**Mr Zaed Aznam**
**ITP Development**
Project Manager – Planning
PO Box 6127
O'Connor, ACT 2602

By email on 17/11/2021 to zaznam@itpau.com.au

***Re: Biodiversity inspection report – Gilgandra 1A 5MW Solar Farm, 361 Oxley Highway, Gilgandra, NSW***

Dear Zaed,

Thank-you for the opportunity to assist with the project. Please be advised that in this engagement, I am assuming the role of your Ecological Consultant and Biodiversity Assessment Method (BAM) Accredited Assessor. I confirm that I am listed on the Biodiversity Assessment Method (BAM) Accredited Person database.

**Desk-top review**

Database searches concluded that the likely Plant Community Type (PCT) adjacent to the area is PCT 206 (Dirty Gum - White Cypress Pine tall woodland of alluvial sand (sand monkeys) in the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion) with PCT 88 (Pilliga Box - White Cypress Pine - Buloke shrubby woodland in the Brigalow Belt South Bioregion) and PCT 469 (White Cypress Pine - Narrow-leaved Ironbark - Buloke grassy open forest of the Dubbo region, southern Brigalow Belt South Bioregion) in close proximity to the site. Aerial photography confirmed that as at 22/9/2021 the entire site is likely cleared of native shrubs and trees, with little to no native grasses due to current land use of the development area being cropping land.

**EPBC Protected Matters Online Search Tool**

Consultation with the EPBC Protected Matters Online Search Tool searched a 5km radius of the site area for threatened ***Flora*** and ***Vegetation Communities*** returning 5 threatened species and 6 threatened communities. Of which there were 2 Vulnerable, 6 Endangered and 3 Critically Endangered species whose habitat may occur within that specified geographic range. **Table 1** considers their likelihood of occurring in the proposed site. Consultation with the same online database for threatened ***Fauna*** in the same geographic range returned 11 Migratory, 10 Vulnerable, 6 Endangered and 3 Critically Endangered species. **Table 2** considers their likelihood of occurring in the proposed site.

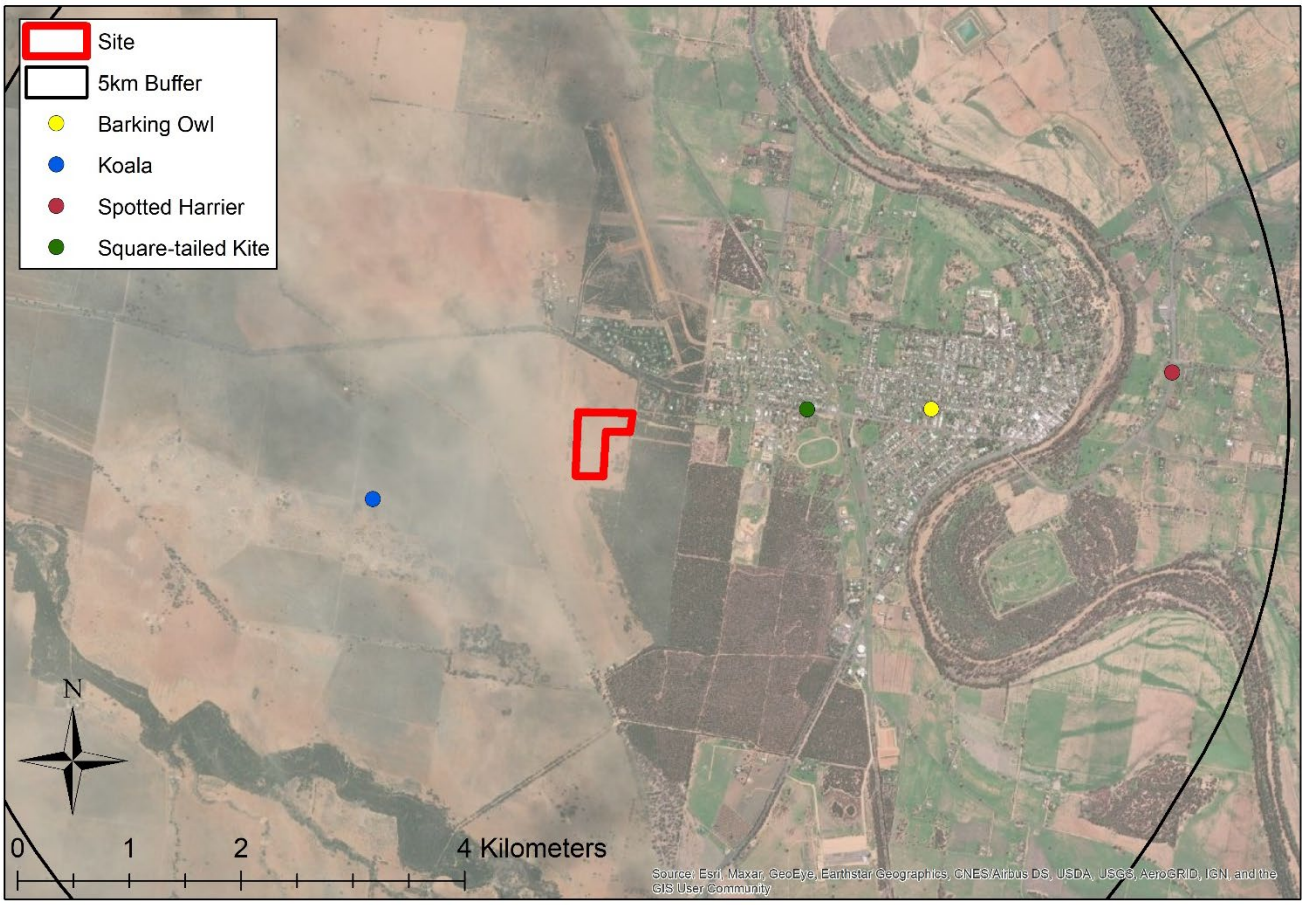
**NSW BioNet (The Atlas of NSW Wildlife)**

Consultation with NSW BioNet (The Atlas of NSW Wildlife) for listed ***Flora*** considered threatened in NSW, returned 1 Vulnerable species recorded within 10km by 10km radius of the site. These species were not recorded on site during the inspection period and are considered unlikely to be present due to a lack of suitable habitat and structure. Consultation with the same online database for threatened ***Fauna*** in the same geographic range returned 4 Vulnerable species recorded (**Map 1**). **Table 3** considers their likelihood of occurring in the proposed site.

**Biodiversity Values Map and Threshold Tool**

The Biodiversity Offsets Scheme Threshold (BOSET) is a test used to determine when is necessary to engage an accredited assessor to apply the Biodiversity Assessment Method (the BAM) to assess the impacts of a proposal. A search conducted on 07/10/21 revealed that the project site does not intersect any areas mapped as possessing 'Biodiversity Values' (**Attachment 4**).


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749




**Map 1: Recorded threatened species, NSW BioNET. Data download, 07/10/21**

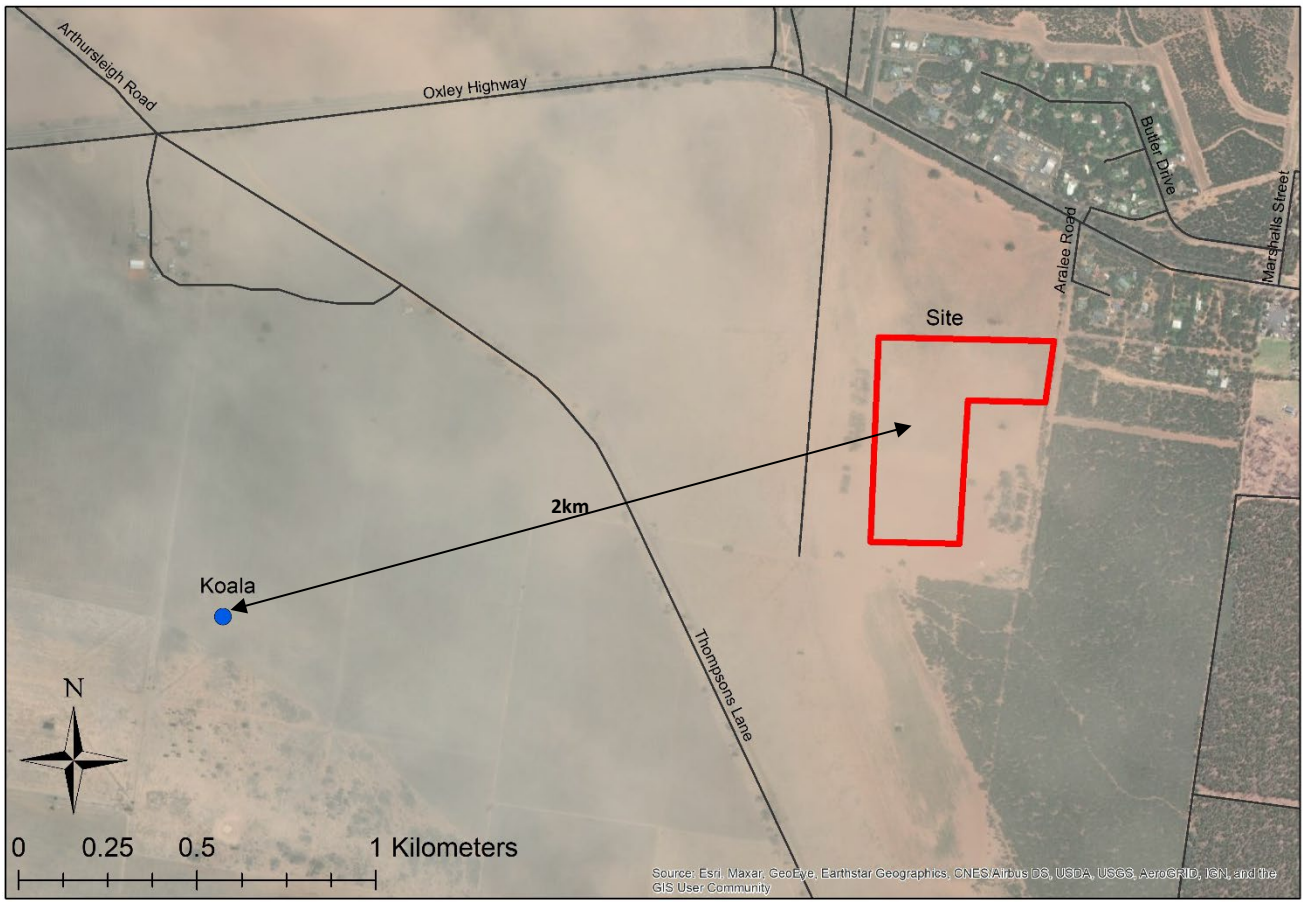
## Koala Assessment

In 2018, the then Office of Environment & Heritage (now DPIE) produced *'A review of koala tree use across New South Wales'* which assessed evidence of koala tree use, for whatever purpose, across New South Wales. The study was intended as a platform to inform the predictive modelling of koala tree species and to contribute to a koala habitat suitability information base and importantly, the data collected for the seven (7) Koala Management Areas (KMAs) (after Phillips 2000 & DECC 2008) 'allows for a bottom-up consideration of a fundamental driver of koala habitat selection – local tree use patterns and tree associations' (OEH, 2018).

The assessment site at Gilgandra is in the Western Slopes and Plains KMA in which the study identified 19 tree species regularly used by Koalas, including 13 eucalypts (24% of 54 with >9 BioNet VIS records) and six (6) non-eucalypts. All eucalypts used were from *Symphyomyrtus* sub-genus (Trees or mallees; bark smooth, excorticating in small or large flakes or ribbons, or persistent, shortly fibrous-flaky, fibrous, or shortly fibrous and heavily impregnated with kino).

Pre-inspection database searches revealed one (1) sighting of a Koala (*Phascolarctos cinereus*) within a 5km buffer of the site, approximately 2km to the west south west in a farmland area (**Map 2**). It is likely that the record coordinate was of the location the recorder 'spotted' the Koala and not the actual location of the individual itself. It is entirely feasible that Koala's could be using the surrounding fragments of trees located within farmland and along various roadsides, and to the bush areas to the east of the site, however none have been recorded in those areas previously.


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749




**Map 2: Nearest Recorded Koala sighting, NSW BioNET. Data download, 07/10/21**

## Site inspection

Site inspection on 22/06/2021 was conducted mid-morning, conditions were clear and 18°C. The designated 'clear zone' was thoroughly inspected in accordance with *Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011)*. I confirm that the proposed area for development will not see the loss of >1 ha of native grass or any dead or alive remnant trees. The following observations were made at the time of inspection:

1. If any threatened native fauna (birds) are present in the surrounding connected native vegetation (in particular the Barking Owl & Spotted Harrier) they were not recorded during survey on the loss site on 22/06/2021 and the nesting period for these species is closed (both typically breed between July and October) meaning that the possibility of harming a fledgling is unlikely.
2. The site is a highly modified cropping paddock and an obvious history of pastoralism and or cultivation;
3. No threatened species, scats or other evidence of the use of this zone or the development site were recorded during the survey effort.
4. No Koalas, scats or other evidence of use of this zone or the development site were recorded during the survey effort.
5. The remnant vegetation near the eastern and eastern border of site is of High Conservation Value (HCV) and impacts to this zone by the proposed access have been minimized by use of an existing dirt road to the property boundary off the highway. This zone is potential Koala habitat.


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

**Summary of Findings**

Red-Gum contends that the project requires <1 ha clearance of native grass and zero remnant native trees. The proposed activities are unlikely to have an adverse effect on the foraging ability or the life cycle of threatened species that may be opportunistically using the site or surrounding areas.

The small amount of native grass that will be impacted by the development (primarily in the entrance to the site) will not endanger or have a significant effect on any existing native vegetation, habitats within the wider region, or fauna species that may be using the site.

This project will not displace any rare or threatened species, however it is likely that a number of threatened and declining bird species and Koala may be using the areas on the western and eastern boundaries of the site and in the heavily wooded areas to the east of the site, hence the construction activities may prove to disturb foraging activities for a short period.

While the proposed works are unlikely to introduce noxious weeds, vermin, feral species or genetically modified organisms into an area, the movement of vehicles, plant, equipment and people on and off the subject site/s has the potential to introduce such impacts. Wherever possible, removal of weeds should be undertaken prior to seed developing, which for most species occurs during the warmer months (i.e. summer).

The typical home ranges of Koalas are from 2ha of connected vegetation to hundreds of hectares. Koala feed almost exclusively on a few preferred tree species which are of primary and secondary importance. The occurrence of both primary and secondary tree species varies widely on a regional, local and even a seasonal basis, meaning that koalas are unevenly distributed across their range. In the study area, primary food tree species are River red gum (*E. camaldulensis*) and Coolabah (*E. coolabah*) with secondary food tree species including Dirty (or Baradine) gum (*E. chloroclada*), Blakely's red gum (*E. blakelyi*), E. camaldulensis, Poplar or Bimble box (*E. populnea*), white box (*E. albens*), and *Callitris glaucophylla*.

No viable food sources are present in the development area. Importantly, there are numerous core vegetation areas surrounding the site which represent areas of viable Koala habitat. The site is highly unlikely to be traversed or used by the species who are much more likely to stay within the connected canopy of the large remnant patch to the east of site.

I am of the opinion that the activities as proposed will not have a significant effect on any threatened species and ecological communities and/or their conservation as noted within this assessment.

**Recommendations**

By way of a clearing process that minimizes the risk to threatened species that may be opportunistically using the site, I recommend:

**I.** Construction limits and exclusion zones clearly identified prior to work;

**II.** A visual inspection is conducted by environmental staff before construction commences to identify any areas of site that might be supporting native fauna;

**III.** Vehicle movements around the site will be restricted to the construction footprint and away from any existing planted trees and flagging exclusion fencing to be installed.

**IV.** Soil disturbance by vehicle and pedestrian access is to be kept to a minimum outside the construction footprint.

**V.** Any weeds removed (particularly those bearing seeds) are to be disposed of appropriately at the nearest waste management facility.


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

## Attachment 1: Database Search Results v Likelihood Tables

[1] Five categories for the 'likelihood of occurrence' of species has been used. The categories are based on recorded sightings listed in credible databases, the presence or absence of suitable habitat, other features of the site, results of the field survey and professional judgement. The 5 categories are:

| | |
|---|---|
| **'Yes'** | The species/community was or has been observed on the site. |
| **'Likely'** | A medium to High probability that a species uses the site |
| **'Potential'** | A suitable habitat for a species occurs on the site, but there is insufficient information to categorise the species as 'likely' or 'unlikely' to occur. |
| **'Unlikely'** | A Very Low to Low probability that a species uses the site. |
| **'No'** | Habitat on the site and in the vicinity in unsuitable for the species. |

***Table 1: EPBC Protected Matters Database results – Flora (5km x 5km)***

| Species | Preferred Habitat | EPBC Act Status | Likelihood[1] |
|---|---|---|---|
| White Box-Yellow Box Blakely's Red-Gum Grassy Woodland and Derived Native Grassland | | Critically Endangered | No |
| Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia | | Endangered | No |
| Poplar Box Grassy Woodland on Alluvial Plains | | Endangered | No |
| Natural grasslands on basalt and fine-textured alluvial plains of northern NSW and Southern Queensland. | | Critically Endangered | No |
| Weeping Myall Woodlands | | Endangered | No |
| Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions. | | Endangered | No |
| *Lepidium monoplocoides* - Winged Peppercress | Widespread in semi-arid western plains regions of NSW. Usually occur on seasonally moist to waterlogged sites, in open woodland. | Endangered | No |
| *Dichanthium setosum* - Bluegrass | Disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. | Vulnerable | Unlikely |
| *Swainsona murrayana* - Slender Darling Pea | Found growing in clay-based soils in a variety of vegetation types including bladder saltbush, black box and grassland communities. | Vulnerable | No |
| *Tylophora linearis* | Grows in dry scrub and open forest. | Endangered | No |
| *Prasophyllum sp. Wybong* - A leak-orchid | Known to occur in open eucalypt woodland and grassland | Critically Endangered | No |


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

***Table 2: EPBC Protected Matters Database results – Fauna (5km x 5km)***

| Species | Preferred Habitat | EPBC Act Status | Likelihood[1] |
|---|---|---|---|
| Birds | | | |
| *Anthochaera hrygia* - Regent Honeyeater | Dry open forest and woodlands on inland slopes and valleys particularly Box Woodlands. | Critically Endangered | Unlikely |
| *Hirundapus caudacutus* - White-throated Needletail | Feed, drink and rest on the wing in large groups. May rest at night in forested country. | Vulnerable | No |
| *Falco hypoleucos* - Grey Falcon | Usually restricted to shrubland, grassland and wooded watercourses of arid regions | Vulnerable | No |
| *Rostratula australis* - Australian Painted Snipe | Margins of densely vegetated swamps and wetlands | Endangered | No |
| *Botaurus poiciloptilus* - Australasian Bittern | Found in wetlands with tall, dense vegetation, favours permanent freshwater habitats. | Endangered | No |
| *Calidris ferruginea* - Curlew Sandpiper | Occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons | Critically Endangered | No |
| *Polytelis swainsonii* - Superb Parrot | Mainly inhabits forests and woodlands dominated by eucalypts. | Vulnerable | Unlikely |
| *Leipoa ocellata* - Malleefowl | Predominantly inhabit mallee communities, with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. | Vulnerable | No |
| *Grantiella picta* - Painted Honeyeater | Inhabits Boree/ Weeping Myall (Acacia pendula), Brigalow and Box-Gum Woodlands | Vulnerable | No |
| *Lathmus discolor* - Swift Parrot | Occur in forests and woodlands dominated by winter flowering eucalypts | Critically Endangered | Unlikely |
| Fish | | | |
| *Maccullochella macquariensis* - Trout Cod | Stream positions with high abundance of large woody debris | Endangered | No |
| *Maccullochella peelii peelii* - Murray Cod | Slow flowing turbid rivers and billabongs. | Vulnerable | No |
| *Macquaria australasica* - Macquarie Perch | Clear water and deep, rocky holes with lots of cover | Endangered | No |
| Mammals | | | |
| *Dasyurus maculatus* - Spot-tailed Quoll | Mature wet forest habitat in areas with rainfall 600 mm/year | Endangered | No |
| *Nyctophilus corbeni* - Corben's Long-eared Bat | Mallee, bulloke Allocasuarina and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine. | Vulnerable | No |
| *Pteropus poliocephalus* - Grey-headed Flying-fox | Requires foraging resources and roosting sites. | Vulnerable | No |
| *Phascolarctos cinereus* - Koala | Temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species | Vulnerable | Unlikely |
| *Chalinolobus dwyeri* - Large -eared Pied Bat | Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin. | Vulnerable | No |
| Migratory Marine Birds | | | |
| *Apus pacificus* - Fork-tailed Swift | Spend most their life airborne. Build their nests on cliffs. | Migratory | No |
| Migratory Terrestrial Birds | | | |
| *Hirundapus caudacutus* - White-throated Needletail | Feed, drink and rest on the wing in large groups. May rest at night in forested country. | Vulnerable | No |
| *Motacilla flava* - Yellow Wagtail | Found in short grass, bare ground, swamp margins, sewage ponds and town lawns. | Migratory | No |
| *Myiagra cyanoleuca* - Satin Flycatcher | Tall wet eucalypt forests of SE Australia. | Migratory | No |


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

| Species | Preferred Habitat | EPBC Act Status | Likelihood[1] |
|---|---|---|---|
| Migratory Wetland Birds | | | |
| *Calidris ferruginea* - Curlew Sandpiper | Occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons | Critically Endangered | No |
| *Gallinago hardwickii* - Latham's Snipe | Freshwater swamps and marshes as well as salt marshes and mud flats | Migratory | No |
| *Actitis hypoleucos* - Common Sandpiper | Found in coastal or inland wetlands, both saline or fresh. | Migratory | No |
| *Calidris acuminata* - Sharp-tailed Sandpiper | Prefers the grassy edges of shallow inland freshwater wetlands. | Migratory | No |
| *Calidris melanotos* - Pectoral Sandpiper | Prefers the grassy edges of shallow inland freshwater wetlands. | Migratory | No |
| Listed Marine Birds | | | |
| *Apus pacificus* - Fork-tailed Swift | Spend most their life airborne. Build their nests on cliffs. | Migratory | No |
| *Ardea ibis* - Cattle Egret | Shallow water and open dry grassy habitats | Migratory | No |
| *Rostratula benghalensis (sensu lato)* - Painted Snipe | Generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands | Endangered | No |
| *Hirundapus caudacutus* - White-throated Needletail | Feed, drink and rest on the wing in large groups. May rest at night in forested country. | Vulnerable | No |
| Motacilla flava - Yellow Wagtail | Found in short grass, bare ground, swamp margins, sewage ponds and town lawns. | Migratory | No |
| *Myiagra cyanoleuca* - Satin Flycatcher | Tall wet eucalypt forests of SE Australia. | Migratory | No |
| *Calidris ferruginea* - Curlew Sandpiper | Occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons | Critically Endangered | No |
| *Gallinago hardwickii* - Latham's Snipe | Freshwater swamps and marshes as well as salt marshes and mud flats | Migratory | No |
| *Haliaeetus leucogaster* - White-bellied Sea-Eagle | Surface waters along coasts, islands, inlets also along larger inland rivers and lakes. | Migratory | No |
| *Merops ornatus* - Rainbow Bee-eater | Occurs in open woodlands, shrublands, grasslands and forests including riparian areas. | Migratory | Unlikely |
| *Actitis hypoleucos* - Common Sandpiper | Found in coastal or inland wetlands, both saline or fresh. | Migratory | No |
| *Calidris acuminata*- Sharp-tailed Sandpiper | Grassy edges of shallow inland freshwater wetlands. | Migratory | No |
| *Calidris melanotos* - Pectoral Sandpiper | Prefers shallow fresh to saline wetlands. | Migratory | No |
| *Chrysococcyx osculans* - Black-eared Cuckoo | Found in drier country where species such as mulga and mallee form open woodlands | Migratory | Unlikely |
| *Lathmus discolor* - Swift Parrot | Occur in forests and woodlands dominated by winter flowering eucalypts | Critically Endangered | Unlikely |


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

***Table 3: BioNet Atlas of NSW Wildlife – Fauna (10km x 10km)***

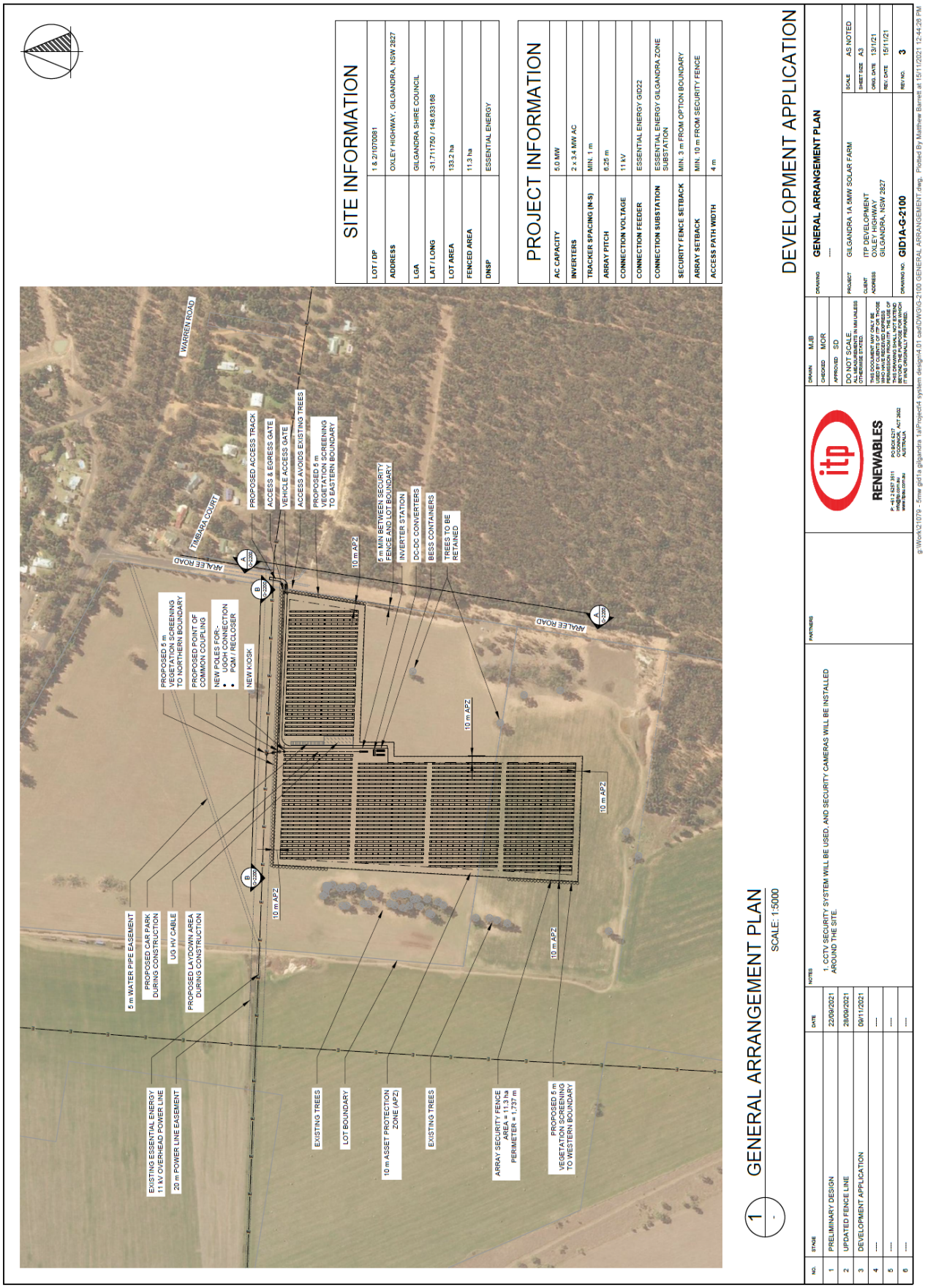
| Species | Preferred Habitat | BC Act Status | Likelihood[1] |
|---|---|---|---|
| **Aves** | | | |
| *Circus assimilis* - Spotted Harrier | Grassy open woodland and in native grasslands, and also in agricultural lands | Vulnerable | Unlikely |
| *^^Lophoictinia isura* - Square-tailed Kite | Dry woodlands and open forests. Shows a particular preference for timbered watercourses. | Vulnerable | No |
| *^^Ninox connivens* - Barking Owl | Woodland and open forests, including remnants and partly cleared farmland | Vulnerable | Unlikely |
| **Mammalia** | | | |
| *Phascolarctos cinereus*- Koala | Temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species | Vulnerable | Unlikely |

***Table 4: BioNet Atlas of NSW Wildlife – Flora (10km x 10km)***

| Species | Preferred Habitat | BC Act Status | Likelihood[1] |
|---|---|---|---|
| *Commersonia procumbens* | Sandy sites, often along roadsides | Vulnerable | No |


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

## Attachment 2: Proposed Design and Impacts. Source: ITP Development, 2021






0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

## Attachment 3: Photos from the Site Inspection – 22/06/21

**Photo 1: Site condition, showing cropping land use. D. Wall, 2021.**

**Photo 2: Native vegetation near southern boundary of the site. D. Wall, 2021.**



0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

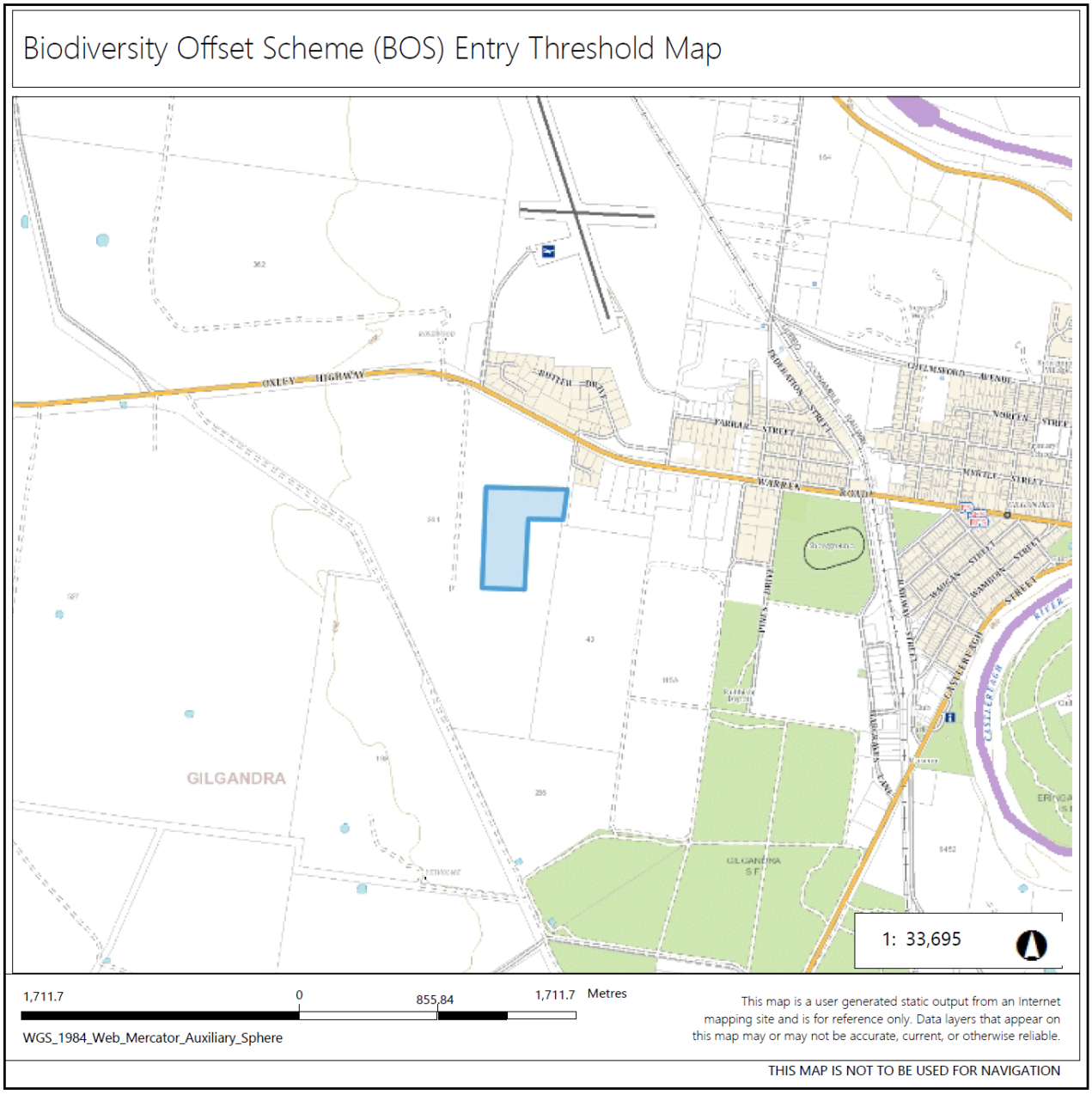
**Photo 3: Native vegetation on eastern boundary of site, north orientation. D. Wall, 2021.**

**Photo 4: *Eucalyptus sp.* along eastern boundary of site. D. Wall, 2021**


0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749

**Attachment 4: BOSET Report Results**

NSW GOVERNMENT




Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days

Notes





0402 344 574 damian.wall@red-gum.com.au www.red-gum.com.au 94 Kirby Flat Rd, Yackandandah, VIC 3749