Bidyanus bidyanus</i> V FM	Silver Perch seem to prefer fast-flowing, open waters, especially where there are rapids and races.	No	No	No
Western Population of Olive Perchlet E POP FM	Found in rivers, creeks, ponds and swamps, usually in slow-flowing or still waters.	No	No	No
MAMMALS				
Black-striped Wallaby <i>Macropus dorsalis</i>	Preferred habitat is characterised by dense woody or shrubby vegetation within	Yes	Yes	Yes

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
E TSC	three m of the ground. This dense vegetation must occur near a more open, grassy area to provide suitable feeding habitat.			
Brush-tailed Rock Wallaby <i>Petrogale penicillata</i> E TSC	Found in continuous rocky outcrops throughout their range with foxes reducing habitat availability across their home.	No	Yes	Unlikely
Corben's Long-eared Bat <i>Nyctophilus corbeni</i> V TSC	The distribution of Corben's Long-eared Bat coincides with the area of the Murray Darling Basin with Pilliga Scrub regions being the most favoured area of habitation. This species roosts in tree hollows, crevices and under loose bark. As a slow flying agile species, it utilises the understorey to hunt for non-flying prey items such as caterpillars and beetles. They will also hunt on the ground. This species is more common where vegetation structure includes box/ironbark/cypress-pine in areas along the western slopes and plains of NSW and southern Queensland.	No	Yes	Moderate
Eastern Cave Bat <i>Vespadelus troughtoni</i> V TSC	The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings.	No	Yes	High

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
Eastern Pygmy-possum <i>Cercartetus nanus</i> V TSC	Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest.	Yes	Yes	Yes
Grey-headed Flying-fox <i>Pteropus poliocephalus</i> V TSC	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	No	No	No
Koala <i>Phascolarctos cinereus</i> V TSC	Inhabit eucalypt woodlands and forests. Home range size varies with quality of habitat, but in the Pilliga it averages 10-15 ha for both genders. In the Pilliga forests, Koalas prefer to feed on the foliage of a Red Gums and Pilliga Box. Prior to the millennium drought, the Pilliga forests were a stronghold for this species in NSW, but numbers have greatly declined in recent years.	Yes	Yes	Yes
Pilliga Mouse <i>Pseudomys pilligaensis</i> V TSC	This species is largely restricted to low-nutrient deep sand soils within the Pilliga. Recent studies indicate that the Pilliga Mouse is found in greatest abundance in recently burnt moist gullies, areas dominated by Broom	Yes	Yes	Yes

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
	Bush and areas containing an understorey of kurricabah (<i>Acacia burrowii</i>) with a bloodwood (<i>Corymbia trachyphloia</i>) overstorey.			
Rufous Bettong <i>Aepyprymnus rufescens</i> V TSC	Rufous Bettongs inhabit a variety of forests from tall, moist eucalypt forest to open woodland, with a tussock grass understorey. A dense cover of tall native grasses is the preferred shelter	No	Yes	High
Spotted-tail Quoll <i>Dasyurus maculatus</i> V TSC	The species has been 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.	No	Yes	Low
Squirrel Glider <i>Petaurus norfolcensis</i> V TSC	Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or <i>Acacia</i> mid-storey.	No	Yes	Moderate
Stripe-faced Dunnart <i>Sminthopsis macroura</i> V TSC	Native dry grasslands and low dry shrublands, often along drainage lines where food and shelter resources tend to be better.	No	Yes	Moderate
Little Pied Bat <i>Chalinolobus picatus</i>	Occurs in dry open forest, open woodland, mulga woodlands, chenopod	No	Yes	High

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
V TSC	shrublands, cypress-pine forest, mallee, Bimbil box. Roosts in caves, rock outcrops, mine shafts, tunnels, tree hollows and buildings.			
Large-eared Pied Bat <i>Chalinolobus dwyeri</i> V TSC	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (<i>Petrochelidon ariel</i>), frequenting low to mid-elevation dry open forest and woodland close to these features.	No	Yes	Moderate
Yellow-bellied Sheath-tail-bat <i>Saccolaimus flaviventris</i> V TSC	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows.	No	Yes	Moderate
REPTILES				
Border Thick-tailed Gecko <i>Uvidicolus sphyurus</i> V TSC	Favours forest and woodland areas with boulders, rock slabs, fallen timber and deep leaf litter. Occupied sites often have a dense tree canopy that helps create a sparse understorey.	No	No	No
Five-clawed Worm-skink <i>Anomalopus mackayi</i> E TSC	Found close to or on the lower slopes of slight rises in grassy White Box woodland on moist black soils, and River Red Gum-Coolibah-Bimble Box woodland on deep cracking loose clay soils. May also occur in grassland areas and open paddocks with scattered trees. They live in permanent deep tunnel-like burrows and deep soil cracks, coming close to the surface under fallen	No	Yes	No

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
	timber and litter, especially partially buried logs.			
Pink-tailed Worm-lizard <i>Aprasia parapulchella</i> V TSC	Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (<i>Themeda australis</i>). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks.	No	No	No
Pale-headed snake <i>Hoplocephalus bitorquatus</i> V TSC	Found mainly in dry eucalypt forests and woodlands, cypress forest and occasionally in rainforest or moist eucalypt forest.	No	Yes	Moderate
Striped Legless Lizard <i>Delma impar</i> V TSC	Occurs in native grasslands where they are known to shelter in the soil, within tussocks or beneath rocks.	No	No	No
FROGS				
Sloane's Froglet <i>Crinia sloanei</i> V TSC	This species of amphibian is usually associated with areas of grasslands and woodlands on floodplains.	No	Yes	High
THREATENED ECOLOGICAL COMMUNITIES				
Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions E TSC	The Brigalow community is a low woodland or forest community dominated by Brigalow (<i>Acacia harpophylla</i>), with pockets of Belah (<i>Casuarina cristata</i>) and Poplar Box (<i>Eucalyptus populnea</i> subsp. <i>bimbil</i>). The canopy tends to be quite	No	Yes	No

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
	dense and the understorey and ground cover are only sparse.			
Carbeen Open Forest Community in the Darling Riverine Plains and Brigalow Belt South Bioregions E TSC	This was previously an open forest community of flora and fauna that may now exist as woodland or as remnant trees. Characteristic tree species are Carbeen (<i>Corymbia tessellaris</i>) and White Cypress Pine (<i>Callitris glaucophylla</i>). Associated trees include <i>Corymbia dolichocarpa</i> , <i>Eucalyptus populnea</i> , <i>E. camaldulensis</i> , <i>Casuarina cristata</i> and <i>Allocasuarina leuhmannii</i>	No	Yes	No
Coolibah-Black Box Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain and Mulga Lands Bioregions E TSC	A woodland community of flora and fauna is found on the grey, self-mulching clays of periodically waterlogged floodplains, swamp margins, ephemeral wetlands, and stream levees. The structure of the community may vary from tall riparian woodlands to very open 'savanna like' grassy woodlands with a sparse mid-storey of shrubs and saplings. Typically, these woodlands form mosaics with grasslands and wetlands, and are characterised by Coolibah (<i>Eucalyptus coolabah</i>) and, in some areas, Black Box (<i>E. largiflorens</i>). Other tree species may be present including River Cooba (<i>Acacia stenophylla</i>), Cooba (<i>A. salicina</i>), Belah (<i>Casuarina cristata</i>) and Eurah (<i>Eremophila bignoniiflora</i>).	No	Yes	No
Fuzzy Box Woodland on alluvial Soils of the South Western	Tall woodland or open forest dominated by Fuzzy Box <i>Eucalyptus conica</i> , often with	No	Yes	No

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions E TSC	Grey Box <i>Eucalyptus acrocarpa</i> , Yellow Box <i>Eucalyptus melliodora</i> , or Kurrajong <i>Brachychiton populneus</i> . Buloke <i>Allocasuarina luehmannii</i> is common in places. Shrubs are generally sparse, and the groundcover moderately dense, although this will vary with season.			
Inland Grey Box Woodland in the Riverina; NSW South Western Slopes; Cobar Penepplain; Nandewar and Brigalow Belt South Bioregions EEC TSC	<i>Eucalyptus macrocarpa</i> (Inland Grey Box) is often found in conjunction with <i>E. populnea</i> subsp. <i>Bimbil</i> , <i>Callitris glaucophylla</i> , <i>Brachychiton populneus</i> , <i>Allocasuarina leuhmannii</i> or <i>E. melliodora</i> and sometimes <i>E. albens</i> . Typically, shrubs are sparse or absent and the groundcovers can be a variable mixture of grasses and herbs. This community generally exists as open woodland 15-25m tall, depending on past clearing and thinning practices.	No	Yes	No
Myall Woodland in the Darling Riverine Plains; Brigalow Belt South; Cobar Penepplain; Murray-Darling Depression; Riverina and NSW South Western Slopes bioregions E TSC	This community typically occurs on red-brown earths and heavy grey and brown alluvial soils with low average rainfall (375-500mm). The community structure varies from low woodland and low open woodland to low sparse woodland or open shrubland depending on the quality of the site and the history of disturbance on the site.	No	Yes	No
Pilliga Outwash Ephemeral Wetlands in the Brigalow Belt South Bioregion	Pilliga outwash ephemeral wetlands are found in a small area of Pilliga scrub generally associated with ephemeral creeks and waterways. Two	Yes	Yes	Yes

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
E TSC	water dependent threatened plant species (<i>Eriocaulon australasicum</i> – endangered, and <i>Myriophyllum implicatum</i> - critically endangered) are known to occur in this EEC.			
White Box Yellow Box Blakely's Red Gum Woodland E TSC	White Box Yellow Box Blakely's Red Gum Woodland (commonly referred to as Box-Gum Woodland) is an open woodland community (sometimes occurring as a forest formation), in which the most obvious species are one or more of the following: White Box <i>Eucalyptus albens</i> , Yellow Box <i>E. melliodora</i> and Blakely's Red Gum <i>E. blakelyi</i> . Intact sites contain a high diversity of plant species, including the main tree species, additional tree species, some shrub species, several climbing plant species, many grasses and a very high diversity of herbs.	No	Yes	No
FLORA				
Austral Pipewort <i>Eriocaulon australasicum</i> E TSC	Habitat is described as "wet places along the Murray towards junction of Murrumbidgee". In populations near Braidwood and in the Pilliga, it grows in mud in ephemeral water bodies.	No	Yes	No
Austral Toadflax <i>Thesium australe</i> V TSC	Occurs in grassland and grassy woodland. Often found in association with Kangaroo Grass (<i>Themeda australis</i>).	No	No	No
Bluegrass <i>Dichanthium setosum</i>	Associated with heavy basaltic black soils and red-brown loams with clay subsoil. Associated species include	No	Yes	No

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
V TSC	<i>Eucalyptus albens</i> , <i>Eucalyptus melanophloia</i> , <i>Eucalyptus melliodora</i> , <i>Eucalyptus viminalis</i> , <i>Myoporum debile</i> , <i>Aristida ramosa</i> , <i>Themeda triandra</i> , <i>Poa sieberiana</i> , <i>Bothriochloa ambigua</i> , <i>Medicago minima</i> , <i>Leptorhynchos squamatus</i> , <i>Lomandra</i> aff. <i>longifolia</i> , <i>Ajuga australis</i> , <i>Calotis hispidula</i> and <i>Austrodanthonia</i> , <i>Dichopogon</i> , <i>Brachyscome</i> , <i>Vittadinia</i> , <i>Wahlenbergia</i> and <i>Psoralea</i> species.			
Ooline <i>Cadellia pentastylis</i> V TSC	Forms a closed or open canopy mixing with eucalypt and cypress pine species.	No	No	Unlikely
<i>Commersonia procumbens</i> V TSC	Grows in sandy sites, often along roadsides. Recorded in <i>Eucalyptus dealbata</i> and <i>Eucalyptus sideroxylon</i> communities, <i>Melaleuca uncinata</i> scrub, under mallee eucalypts with a <i>Calytrix tetragona</i> understorey, and in a recently burnt Ironbark and <i>Callitris</i> area. Also in <i>Eucalyptus fibrosa</i> subsp. <i>ubile</i> , <i>Eucalyptus dealbata</i> , <i>Eucalyptus albens</i> and <i>Callitris glaucophylla</i> woodlands north of Dubbo.	Yes	Yes	Yes
Coolabah Bertya <i>Bertya opponens</i> V TSC	Known from only four populations in NSW; one of which near Coolabah. Occurs in a range of habitats including stony mallee ridges and cypress forest.	No	Yes	No
Cobar Greenhood <i>Pterostylis cobarensis</i>	This Greenhood Orchid inhabits mostly eucalypt woodland, open mallee or	No	Yes	Moderate

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
V TSC	<i>Callitris</i> shrublands occurring on skeletal sandy-loam soils and low stony ridges and slopes. It is associated with species such as <i>Acacia doratoxylon</i> , <i>Senna</i> sp, <i>Casuarina cristata</i> and <i>Callitris glaucophylla</i> .			
<i>Cyperus conicus</i> E TSC	Grows in open woodland on sandy soil. In central Australia, the species grows near waterholes and on the banks of streams in sandy soils	No	Yes	No
Finger Panic Grass <i>Digitaria porrecta</i> E TSC	In NSW, the most frequently recorded associated tree species are <i>Eucalyptus albens</i> and <i>Acacia pendula</i> . Common associated grasses and forbs in NSW sites include <i>Austrostipa aristiglumis</i> , <i>Enteropogon acicularis</i> , <i>Cyperus bifax</i> , <i>Hibiscus trionum</i> and <i>Neptunia gracilis</i> .	No	Yes	No
Large-leafed Monotaxis <i>Monotaxis macrophylla</i> E TSC	The distribution and supposed rarity of <i>Monotaxis macrophylla</i> within NSW is related to the occurrence of fire. At least within NSW, the species has not been found in the absence of fire. There is a great diversity in the associated vegetation within NSW (less though in Queensland), encompassing coastal heath, arid shrubland, forests and montane heath from almost sea level to 1300 m altitude.	No	Yes	No
<i>Myriophyllum implicatum</i> CE TSC	This species was previously thought to be extinct in NSW; however the plant was recently discovered in the Pilliga National Park, south of Narrabri and is found in moist	Yes	No	Yes

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
	situations, in or adjacent to fresh water.			
Native Milkwort <i>Polygala linariifolia</i> E TSC	Sandy soils in dry eucalypt forest and woodland with a sparse understorey. The species has been recorded from the Inverell and Torrington districts growing in dark sandy loam on granite in shrubby forest of <i>Eucalyptus caleyi</i> , <i>Eucalyptus dealbata</i> and <i>Callitris</i> , and in yellow podsolc soil on granite in layered open forest. In the Pilliga area, this species has been recorded in Fuzzy Box woodland, White Cypress Pine-Bulloak - Ironbark woodland, Rough-barked Apple riparian forb-grass open forest, and Ironbark - Brown Bloodwood shrubby woodland.	No	Yes	No
Pine Donkey Orchid <i>Diuris tricolor</i> V TSC	The Pine Donkey Orchid grows in sclerophyll forest among grass, often with native Cypress Pine (<i>Callitris spp.</i>). It is found in sandy soils, either on flats or small rises.	No	Yes	Moderate
Scrambling Lignum <i>Muehlenbeckia costata</i> V TSC	Grows in coarse sandy soils and peat in heath, mallee and open eucalypt woodland on granite or acid volcanic outcrops at higher altitudes.	No	Yes	No
Scant Pomaderris <i>Pomaderris queenlandica</i> E TSC	Found in moist eucalypt forest or sheltered woodlands with a shrubby understorey, and occasionally along creeks	No	Yes	No
Shrub Sida <i>Sida rohlenae</i>	Shrub Sida grows on flood-out areas, creek banks and at the base of rocky hills	No	Yes	No

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
E TSC				
Slender Darling-pea <i>Swainsona murrayana</i> V TSC	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.	No	Yes	No
Spiny Peppercress <i>Lepidium aschersonii</i> V TSC	Found on ridges of gilgai clays dominated by Brigalow (<i>Acacia harpophylla</i>), Belah (<i>Casuarina cristata</i>), Buloke (<i>Allocasuarina luehmannii</i>) and Grey Box (<i>Eucalyptus acrocarpa</i>). In the south has been recorded growing in Bull Mallee (<i>Eucalyptus behriana</i>). Often the understorey is dominated by introduced plants. The species grows as a component of the ground flora, in grey loamy clays. Vegetation structure varies from open to dense, with sparse grassy understorey and occasional heavy litter.	No	Yes	No
<i>Tylophora linearis</i> V TSC	Grows in dry scrub and open forest. Recorded from low-altitude sedimentary flats in dry woodlands of <i>Eucalyptus fibrosa</i> , <i>Eucalyptus sideroxylon</i> , <i>Eucalyptus albens</i> , <i>Callitris endlicheri</i> , <i>Callitris glaucophylla</i> and <i>Allocasuarina luehmannii</i> . Also grows in association with <i>Acacia hakeoides</i> , <i>Acacia lineata</i> , <i>Melaleuca uncinata</i> , <i>Myoporum</i> species and <i>Casuarina</i> species.	Yes	Yes	Yes

Common Name Scientific Name NSW Legal Status	Habitat	Recorded during survey	Recorded previously in locality	Likelihood of biota occurring in the vicinity of the proposed CFAI
Winged Peppergrass <i>Lepidium monoplocoides</i> E TSC	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 <i>Allocasuarina luehmannii</i> (Bulloak) and/or eucalypts, particularly <i>Eucalyptus largiflorens</i> (Black Box) or <i>Eucalyptus populnea</i> (Poplar Box). The field layer of the surrounding woodland is dominated by tussock grasses	No	Yes	Low

The assessments in Table A6-1 found that 6 (possibly 7) presumed extinct species were to be reintroduced, 21 listed as threatened in the TSC Act were known to occur within the vicinity of the proposed activity, with an additional 21 species list in the TSC Act having a moderate to high potential of occurring based on the evaluation completed.