Flora & Fauna Assessment Report

for proposed Poultry Farms
at
Lot 42 DP 37629
No. 755 Warrah Ridge Road
WARRAH RIDGE

Prepared by: WILDTHING Environmental Consultants

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For: **Agright Griffith Pty Ltd**

Job No: 13003

March 2026

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Project Name	Flora & Fauna Assessment Report for proposed Poultry Farms, Lot 42 DP 37629 (No. 755) Warrah Ridge Road, Warrah Ridge NSW.	
Project Number	13003	
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Date	30 March 2026	
Version Number	2	

Disclaimer

This report has been prepared in accordance with the proposal provided by the Client and outlined within this report. All findings, conclusions or recommendations contained within this report are based upon the data and results collected under the times and conditions specified in the report and are only applicable for the proposal considered within this report. This report has been prepared for use exclusively by the Client. No responsibility for its use by any other party is accepted by WILDTHING Environmental Consultants.

Summary

Flora, fauna and habitat studies have been undertaken for the development of a poultry broiler farm at Lot 42 DP 37629 (No. 755) Warrah Ridge Road, Warrah Ridge NSW.

The farm will be comprised of fourteen (14) poultry sheds where free range meat chicken birds (broilers) will be grown for human consumption. Each shed will accommodate a maximum of 57,900 birds giving the farm a maximum capacity of 810,600 birds. Production of broilers occurs in cycles with each production cycle completed over 8-10 weeks. As such, there is an average of 6 production cycles each year. The proposed development will also include grain storage silos, staff amenities, access roads, gas storage infrastructure, farm workshop, water pipes, pump shed and water storage tanks along with two new managers houses on site. Other ancillary, supporting infrastructure will include a solar farm and an associated battery energy storage system for electricity production and a stormwater retention dam.

The subject site (Lot 42 DP 37629) is approximately 445ha and is located within the Liverpool Plains Shire Council LGA. The entire subject site is zoned as RU1 - Primary Production. The proposed 20.56ha impact area located in the north of the subject site has been historically cleared and is currently used for cropping. No additional clearing outside of the established cropping areas and existing access roads is required to facilitate the construction of the farm.

The impacted cropping areas were divided into those currently under irrigation (Centre Pivot Irrigation) and these subject to dry land farming. A tree survey found eighty (80) trees within proximity to the impact area. A row of planted mature native trees largely specimens of *Eucalyptus camaldulensis* (River Red Gum) were present along northern sections of the access road and to the north and east of the proposed managers residences. A row of introduced *Fraxinus* sp. (Ash) was also present along the southern section of the access road in the west. None of these trees will be impacted as a result of the proposal.

Areas of remnant native vegetation were present within proximity to the impact area. Vegetation assemblages most consistent with one Plant Community Type (PCT) PCT 437 Yellow Box Grassy Woodland on lower hillslopes and valley flats in the southern NSW Brigalow Belt South Bioregion were present to the south and west of the impact area. An area of PCT 437 was also located to the north of the access road.

Areas of PCT 437 Yellow Box Grassy Woodland was found to be consistent with the listed NSW BC Act 2016 Critically Endangered Ecological Community (CEEC) White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions. PCT 437 was also consistent with the nationally listed (CEEC) White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland. As no areas of this CEEC will be directly impacted and taking into consideration mitigation measures, the proposal is unlikely to have a significant impact such that the local occurrence is likely to be placed at risk of extinction.

No threatened flora species were recorded within the survey area during fieldwork. Of the addressed 11 threatened flora species, no suitable habitat was found to be present as a result of the high disturbance to the impact area. Therefore, it is considered unlikely that the proposal would significantly affect the life cycle of any of these threatened flora species or place any viable local populations of at risk of extinction.

No threatened fauna species were recorded during fieldwork. Of the threatened fauna species addressed those most likely to utilise the impact area would include some birds of prey and microchiropteran bats for hunting. Given the small impact it is unlikely that the proposal will have a significant impact on the addressed threatened fauna species such that a local extinction would occur.

Considerations Under State Environmental Planning Policy (Resilience and Hazards) 2021; Chapter 3 Koala Habitat Protection, found whilst potential Koala Habitat was present, the study area was unlikely to be Core Koala Habitat. No trees were present within the impact area.

Considerations have been made to the Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act (1999). Areas of PCT 437 Yellow Box Grassy Woodland occurring outside the impact area to the south and east were also consistent with the nationally listed (CEEC) White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland. As no areas of this CEEC will be directly impacted and taking into consideration mitigation measures such as weed control, the proposal is unlikely to have a significant impact such that the local occurrence is likely to be placed at risk of extinction.

In conclusion, the proposal will result in a small incremental reduction highly disturbed cropping habitat. Given the mitigation measures the proposal is unlikely to disrupt the life cycle of any addressed threatened species, endangered population or endangered ecological community such that local extinction would occur.

CONTENTS

LIST OF APPENDICES

Acronyms and Abbreviations used in this report

Acronym/Abbreviation	Phrase
AOBV	Area of outstanding Biodiversity Value
BAAS	Biodiversity Assessors Accreditation System
BAM	Biodiversity Assessment Method
BAMC	Biodiversity Assessment Method Calculator
BAR	Biodiversity Assessment Report
BESS	Battery Energy Storage System
BC Act	Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
BOAMS	Biodiversity Offsets and Agreement Management System
BOS	Biodiversity Offset Scheme
BOSET	Biodiversity Offsets Scheme Entry Tool
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPE	Department of Planning and Environment (NSW)
EEC	Endangered Ecological Community
EPBC Act	Environmental Protection & Biodiversity Conservation Act 1999
EP&A Act	Environmental Planning & Assessment Act 1979
IBRA	Interim Biogeographic Regionalisation for Australia
LGA	Local Government Area
LLS Act	Local Land Services Act 2013
LPC	Liverpool Plains Shire
NES	Matters of National Significance under the EPBC Act
NPW Act	National Parks & Wildlife Act 1974
OEH	Office of Environment & Heritage (now DPE)
PCT	Plant Community Type
PMST	Protected Matters Search Tool
SAII	Serious and Irreversible Impacts
SEPP	State Environmental Planning Policy
TEC	Threatened Ecological Community

1.0 INTRODUCTION

Flora, fauna and habitat studies have been undertaken for proposed poultry farms and associated infrastructure at 755 Warrah Ridge Road, Warrah Ridge NSW. The investigations were in accordance with the requirements of the *Environmental Planning and Assessment Amendment Act 2017* (EP&A Act 2017), the *Biodiversity Conservation Act 2016* (BC Act 2016) and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999). The results are presented here in the form of an Ecological Assessment.

1.1 THE SUBJECT SITE AND IMPACT AREA

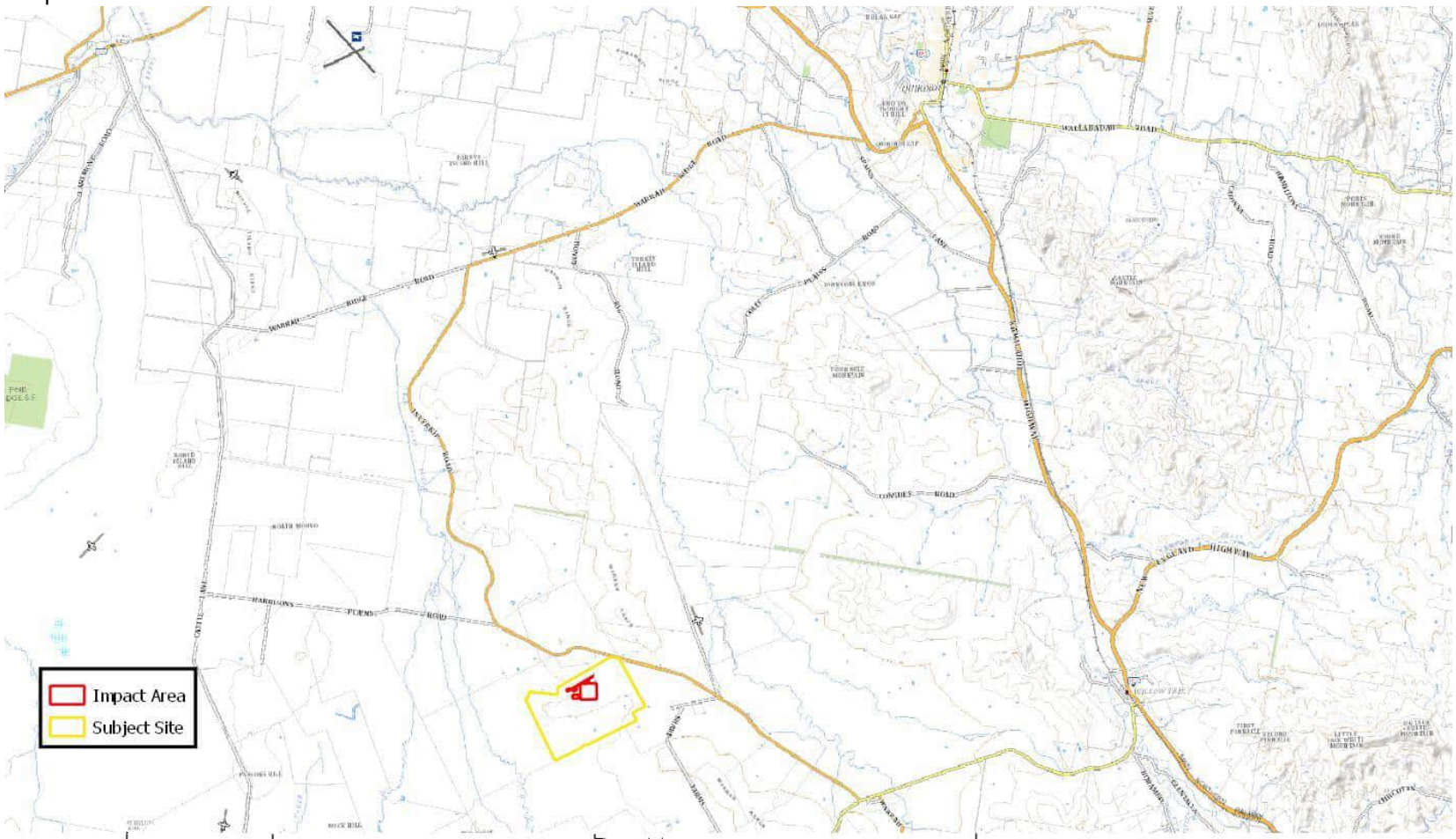
The poultry farms are proposed to be located on land at Lot 42 DP37629 (No. 755) Warrah Ridge Road, Warrah Ridge, NSW. The subject site (Lot 42 DP37629) has an area of approximately 445ha and is situated approximately 16 km southwest of Quirindi. The proposed 20.56ha impact area the area has been historically cleared and is currently used for cropping. No additional clearing outside of the established cropping areas and existing access roads is required to facilitate the construction of the farm. Access to the site is achieved via an existing internal vehicular access road from Warrah Ridge Road.

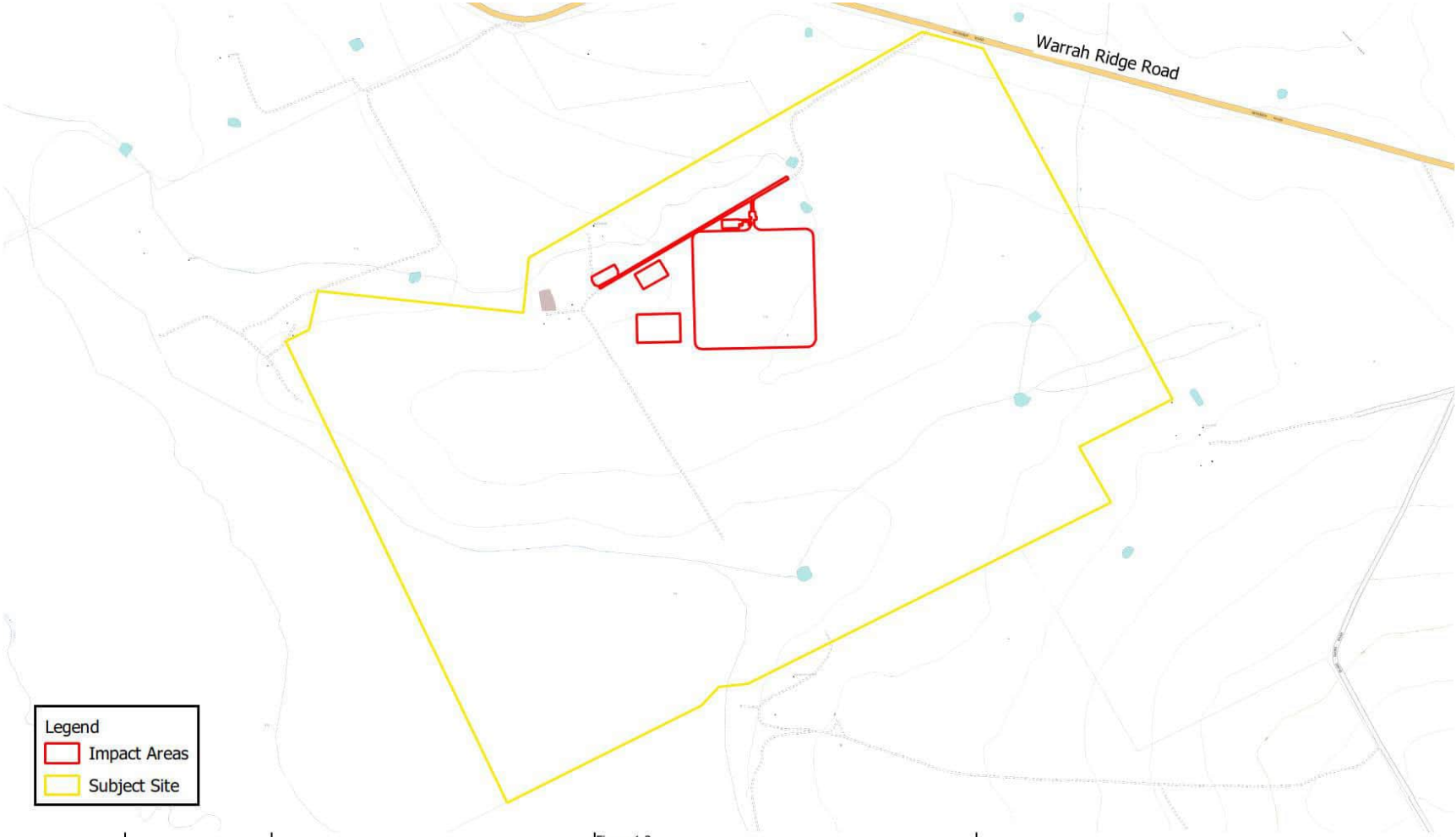
Vegetation within the impacted cropping areas were divided into those currently under irrigation (Centre Pivot Irrigation) and these subject to dry land farming. A row of planted mature native trees, largely specimens of *Eucalyptus camaldulensis* (River Red Gum) were present along northern sections of the access road and to the north and east of the proposed managers residences. A row of introduced *Fraxinus* sp. (Ash) was also present along the southern section of the access road in the west. At the time of the survey the Centre Pivot had been planted with *Avena sativa* (Oats). Past crops have included *Sorghum bicolor* (Sorghum). The remaining cropping areas were at the time were not planted out and were dominated by introduced species such as *Urochloa panicoides* (Liverseed Grass), *Bromus catharticus* (Prairie Grass), *Alternanthera pungens* (Khaki Weed), *Polygonum aviculare* (Wireweed) and *Conyza* sp.

Vegetation assemblages most consistent with one Plant Community Type (PCT) PCT 437 Yellow Box grassy woodland on lower hillslopes and valley flats in the southern NSW Brigalow Belt South Bioregion were present outside the impact area to the south and west. Common trees within PCT 437 were *Eucalyptus melliodora* (Yellow Box) and *Angophora floribunda* (Rough-barked Apple). An area of PCT 437 was also located to the north of the access road.

A location map and aerial photo of the subject land and subject areas are shown in Figures 1.1, 1.2 and 1.3.

1.1 Location Map





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Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarentee is given that the information protrayed is free from error or omission. In addition the spatial accuracy of the map is wholly dependant on source data. Please verify the accuracy of all information prior to use. Development footprint areas should be used for indicative areas only.

0 500 1000 m

Map Projection GDA2020 MGA Zone 56

Data Sources: LPI (2026),

Figure 1.2

Map showing the location of subject site and impact area

755 Warrah Ridge Road
WARRAH RIDGE, NSW

February 2026

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0 500 1000 m

Map Projection GDA2020 MGA Zone 56

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Figure 1.3

Aerial Photo showing the location of subject site and impact area

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February 2026

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1.2 THE PROPOSAL

Agright is seeking development consent under Part 4 of the Environmental Planning and Assessment Act 1979 to develop a poultry broiler farm. The farm will be comprised of fourteen (14) poultry sheds where free range meat chicken birds (broilers) will be grown for human consumption. Each shed will accommodate a maximum of 57,900 birds giving the farm a maximum capacity of 810,600 birds. Production of broilers occurs in cycles with each production cycle completed over 8-10 weeks. As such, there is an average of 6 production cycles each year.

The proposed development is defined as "Intensive Livestock Agriculture", which means; "the keeping of breeding for commercial purposes of cattle, poultry, pigs, goats, horses, sheep or other livestock, and includes…. Poultry farms, but does not include extensive agriculture, aquaculture or the operation of facilities for drought or similar emergency relief".

The proposed 172m x 18.7m sheds (3,216.4m2) will be constructed in two rows running north-south across the site. The poultry sheds will be fitted with purpose-built infrastructure associated with poultry production including fans, heaters, water and feed lines and lighting. The proposed free-range areas are located adjoining and between the sheds.

The proposed development will also include grain storage silos, staff amenities, access roads, gas storage infrastructure, farm workshop, water pipes, pump shed and water storage tanks along with two new managers houses on site. Other ancillary, supporting infrastructure will include a solar farm and an associated battery energy storage system for electricity production and a stormwater retention dam.

Plans of the proposal are shown in Figure 1.4.

Figure 1.4: Plan of proposal.

2.0 SUBJECT LAND CONTEXT

The subject site is located within the Brigalow Belt South Bioregion and Liverpool Plains Sub-bioregion (regions gazetted by the Minister, or an Interim Biogeographical Regionalisation of Australia (IBRA Bioregion). The subject site is located within the Liverpool Plains Shire Local Government Area (LGA) and is zoned as RU1: Primary Production.

2.1 HYDROGEOGRAPHY

The subject site, occurs within the Namoi River and Greater Murray Darling Basin Catchment. Water on site would flow into Big Jacks Creek to the west. Big Jacks Creek flows into Warrah Creek before flowing into the Mooki River. The Mooki River flows into the Namoi River. First and second order streams were present within the subject site but did not occur within the impact area.

2.2 TOPOGRAPHY AND SOILS

The subject site is located within the Breeza Hills Sandstone-Shale Slopes and Liverpool Alluvial Plains BioNet Landscapes (Mitchell Landscape). The impact area was confined to the area mapped as Breeza Hills Sandstone-Shale Slopes.

The subject site contained three Soil Landscapes, Goscombes Road, Inverkip Road and Conadily. The impact area was located within the Goscombes Road and Inverkip Road Soil Landscapes.

2.3 VEGETATION

The proposed farm is located within an area which has been historically cleared and is currently used for cropping. Areas of remnant woodland were present to the south and east of the proposal and north of the existing access road. No additional clearing outside of the established cropping areas is required to facilitate the construction of the farm.

3.0 LEGISLATIVE CONTEXT

The following sections detail the legislative frameworks relevant to this report.

3.1 NSW ENVIRONMENTAL PLANNING AND ASSESSMENT AMENDMENT ACT 2017

The assessment of development applications in NSW is regulated under Part 4 or Part 5 of the EP&A Act. Part 1 Section 1.7 of the EP&A Act links proponents to Part 7 of the BC Act for the operation of the EP&A Act in connection with potential impacts to the terrestrial environment. The EP&A Act is also supported by other statutory environmental planning instruments, including State Environmental Planning Policies (SEPPs).

3.2 NSW BIODIVERSITY CONSERVATION ACT 2016 (PART 4)

The purpose of the BC Act is "to establish a pathway to avoid, minimise and offset the impacts of proposed development and land use change on biodiversity and to establish a scientific method for assessing the likely impacts on biodiversity values of proposed development and land use change, for calculating measures to offset those impacts and for assessing improvements in biodiversity values".

In accordance with the BC Act, the Biodiversity Assessment Method (BAM) and entry into the Biodiversity Offsets Scheme (BOS) is applicable to certain development activities based on specific Preparation of a Biodiversity Development Assessment Report (BDAR) is required for a development application that meets any of the following criteria detailed in Table 3.1.

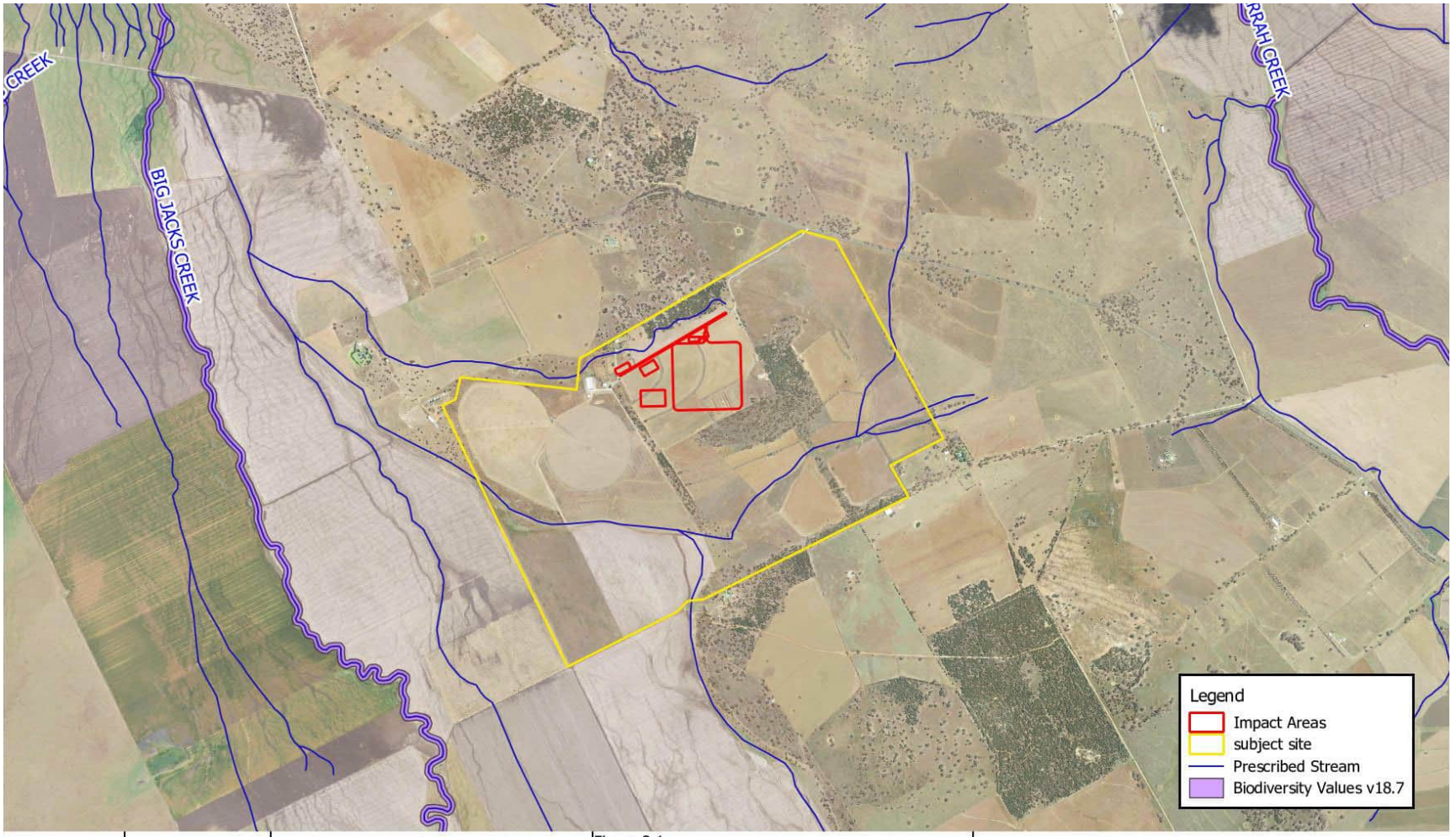
As the proposed development was not found to comply within any of the criteria it was determined that a BDAR and entry into the BOS threshold would not be applicable for this development. Thus, the survey methodology detailed in the following sections have been undertaken in accordance with the requirements for a standard Assessment of Significance.

3.2.1 SERIOUS AND IRREVERSIBLE IMPACTS

The BC Act imposes various obligations on determining authorities in relation to impacts on biodiversity values that are at risk of a serious and irreversible impact. Under the BC Act, a determination of whether an impact is serious and irreversible must be made in accordance with the principles prescribed in section 6.7 of the BC Regulation 2017. Species and ecological communities (SAII entities) that are likely to be the subject of serious and irreversible impacts are listed on the NSW DCCEEW website (NSW DCCEEW 2025f). No candidate SAII entities were found to be present within the site.

Table 3.1: Criteria for entry into the Biodiversity Offsets Scheme in relation to Part 4 for the proposal.

CRITERIA FOR ENTRY INTO THE BIODIVERSITY OFFSETS SCHEME (BOS)	SECTION CRITERIA ADDRESSED	ASSESSMENT OF CRITERIA
Part 4 development activities deemed to be 'State Significant' under the NSW Environmental Planning and Assessment Act 1979 (NSW EP&A Act)		The proposal is not recognised as State Significant
Development activities that have the potential to impact Areas of Outstanding Biodiversity Value (AOBV) as listed under Part 3 of the BC Act.	Section 8.0	No declared areas of outstanding biodiversity value were located within or in proximity to the site.
Development activities that have the potential to cause a significant impact on a threatened species, population or ecological community, listed under Schedules 1 and 2 of the BC Act, as determined by application of a five-part-test of significance in accordance with Section 7.3 of the BC Act;	Section 8.0	The five-part test found no significant impact on threatened species, populations or ecological communities listed under Schedules 1 and 2 of the BC Act.
Development activities that have the potential to impact areas mapped as having 'high biodiversity value' as indicated by the NSW Biodiversity Values Map (BV Map);	Section 3.0 Figure 3.1.	The NSW Biodiversity Values Map was consulted on the 21 February 2026. As of this date it was determined that there were no areas of mapped 'Biodiversity Values' within the impact area or within the subject land. An extract of the Biodiversity Values Map has been provided in Figure 3.1.
Development activities that involve clearing of native vegetation that exceeds the Biodiversity Offset Scheme thresholds (BOS thresholds) as determined by the NSW BC regulation.	Section 6.0	The clearing threshold for the subject land is 1ha. No areas of native vegetation are proposed to be impacted as a result of the proposal. Consequently, the proposed development would not exceed the biodiversity offsets scheme threshold regarding Section 7.2(b) of the BC Act.



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0 750 1500 m

Map Projection GDA2020 MGA Zone 56

Data Sources: LPI (2026),

Figure 3.1

Biodiversity Values Map

755 Warrah Ridge Road
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February 2026

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3.3 STATE ENVIRONMENTAL PLANNING POLICY (BIODIVERSITY AND CONSERVATION) 2021

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 (Biodiversity and Conservation SEPP) consolidates transfers and repeals provisions of previous SEPPs (or deemed SEPPs) into the following chapters:

Chapter 2. Vegetation in Non-Rural Areas;
Chapter 3. Koala Habitat Protection 2020;
Chapter 4. Koala Habitat Protection 2021;
Chapter 5. River Murray lands;
Chapter 6. Water catchments;
Chapters 7 - 12. Repealed
Chapter 13. Strategic conservation planning.

Chapters relevant to this proposal are Chapter 3 Koala habitat protection 2020.

3.3.1 CHAPTER 3 KOALA HABITAT PROTECTION 2020

This Chapter aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline—

- by requiring the preparation of plans of management before development consent can be granted in relation to areas of core koala habitat, and
- by encouraging the identification of areas of core koala habitat, and
- by encouraging the inclusion of areas of core koala habitat in environment protection zones.

This Chapter applies to land use zones RU1, RU2 and RU3 (or an equivalent land use zone) in LGAs specified in the SEPP (Biodiversity and Conservation) 2021, which includes the Liverpool Plains LGA. This Chapter has been addressed in Section 9.0 of this report.

3.3.2 LOCAL LAND SERVICES ACT 2013

Under the BC Act, section 6.8(3) regulates that the BAM is to exclude the assessment of the impacts of any clearing of native vegetation and loss of habitat on category 1-exempt land (within the meaning of Part 5A of LLS Act).

Category 1-exempt land is defined under the LLS Act (Part 5A Division 2 Section 60H) as:

Land is to be designated as category 1-exempt land if the Environment Agency Head reasonably believes that:

- the land was cleared of native vegetation as at 1 January 1990, or the land was lawfully cleared of native vegetation between 1 January 1990 and the commencement of this Part.

Land is to be designated as category 1-exempt land if the Environment Agency Head reasonably believes that:

- the land contains low conservation value grasslands, or the land contains native vegetation that was identified as regrowth in a property vegetation plan referred to in section 9 (2) (b) of the

Native Vegetation Act 2003, or

- the land is of a kind prescribed by the regulations as category 1-exempt land.

The method for determining category 1 – exempt land for this proposal is outlined in Section 5.0.

3.4 BIOSECURITY ACT 2015

The NSW Biosecurity Act 2015 provides regulatory controls and powers to manage priority weeds in NSW. For weed management this Act divides NSW into regions based on combined LGAs and priority weeds for a region are listed. Some weeds are managed at a state level as they form part of a broader containment strategy. The legislation compliments listed Weeds of National Significance (WoNS).

3.5 COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The purpose of the EPBC Act is to ensure that actions likely to cause a significant impact on Matters of National Environmental Significance (MNES) undergo a process of assessment. Under the EPBC Act, an action includes a project, undertaking, development or activity that may impact MNES. An action that 'has, will have or is likely to have a significant impact on a MNES' is deemed to be a 'controlled action' and may not be undertaken without prior approval from the commonwealth minister for the Department of Climate Change, Energy, the Environment and Water (DCCEEW).

MNES categories listed under the EPBC Act are:

- World heritage properties;
- National heritage places;
- Wetlands of international importance (Ramsar wetlands);
- Threatened species and ecological communities (Section 18 and 18A);
- Migratory species;
- Commonwealth marine areas;
- Nuclear actions (including uranium mining); and
- A water resource, in relation to coal seam gas development and large coal mining development.

Initially MNES protected under the EPBC Act are assessed in accordance with the Significant Impact Guidelines 1.1 - Matters of National Environmental Significance (DoE 2013). This is performed to determine if there is likelihood for an action to have a significant impact on MNES. An action will require referral to, and may require the approval of, the commonwealth minister for the Environment (in addition to any local or state government consent or approval) if that action will have, or is likely to have, a significant impact on the environment or on a MNES.

3.6 LICENSING

Fieldwork undertaken by Wildthing Environmental Consultants was carried out under NPWS Scientific Investigation Licence SL100345 and under Animal Care and Ethics Approval: Animal Research Authority Issue by the Department of Primary Industries (Trim File No. 13/251) for Fauna Survey for Biodiversity and Impact Assessment.

4.0 METHODOLOGY

4.1 DESKTOP ASSESSMENT

A site-specific literature and database review was undertaken prior to conducting the field survey and the preparation of this report. A list of the resources reviewed, the date they were accessed and the spatial extent of the search conducted, where relevant, is provided in Table 4.1.

Table 4.1: Desktop Resources

RESOURCE	LAST ACCESS DATE	SPATIAL EXTENT
Biodiversity Values and Landscape Maps		
BioNet Atlas of NSW Wildlife (BioNet) (DPIE 2023a)	19 January 2026	10x10km radius of subject site
Commonwealth Protected Matters Search Tool (PMST) (DCCEEW 2022a)	19 January 2026	10x10km radius of subject site
NSW Biodiversity Values Map (DPIE 2022b)	19 January 2026	Entire subject site
SIX Maps -Base Map - LPI 1:25,000 digital topographic databases (DTDB) (LPI 2022) -Cadastral data LPI digital cadastral database (DCDB) (LPI 2022)	Various dates	Entire subject site
NSW Government SEED Mapping (NSW Government 2022)	Various dates	Entire subject site
BioNet NSW (Mitchell) Landscapes – Version 3.1 (OEH 2016a)	19 January 2026	Entire subject site
NSW Interim Biogeographic Regions of Australia (IBRA region and sub-regions) – Version 7 (DAWE 2016).	19 January 2026	Entire subject site
Threatened Species and Vegetation Databases		
Commonwealth species profiles and threats database (SPRAT) (DCCEEW 2022a)	Various dates	-
DPE Profiles of threatened species, population, and ecological communities (DPIE 2022d)	Various dates	-
DPE BioNet vegetation classification database (DPIE 2022c)	Various dates	-
Reports		
Request for Secretary's Environmental Assessment Requirements for Designated Development, proposed Poultry Broiler Farm at 755 Warrah Ridge Road, Warrah Ridge NSW.	16 October 2025	Subject Site
Plans		
Construction Cohort (2025) Site Plan-Warrah Ridge, Free Range Broiler Farm – 755 Warrah Ridge Road, Warrah Ridge NSW.	13 September 2025	Subject Site

4.2 FIELD ASSESSMENT

Fieldwork was undertaken on 21 & 22 January 2026. A summary of the time spent on site during fieldwork and the prevailing weather conditions at the time is contained in Table 4.2.

Table 4.2: Survey Dates, Times and Weather Conditions

DATE	TIME	SURVEY EFFORT (PERSON HOURS)	ACTIVITY	WEATHER
Wednesday 21/01/2026	1000 - 1200	2h (1 person)	General site inspection Vegetation survey Diurnal fauna survey Tree survey Incidental observations	2/8 Cloud, 19.4°C, 41% relative humidity, Wind 7km//hr SSE
	1230 - 1730	5h (1 person)	Vegetation survey Vegetation plots Tree survey Diurnal fauna survey	1/8 Cloud, 23.5°C, 34% relative humidity, Wind 9km//hr SSE
Thursday 22/01/2026	0700 - 0930	2.5h (1 person)	Vegetation survey Vegetation plots Tree survey Diurnal fauna survey	3/8 Cloud, 19.4°C, 41% relative humidity, Wind 7km//hr SSE

A detailed methodology for the surveys listed within Table 4.2 above have been described in the following Sections 4.2.1 – 4.2.5:

4.2.1 VEGETATION ASSESSMENT

Searches were undertaken of the BioNet VIS Database (DPE 2026c), NSW SEED mapping to access existing vegetation mapping information within the subject area (NSW Government 2026).

4.2.2 MAPPING NATIVE VEGETATION EXTENT

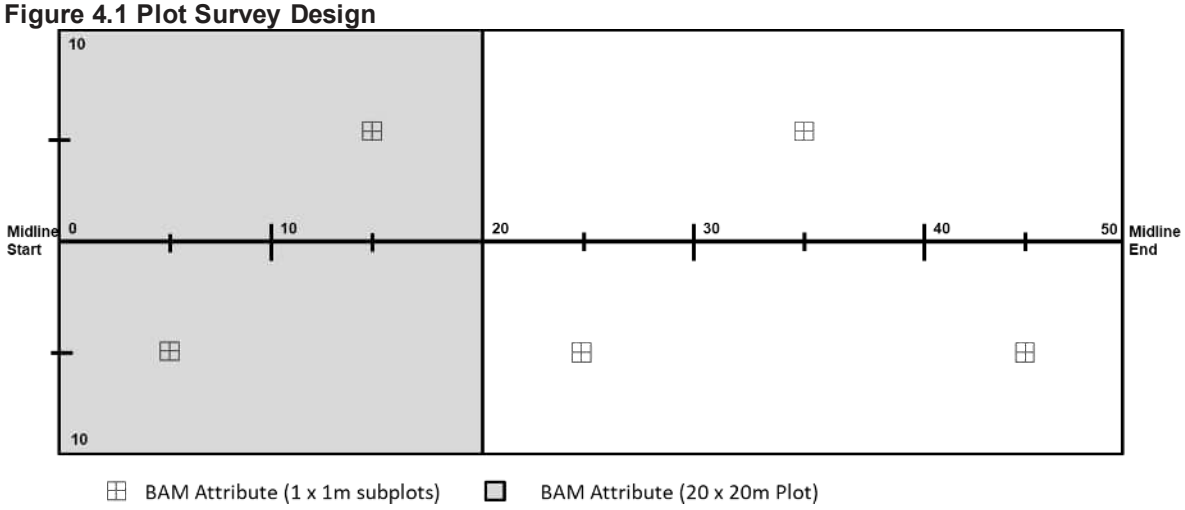
Based on the results of the review of existing information appropriate surveys were designed for the subject land. Vegetation mapping was based on aerial photo interpretation, broad vegetation composition, landform, physiography and on quantitative data collection through identification of all plants encountered to the species level.

4.2.3 PLOT-BASED VEGETATION SURVEY AND VEGETATION INTEGRITY SURVEY

Detailed floristic surveys were undertaken within the impact area on 21 & 22 January 2026 to provide detail of the composition of the vegetation within the impact area. This survey included the establishment of four BAM vegetation integrity plots. Each plot was established within different areas of the proposal. Due to the presence of a planted oats crop within the Centre Pivot Irrigation

area no plot was undertaken in this area. Data was collected in accordance with BAM Subsection 4.2.1 and 4.3.4 (DPE, 2022) by persons trained in the BAM. The field data collected can be found in Appendix C and photos of the BAM plots is shown in Appendix D. The diagram below demonstrates the layout of a plot and details the survey methodology (Figure 4.1). The plot locations have been shown in Figure 4.2.

Figure 4.1 Plot Survey Design



The following site attributes were recorded at each site while conducting survey plots:

- Midline start and end points (easting – northing grid type MGA 2020, Zone 56)
- Vegetation structure and dominant species and vegetation condition.

Composition attributes (in 20 x 20m plot)

- All native species
- All introduced species (including high threat weeds)

Structure attributes (in 20 x 20m plot)

- Estimate of foliage cover of every native and introduced species recorded. Foliage cover is defined as the percentage of the plot covered by a vertical projection of all attached plant material, regardless of whether it appears alive or dead, of all individuals of a species.

Function attributes (in 50 x 20m plot)

- Presence or absence of each tree stem size class (diameter at breast height, over bark and measured at 1.3 metres above ground level). Classes include 5–9cm, 10–19cm, 20–29cm, 30–49cm
- Tally and DBH of large trees where DBH is between 50-79cm or equal to or above 80cm
- Tally and DBH of regenerating trees with a DBH below 5cm
- Length of all fallen logs. Fallen logs are defined as dead woody material with a diameter greater than 10cm. Where logs extend outside the plot only the length within the plot is recorded.
- Percentage cover of leave litter, bare ground, cryptograms and bare rock in each 1 x 1m plot. Litter is taken as plant material detached from a plant including leaves, seeds, twigs, branchlets and branches with diameter of

Other Attributes

- Number of stems with hollows is counted in the plot (50 x 20m). A tree is considered to contain a hollow if:
  - the entrance can be seen;
  - the entrance width is at least 5 centimetres;
  - the hollow appears to have depth (i.e., solid wood cannot be seen beyond the entrance); and
  - the hollow is at least 1 metre above the ground

A list of all flora species identified has been provided in Appendix A. Field survey tracks are shown in Figure 4.2.

Job Ref	13003
A4 Scale	1:5000

Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarentee is given that the information protrayed is free from error or omission. In addition the spatial accuracy of the map is wholly dependant on source data. Please verify the accuracy of all information prior to use. Development footprint areas should be used for indicative areas only.

0 100 200 m

Map Projection GDA2020 MGA Zone 56

Data Sources: LPI (2023),

Figure 4.2

Floristic Plot Locations

755 Warrah Ridge Road
WARRAH RIDGE, NSW

2 March 2026

WILDTHING Environmental Consultants
(a Division of Tattersall Lander Pty Ltd)
ABN 41 003 509 215

4.2.4 DIURNAL FAUNA SURVEY

Opportunistic sightings of species and secondary indications (scats, scratches, diggings, tracks etc.) of resident fauna were noted and included:

- dedicated searches for avifauna;
- dedicated searches for herpetofauna;
- checks for obvious nests of raptors;
- checking trees (particularly smooth-barked species) for scratches consistent with arboreal mammals.

4.2.5 GENERAL HABITAT FOR NATIVE SPECIES

From the vegetation appraisal, diurnal fauna survey and a general inspection of the site and surrounding areas, a subjective assessment of the general habitat value of this site was made. Considered in this assessment were:

- occurrence of that habitat type in the general vicinity;
- degree of disturbance and degradation;
- area occupied by that habitat on site; continuity with similar habitat adjacent to the site, or connection with similar habitat off site by way of corridors; and
- structural and floral diversity.

4.2.6 TREE SURVEY

During the fieldwork, a survey was undertaken to identify trees within proximity to the impact area. The survey also involved identifying any hollow-bearing trees present. Hollow-bearing trees are a habitat resource utilised by a variety of native avifaunal and mammalian species. This resource is usually a limiting factor in the occurrence of hollow-dependent species on a site, due to the time taken for hollows to form in trees. It must be noted that observations made from ground level may fail to record a small number of hollows that are obscured. Some entrances may also not lead to a cavity. The internal dimensions of the hollows are also impossible in many cases to determine from the ground.

4.2.7 HABITAT FOR SIGNIFICANT SPECIES

The impact area was evaluated as potential habitat for each of the threatened species reported on the BioNet (NSW DCCEEW, 2026a) and PMST (Commonwealth DCCEEW, 2026a) databases from within 10km of the site. This evaluation was based on home range, feeding, roosting, breeding, movement patterns and corridor requirements for fauna and hydrology, soil types, aspect and structural formation for flora species. The list of threatened species recorded within these databases is provided within Table 4.3 and an assessment of the likelihood of occurrence of these threatened species within the subject land is provided in Table 5.3.

4.3 SIGNIFICANT SPECIES

The following threatened species listed in Table 4.3 have been recorded on the BioNet (NSW DCCEEW, 2026a) and PMST (Commonwealth DCCEEW, 2026a) Databases as occurring within 10km of the subject land. Species marked with an asterisk (*) are listed on the DCCEEW Database as having habitat likely to occur within 10km of the subject site.

Table 4.3: Threatened species, endangered populations and ecological communities considered.

Scientific Name	Common Name	BC Act 2016	EPBC Act 1999
Flora Species			
**Cadellia pentastylis*	Ooline	V	V
**Dichanthium setosum*	Bluegrass	V	V
Digitaria porrecta	Finger Panic Grass	E1	
**Lepidium aschersonii*	Spiny Peppercress	V	V
**Lepidium monoplocoides*	Winged Pepper-cress	E1	E
Tylophora linearis (Vincetoxicum forsteri)		V	E
**Swainsona murrayana*	Slender Darling-pea	V	V
**Euphrasia arguta*		E4A	CE
**Androcalva procumbens*		V	V
**Thesium australe*	Austral Toadflax	V	V
**Bertya mollissima*	Bertya mollissima	E1	E
Fish			
**Maccullochella peelii*	Murray Cod		V
Amphibians			
**Litoria booroolongensis*	Booroolong Frog	E1	E
Reptiles			
**Uvidicolus sphyrurus*	Border Thick-tailed Gecko	V	V
**Anomalopus mackayi*	Five-clawed Worm-skink	E1	V
**Aprasia parapulchella*	Pink-tailed Worm-lizard	V	V
**Delma vescolineata*	Hunter Valley Delma	E1	E
**Hemiaspis damelii*	Grey Snake	E1	E
Birds			
**Actitis hypoleucos*	Common Sandpiper		M
**Calidris acuminata*	Sharp-tailed Sandpiper		V & M
**Calidris ferruginea*	Curlew Sandpiper	E4A	CE & M
**Calidris melanotos*	Pectoral Sandpiper		M
**Gallinago hardwickii*	Latham's Snipe	V	V
**Rostratula australis*	Australian Painted Snipe	E1	E
**Botaurus poiciloptilus*	Australasian Bittern	E1	E
**Apus pacificus*	Fork-tailed Swift		M
**Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V	V
**Callocephalon fimbriatum*	Gang Gang Cockatoo	E1	E
**Lathamus discolor*	Swift Parrot	E1	CE
**Neophema chrysostoma*	Blue-winged Parrot	V	V
**Polytelis swainsonii*	Superb Parrot	V	V
Parvipsitta pusilla	Little Lorikeet	V	
**Aphelocephala leucopsis*	Southern Whiteface	V	V
**Hirundapus caudacutus*	White-throated Needletail	V	V & M
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	
**Melanodryas cucullata cucullata*	South-eastern Hooded Robin	E1	E
**Motacilla flava*	Yellow Wagtail		M
Climacteris picumnus victoriae	Brown Treecreeper	V	V
Stagonopleura guttata	Diamond Firetail	V	V
Pomatostomus temporalis subsp. *temporalis*	Grey-crowned Babbler	V	
Pyrrholaemus sagittatus	Speckled Warbler	V	
**Anthochaera phrygia*	Regent Honeyeater	E4A	CE
**Grantiella picta*	Painted Honeyeater	V	V
Circus assimilis	Spotted Harrier	V	
**Erythrotriorchis radiatus*	Red Goshawk	E1	E
Hieraaetus morphnoides	Little Eagle	V	
Haliaeetus leucogaster	White-bellied Sea Eagle	V	M
**Falco hypoleucos*	Grey Falcon	V	V

Scientific Name	Common Name	BC Act 2016	EPBC Act 1999
Falco subniger	Black Falcon	V	
Mammals			
**Dasyurus maculatus maculatus*	Spotted-tailed Quoll	V	E
Phascolarctos cinereus	Koala	E1	E
**Petaurus australis*	Yellow-bellied Glider	V	V
**Pteropus poliocephalus*	Grey-headed Flying-fox	V	V
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	
**Nyctophilus corbeni*	Corben's Long-eared Bat	V	V
Scoteanax rueppellii	Greater Broad-nosed Bat	V	
**Chalinolobus dwyeri*	Large-eared Pied Bat	E1	E
Endangered Ecological Communities			
Artesian Springs Ecological Community in the Great Artesian Basin		E4B	
Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions		E3	
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions			E
Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions		E3	
Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia			E
Howell Shrublands in the New England Tableland and Nandewar Bioregions		E3	
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions		E3	
Mount Kaputar high elevation and dry rainforest land snail and slug community in the Nandewar and Brigalow Belt South Bioregions		E3	
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions		E3	
Native Vegetation on Cracking Clay Soils of the Liverpool Plains		E3	
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland			CE
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands			CE
Poplar Box Grassy Woodland on Alluvial Plains			E
Semi-evergreen Vine Thicket in the Brigalow Belt South and Nandewar Bioregions		E3	
Weeping Myall Woodlands			E
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions		E4B	
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland			CE

E1/E=Endangered Species E2=Endangered Population E3=Endangered Ecological Community
V=Vulnerable Species V2= Vulnerable Ecological Community E4A/E4B/CE=Critically Endangered
M=Migratory Species

5.0 DETERMINING NATIVE VEGETATION LAND CATEGORISATION FOR APPLICATION IN THE BIODIVERSITY OFFSETS SCHEME

5.1.1 THE TRANSITIONAL NATIVE VEGETATION REGULATORY (NVR) MAP

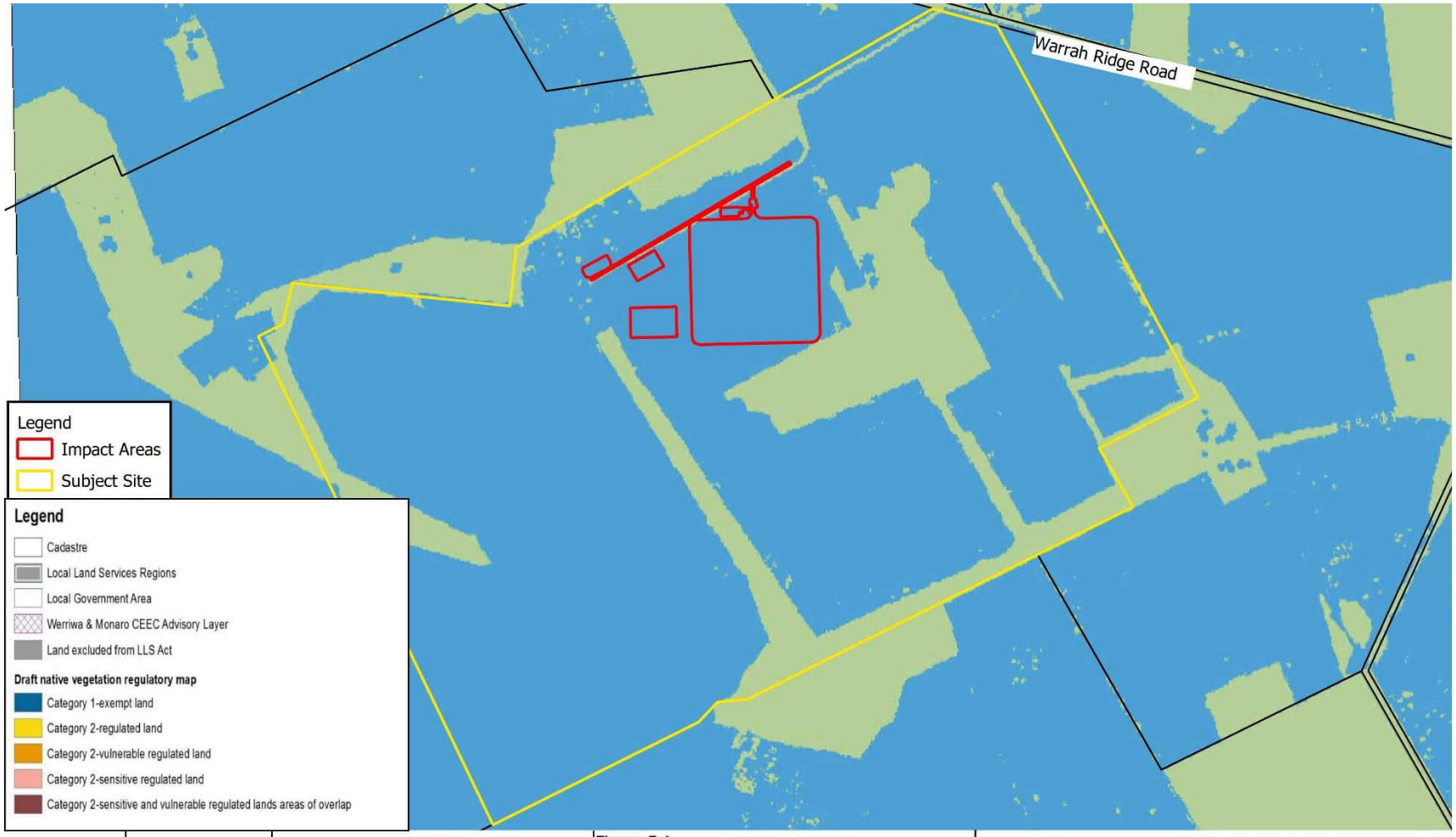
No areas of land category within the meaning of Part 5A of LLS Act were mapped within the subject site or impact area on the Transitional Vegetation Regulatory Map.

5.1.2 THE DRAFT NATIVE VEGETATION REGULATORY (NVR) MAP

The draft NVR map displaying all land categories identified in the LLS Act shows the impact areas to be contained within Category 1 Exempt Land. An area of Category 2 Regulated Land was present along the existing access road from Warrah Ridge Road which mirrors the trees planted alongside the road. Additional areas of Category 2 Regulated Land were present to the south, east and north of the impact area which were areas of remnant native vegetation. None of these trees or areas of remnant native vegetation are required to be impacted as part of the proposal. Land categories within the subject site are shown in Figure 5.1.

5.1.3 NATIVE VEGETATION WITHIN THE IMPACT AREA

The proposed farm is located within an area which has been historically cleared and is currently used for cropping. No clearing of native outside of the established cropping areas is expected to facilitate the construction of the farm.



Job Ref	13003
A4 Scale	1:17000

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0 500 m

Map Projection GDA2020 MGA Zone 56

Data Sources: LPI (2026),

Figure 5.1

Draft Native Vegetation Regulatory Map showing proposed impact area.

755 Warrah Ridge Road
WARRAH RIDGE, NSW

February 2026

WILDTHING Environmental Consultants
(a Division of Tattersall Lander Pty Ltd)
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6.0 RESULTS

6.1 FLORA ASSEMBLAGES

The proposed farm (impact area) is located within an area which has been historically cleared and is currently used for cropping. No clearing of native outside of the established cropping areas is required to facilitate the construction of the farm.

As previously stated all proposed impact areas have been subject to cropping. The impacted cropping areas were divided into areas currently under irrigation and these subject to dry land farming. Planted mature native trees were also present along the access road and to the north and east of the proposed managers residences. Areas of remnant native vegetation were present within proximity to the impact area. Vegetation assemblages most consistent with one Plant Community Type (PCT) PCT 437 Yellow Box grassy woodland on lower hillslopes and valley flats in the southern NSW Brigalow Belt South Bioregion was present to the south and north of the impact area.

A vegetation map of the site is shown in Figures 6.1. A full list of the flora species recorded during the fieldwork is listed in Appendix A. Photos are shown in Plates 6.1 - 6.15.

Vegetation within impact Area

Cropping Area - Centre Pivot Irrigation

The larger portion of the farm which will contain the poultry sheds and other infrastructure such as grain storage silos (facilities) was centred over an area occupied by existing centre pivot irrigation. This area was characterised at the time by furrowed bare ground with scattered and clumped introduced ground covers. A crop of *Avena sativa* (Oats) had recently been planted. Scattered specimens of the crop species *Sorghum bicolor* (Sorghum) which was likely previously planted were also scattered over this area. Other introduced weed species included *Urochloa panicoides* (Liverseed Grass), *Xanthium spinosum* (Bathurst Burr), *Lactuca saligna*, *Conyza* sp. (Fleabane), *Alternanthera pungens* (Khaki Weed), *Tribulus* sp and *Echinochloa crus-galli* (Barnyard Grass). Native species observed were *Cynodon dactylon* (Couch), and *Portulaca oleracea* (Purslane).

Cropping Area – Currently under Dryland Farming

Impacted areas currently under dryland farming included the areas proposed for the managers residences, solar farm, detention basin and edges of the larger farm and entry road. These areas were dominated by introduced grasses and other low groundcovers. Common introduced grasses were *Urochloa panicoides* (Liverseed Grass), *Digitaria sanguinalis* (Summer Grass) and *Bromus catharticus* (Prairie Grass). *Sorghum bicolor* subsp. *almum* (Columbus Grass) and *Avena barbata* (Wild Oats) were also common species within the area of the Managers Residences. Other common introduced species were *Alternanthera pungens* (Khaki Weed), *Polygonum aviculare* (Wireweed), *Conyza* sp., *Tribulus* sp, *Lactuca saligna, Sida rhombifolia* (Paddy's Lucerne), *Medicago sativa* (Lucerne), *Solanum nigrum* (Blackberry Nightshade) and *Citrullus lanatus* (Bitter Melon). Native species observed within this area included *Cynodon dactylon* (Couch), *Calotis lappulacea* (Yellow Burr-daisy) and *Einadia trigonos* (Fishweed).

Job Ref	13003
A4 Scale	1:5000

Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarentee is given that the information protrayed is free from error or omission. In addition the spatial accuracy of the map is wholly dependant on source data. Please verify the accuracy of all information prior to use. Development footprint areas should be used for indicative areas only.

0 100 200 m

Map Projection GDA2020 MGA Zone 56

Data Sources: LPI (2023),

Figure 6.1

Vegetation Map

755 Warrah Ridge Road
WARRAH RIDGE, NSW

February 2026

WILDTHING Environmental Consultants
(a Division of Tattersall Lander Pty Ltd)
ABN 41 003 509 215

Plate 6.1: Introduced vegetation within Centre Pivot Irrigation cropping area.

Plate 6.2: Introduced vegetation within Centre Pivot Irrigation cropping area.

Plate 6.3: Cropping within area of proposed solar farm.

Plate 6.4: Cropping within area of detention basin.

Plate 6.5: Cropping within farm entrance (edge of Centre Pivot Irrigation Area)

Plate 6.6: Cropping area (Location of Managers Residences)

Vegetation within proximity to impact Area

Planted Mature Native Trees

Planted line sections of mature native trees were present along the northern side of the entrance road and to the north and east of the proposed managers residences. The dominant planted tree species was *Eucalyptus camaldulensis* (River Red Gum). Other tree species were *Eucalyptus melliodora* (Yellow Box), *Eucalyptus moluccana* (Grey Box) and *Angophora floribunda* (Rough-barked Apple).

Planted Introduced Trees

A line of planted introduced trees; *Fraxinus* sp. (Ash) were present along a southern section of the existing access road in the east.

Remnant Native Vegetation

Vegetation assemblages most consistent with one Plant Community Type (PCT) PCT 437 Yellow Box grassy woodland on lower hillslopes and valley flats in the southern NSW Brigalow Belt South Bioregion was present to the south, east and north of the impact area. Common canopy species within this area were *Eucalyptus melliodora* (Yellow Box) and *Angophora floribunda* (Rough-barked Apple). Areas of *Callitris glaucophylla* (White Cypress) were also present. Smaller trees and shrubs included *Brachychiton populneus* (Kurrajong) and *Acacia decora* (Western Silver Wattle). Common native groundcovers included *Austrostipa verticillata* (Slender Bamboo Grass), *Aristida vagans* (Three-awn Grass), *Einadia trigonos* (Fishweed) and *Boerhavia dominii*.

One isolated remnant tree (Tree No. 30) a specimen of *A. floribunda* was recorded close to the western boundary of the main proposed farm.

Plate 6.7: Mature planted native trees along northern entrance road (facing west).

Plate 6.8: Mature planted native trees along northern entrance road (facing east).

Plate 6.9: Mature planted native trees to north of proposed managers residences.

Plate 6.10: Mature planted native trees to east of proposed managers residences.

Plate 6.11: Line of planted introduced Ash (*Fraxinus* sp) along the southern side of the access road.

Plate 6.12: PCT 437 Yellow Box Grassy Woodland (south of main farm area).

Plate 6.13: PCT 437 Yellow Box Grassy Woodland (more disturbed area to the east).

Plate 6.14: PCT 437 Yellow Box Grassy Woodland (White Cypress Pines to SE)

Plate 6.15: Remnant isolated tree close to east of main farming area (Tree No. 30).

6.1.1 THREATENED ECOLOGICAL COMMUNITIES

Eighteen threatened ecological communities (TECs) have been recorded within the region according to both the BioNet (DPE, 2023) and PMST databases, results of the database search conducted for TECs are shown within Table 4.3.

No areas of native vegetation were identified within the proposed impact areas. One Plant Community Type (PCT) detailed in the NSW Vegetation Information System (VIS) classification database; PCT 437 Yellow Box grassy woodland on lower hillslopes and valley flats in the southern NSW Brigalow Belt South Bioregion was present to the south and north of the impact area. PCT 437 was found to be consistent with the listed NSW BC Act 2016 Critically Endangered Ecological Community (CEEC) White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions. PCT 437 was also consistent with the nationally listed (CEEC) White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

The proposal will not likely have any direct impact on this CEEC. This CEEC has been has been addressed within Section 8.0 and 9.0 of this report.

6.1.2 THREATENED AND RARE FLORA SPECIES

Eleven threatened plant species have been recorded within 10km of the subject land according to the BioNet (NSW DCCEEW, 2026a) and PMST (Commonwealth DCCEEW, 2026a) Databases (Table 4.3). As a result

of the high disturbance within the proposed impact area none of the threatened addressed flora species were considered to have potential habitat.

The impact of the proposal on threatened flora species has been addressed in Section 8.0 of this report.

6.1.3 PRIORITY WEEDS AND WEEDS OF STATE AND NATIONAL SIGNIFICANCE

Seven priority weed species listed under the Biosecurity Act 2015 were identified on site and are listed below in Table 6.1.

Table 6.1: Priority Weed species found within the subject land.

WEED SPECIES	LEGAL REQUIREMENTS	ADDITIONAL SIGNIFICANCE
Echium plantagineum Paterson's Curse	General Biosecurity Duty Regional Recommended Measure (Hunter)	
Carthamus lanatus Saffron Thistle	General Biosecurity Duty	
Senecio madagascariensis Fireweed	General Biosecurity Duty Regional Recommended Measure	N
Xanthium spinosum *Bathurst Burr*	General Biosecurity Duty	
Opuntia stricta Prickly Pear	General Biosecurity Duty Prohibition on dealings Regional Recommended Measure	
Rubus fruticosus species aggregate Blackberry	General Biosecurity Duty Prohibition on dealings Regional Recommended Measure	
Heliotropium amplexicaule Blue Heliotrope	General Biosecurity Duty Regional Recommended Measure (Hunter)	

T – Listed as a Threatening Process under the NSW BC Act 2016.
N –Weed of National Significance.

***Priorities under the Biosecurity Act 2015**

General Biosecurity Duty - any person dealing with plant matter must take measures to prevent, minimise or eliminate the biosecurity risk (as far as is reasonably practicable).

Prohibition on dealings - Must not be imported into the State or sold.

Regional Recommended Measure - Land managers mitigate the risk of the plant being introduced to their land. Land managers reduce impacts from the plant on priority assets. Land managers prevent spread from their land where feasible. The plant or parts of the plant are not traded, carried, grown, or released into the environment.

Biosecurity Zone - Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone

Control Order - owners and occupiers must notify the local control authority for the area if the weed is part of a new infestation on the land, destroy all specimens are destroyed; and keep the land free of this weed.

It is recommended that priority and other invasive weeds are controlled as part of routine asset maintenance.

6.2 HABITAT APPRASIAL

6.2.1 HABITAT DESCRIPTION AND DISTRIBUTION IN THE VICINITY

The vegetation and landforms present within the subject land offer potential habitat for a number of native species. The broad habitat types within the subject land consisted of Open Woodland and Disturbed Grassland. A small area of aquatic habitat was also present along the access road.

<u>Disturbed Open Grassland</u>

Disturbed Grassland provides habitat for a number of avifauna species, including predominantly terrestrial species preferring open spaces, seed eating birds and several birds of prey, which may hunt over this area in search of potential prey species. Macropods may also frequent such areas whilst grazing. Some species of bats would also forage over these areas for insects. The lack of trees and shrubs limits the value of such areas for many species, particularly some reptiles, small mammals and birds which are vulnerable to predation in open spaces.

6.2.2 TREE SURVEY

A total of 80 native trees were recorded within proximity to the impact area. None of the 80 trees will require removal as part of the proposal.

Details of each of the 80 trees including height, diameter at standard height (DSH), coordinates and fauna habitat attributes such as hollows are contained Appendix B. The location of the trees is shown in Figure B1.

6.3 HABITAT FOR SIGNIFICANT SPECIES

An assessment of habitat attributes on site has been undertaken for the significant species listed in Table 4.3. The results of the assessment using definitions shown in Table 6.2 are displayed in Table 6.3. Threatened species identified in this assessment as having potential habitat available on site have been considered further in Section 8.0 of this report.

Table 6.2: Definitions of likelihood of occurrence criteria.

Likelihood of Occurrence	Threatened Fauna	Threatened Flora
Unlikely	Suitable habitat is absent from the study area and/or the study area is outside of the species known distribution	
Low	• The species has not been recorded in the locality (10km) within the last five years; and/or • Although suitable habitat is present in the study area the suitable habitat is in a highly modified, limited or degraded state; and/or • This species may be an occasional visitor, but habitat similar or of higher quality is widely distributed in the local area.	• The species has not been recorded in the locality (10km) within the last five years, and/or • Although suitable habitat is present in the study area the suitable habitat is in a highly modified or degraded state
Moderate	• The species has been recorded in the locality (10km) within the last five years; and/or • It is unlikely to be dependent on habitat within the study area (i.e., for breeding or important life cycle periods) or to maintain a permanent resident population. However, the species may seasonally, opportunistically or occasionally use resources within the study area; and/or • Although suitable habitat is present in the study area the suitable habitat is in a moderately modified, limited or degraded state This category includes fauna species that were targeted by seasonal surveys and were not recorded, wide ranging species which may fly-over' the site, regardless of the habitat types present and generalist species with non-specific habitat requirements	• The species has been recorded in the locality (10km) within the last five years; and/or. • Although potential habitat is present in the study area the suitable habitat is in a moderately modified or degraded state. This category includes flora species that were targeted by seasonal surveys and were not recorded.
High	• The species has been recorded in the locality (10km) within the last five years; and/or • It is highly likely that the species inhabits the study area and is dependent on identified suitable habitat (i.e., for breeding or important life cycle periods) and is likely to maintain a resident population. This includes species that are known to visit the study area during regular seasonal movements or migration.	• The species has been recorded in the locality (10km) within the last five years; and/or • It is highly likely to inhabit the study area and is dependent on identified suitable habitat.
Known	The species was observed in the study area during the current survey and/or was recorded during a survey conducted on the site during the last 5 years.	

Table 6.3: Habitat Assessment for Significant Species (Oceanic fauna have been removed from assessment).

SPECIES	STATUS			HABITAT DESCRIPTION AND LOCALLY KNOWN POPULATIONS	LIKELIHOOD OF OCCURRENCE WITHIN THE SITE
	BC Act 2016	EPBC Act 1999	SAII		
FLORA					
Cadellia pentastylis Ooline	V	V		Occurs along the western edge of the North West Slopes from north of Gunnedah to west of Tenterfield. Dispersal of fruit and seed is probably by "passive fall" or by birds. Seeds showed a high rate of infertility at all sites, although they have been successfully germinated and established after heat application. Forms a closed or open canopy mixing with eucalypt and cypress pine species. There appears to be a strong correlation between the presence of Ooline and low- to medium-nutrient soils of sandy clay or clayey consistencies, with a typical soil profile having a sandy loam surface layer, grading from a light clay to a medium clay with depth.	**Unlikely** No suitable habitat was present.
Dichanthium setosum Bluegrass	V	V	No	Occurs on the New England Tablelands, Northwest Slopes and Plains and the Central Western Slopes of NSW, extending to northern Queensland. Associated with heavy basaltic black soils and red-brown loams with clay subsoil.	**Unlikely** No suitable habitat was present.
Digitaria porrecta Finger Panic Grass	E1			Finger Panic Grass occurs in NSW and Queensland. In NSW it is found on the North West Slopes and Plains, from near Moree south to Tambar Springs and from Tamworth to Coonabarabran. In NSW, the most frequently recorded associated tree species are *Eucalyptus albens* and *Acacia pendula*. Common associated grasses and forbs in NSW sites include *Austrostipa aristiglumis, Enteropogon acicularis, Cyperus bifax, Hibiscus trionum* and *Neptunia gracilis*.	**Unlikely** No suitable habitat was present.
Lepidium aschersonii Spiny Peppercress	V	V	No	Endemic to mainland southern Australia, north-eastern NSW to WA. Occurs in the marginal central-western slopes and north-western plains regions of NSW. Associated with periodically wet sites such as gilgai depressions and the margins of freshwater and saline marshes and shallow lakes, usually on heavy clay soil (*Harris & Smith 2000*).	**Unlikely** No suitable habitat was present.
Lepidium monoplocoides Winged Pepper-cress	E1	E		Widespread in the semi-arid western plains regions of NSW. 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* (Bulloak) 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.	**Unlikely** No suitable habitat was present.
Tylophora linearis (Vincetoxicum forsteri)	V	E	No	Occurs from southern Queensland into central NSW. Grows in dry scrub and open forest.	**Unlikely** No suitable habitat was present.
Swainsona murrayana Slender Darling-pea	V	V	No	Found NSW, recorded in the Jerilderie and Deniliquin areas of the southern riverine plain, the Hay plain as far north as Willandra National Park, near Broken Hill and in various localities between Dubbo and Moree. Grows in vegetation types including bladder	**Unlikely** No suitable habitat was present.

SPECIES	STATUS			HABITAT DESCRIPTION AND LOCALLY KNOWN POPULATIONS	LIKELIHOOD OF OCCURRENCE WITHIN THE SITE
	BC Act 2016	EPBC Act 1999	SAII		
				saltbush, black box and grassland communities. As well as remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated	
Euphrasia arguta Eyebright	E4A	CE	Yes	Found within the Nundle area reported from eucalypt forest with a mixed grass and shrub understorey; here, plants were most dense in an open disturbed area and along the roadside, indicating the species had regenerated following disturbance.	**Unlikely** No suitable habitat was present.
Androcalva procumbens	V	V	No	In sandy sites mainly confined to the Dubbo;-Mendooran;-and Gilgandra region.	**Unlikely** No suitable habitat was present.
Thesium australe Austral Toadflax	V	V	No	Grows in grassland or woodland, often in damp sites.	**Unlikely** No suitable habitat was present.
Bertya mollissima	E1	E	No	Endemic to north-eastern NSW, known to occur from Mount Kaputar, Warrumbungle and Liverpool Ranges to the Scone and Singleton districts. Occurs on steep hillsides and mountain summits in shallow sandy or gravelly soil in rock cracks and among boulders. Within heath or open woodland communities. between 500 to 1500 m above sea level.	**Unlikely** No suitable habitat was present.
FAUNA – FISH					
Maccullochella peelii Murray Cod		V	No	Occurs naturally in the waterways of the Murray–Darling Basin in a wide range of warm water habitats that range from clear, rocky streams to slow flowing turbid rivers and billabongs.	**Unlikely** No suitable habitat was present.
FAUNA - AMPHIBIANS					
Litoria booroolongensis Booroolong Frog	E1	E	No	Restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. Lives along permanent streams with some fringing vegetation cover such as ferns, sedges, or grasses. Adults occur on or near cobble banks and other rock structures within stream margins.	**Unlikely** No suitable habitat was present.
FAUNA - REPTILES					
Uvidicolus sphyrurus Border Thick-tailed Gecko	V	V	No	Found only on the tablelands and slopes of northern NSW and southern Queensland, reaching south to Tamworth and west to Moree. Favours forest and woodland areas with boulders, rock slabs, fallen timber and deep leaf litter. Most common in the granite country of the New England Tablelands.	**Unlikely** No suitable habitat was present.
Anomalopus mackayi Five-clawed Worm-skink	E1	V		Patchy distribution on the North West Slopes and Plains of north-east NSW and south-east Queensland, from the Ashford area west to Mungindi and Walgett in NSW and north to Dalby in Queensland. 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.	**Unlikely** No suitable habitat was present.
Aprasia parapulchella Pink-tailed Worm-lizard	V	V	No	Is distributed along the western foothills of the Great Dividing Range between Bendigo in Victoria and Gunnedah in northern New South Wales. Generally, occupies sites with a grassy	**Unlikely**

SPECIES	STATUS			HABITAT DESCRIPTION AND LOCALLY KNOWN POPULATIONS	LIKELIHOOD OF OCCURRENCE WITHIN THE SITE
	BC Act 2016	EPBC Act 1999	SAII		
				ground layer particularly those dominated by Kangaroo Grass with little or no leaf litter, and relatively low tree and shrub cover. Sites are typically well-drained, with rocky outcrops or scattered, partially buried rocks.	No suitable habitat was present.
Delma vescolineata Hunter Valley Delma	E1	E	No	Is known almost entirely from a 25 km wide corridor in the Hunter Valley NSW, between Maitland and Muswellbrook. The sites where the species has been detected include rehabilitated mine sites and pastoral land used for cattle grazing.	**Unlikely** No suitable habitat was present.
Hemiaspis damelii Grey Snake	E1	E		In NSW the species occupies five geographically discrete subpopulations, predominantly associated with the lower reaches of major westerly flowing rivers, including the Gwydir, Namoi, Castlereagh, Macquarie, Lachlan, and Murrumbidgee River systems. Floodplains and ephemeral wetlands associated with heavy clay soils are key habitat features for the Grey Snake. In NSW, the Grey Snake's habitat includes the margins of ephemeral wetlands within River Red Gum (Eucalyptus camaldulensis) and Black Box (E. largiflorens) vegetation communities and Tangled Lignum (Duma florulenta) swamps	**Unlikely** No suitable habitat was present.
FAUNA - BIRDS					
Actitis hypoleucos Common Sandpiper		M		Common Sandpiper is found in coastal or inland wetlands, both saline or fresh. It is found mainly on muddy edges or rocky shores.	**Unlikely** No suitable habitat was present.
Calidris acuminata Sharp-tailed Sandpiper		V & M	No	Widespread in both inland and coastal locations and in both freshwater and saline habitats.	**Unlikely** No suitable habitat was present.
Calidris ferruginea Curlew Sandpiper	E4A	CE	Yes	Tidal mudflats; saltmarsh; fresh, brackish or saline wetlands; sewage ponds.	**Unlikely** No suitable habitat was present.
Calidris melanotos Pectoral Sandpiper		M		On migration and in winter, the Pectoral Sandpiper is typically found in freshwater habitats usually coastal or near-coastal, but occasionally farther inland. This includes: coastal lagoons, estuaries, swamps, lakes, creeks, floodplains, and artificial wetlands. Wetlands often have open fringing mudflats, and low, emergent or fringing vegetation.	**Unlikely** No suitable habitat was present.
Gallinago hardwickii Latham's Snipe	V	V	No	Utilises a variety of habitat, such as soft wet ground or shallow water with tussock and other green and dead vegetation, and scrub or open wetland from sea-level to alpine bogs.	**Unlikely** No suitable habitat was present.
Rostratula australis Australian Painted snipe	E1	E	No	Margins of swamps and streams, chiefly those covered with low and stunted vegetation.	**Unlikely** No suitable habitat was present.
Botaurus poiciloptilus Australasian Bittern	E1	E	No	The Australasian Bittern lives alone or in loose groups and favours permanent fresh waters dominated by sedges, rushes, reeds or cutting grasses (eg. Phragmites, Scirpus, Eleocharis,	**Unlikely** No suitable habitat was present.

SPECIES	STATUS			HABITAT DESCRIPTION AND LOCALLY KNOWN POPULATIONS	LIKELIHOOD OF OCCURRENCE WITHIN THE SITE
	BC Act 2016	EPBC Act 1999	SAII		
				Juncus, Typha, Baumea and Gahnia) and feeds on insects, small fish, eels, frogs and other aquatic life, sometimes in rice fields.	
Apus pacificus Fork-tailed Swift		M		Breeds in rocky areas, caves, or under buildings; winters in diverse zones, including arid areas, coasts, and urban environments in Australia.	**Moderate** Due to the non-specific habitat requirements of this species habitat was considered to be present.
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	V	V	No	Lowland coastal forests, dense mountain forests, semi-arid woodland and trees bordering watercourses, with (Allo)Casuarina trees for foraging.	**Unlikely** No suitable habitat was present.
Callocephalon fimbriatum Gang Gang Cockatoo	E1	E	No	Tall montane forests and woodlands in mature wet sclerophyll forests. Requires hollows in which to breed between October and January.	**Unlikely** No suitable habitat was present.
Lathamus discolor Swift Parrot	E1	CE	Yes	Open Forest to Woodland, also street trees and in parks and gardens, winter flowering eucalypts for feeding. This species nests in Tasmania during the summer months.	**Low** Marginal foraging habitat was present.
Neophema chrysostoma Blue-winged Parrot	V	V	No	Found in western NSW. They favour grasslands and grassy woodlands. They are often found near wetlands both near the coast and in semi-arid zones. Blue-winged Parrots can also be seen in altered environments such as airfields, golf-courses and paddocks.	**Low** Marginal foraging habitat was present.
Polytelis swainsonii Superb Parrot	V	V	No	Found throughout eastern inland NSW. They inhabit Box-Gum, Box-Cypress-pine and Boree woodlands and River Red Gum Forest.	**Low** Marginal foraging habitat was present.
Parvipsitta pusilla Little Lorikeet	V		No	Tall Open Forests, woodlands, orchards, parks and street trees.	**Low** Marginal foraging habitat was present.
Aphelocephala leucopsis Southern Whiteface	V	V	No	Open woodlands and shrublands with understorey of grasses or shrubs, or both.	**Unlikely** No suitable habitat was present.
Hirundapus caudacutus White-throated Needletail	V	V & M	No	Inhabits the airspace above forests, woodlands, farmlands, plains, lakes, coasts and towns.	**Moderate** Due to the non-specific habitat requirements of this species habitat was considered to be present.

SPECIES	STATUS			HABITAT DESCRIPTION AND LOCALLY KNOWN POPULATIONS	LIKELIHOOD OF OCCURRENCE WITHIN THE SITE
	BC Act 2016	EPBC Act 1999	SAII		
Artamus cyanopterus cyanopterus Dusky Woodswallow	V		No	The Dusky Woodswallow is found in open forests and woodlands and may be seen along roadsides and on golf courses.	**Low** Foraging habitat was present.
Melanodryas cucullata cucullata Hooded Robin (south-eastern form)	E1	E	No	Eucalypt woodlands, Acacia scrublands, Banksia dominated coastal scrubs and open forests.	**Low** Foraging habitat was present.
Motacilla flava Yellow Wagtail		M		Wet meadows, marshes, grassy/muddy lake edges, fields, often near livestock.	**Low** Foraging habitat was present.
Climacteris picumnus victoriae Brown Treecreeper	V	V	No	This species is a medium sized insectivorous bird that occupies Eucalypt woodlands, particularly open woodlands lacking a dense understorey, River Red Gums on watercourses and around lakeshores. It is sedentary and nests in tree hollows within permanent territories.	**Unlikely** No suitable habitat was present.
Stagonopleura guttata Diamond Firetail	V	V	No	Inhabits areas with a grassy, shrubby understorey including Eucalypt woodlands, forests, Acacia scrubs and mallee.	**Low** Foraging habitat was present.
Pomatostomus temporalis subsp. *temporalis* Grey-crowned Babbler	V		No	Open forest, woodland, scrubland, farmland and outer suburbs. Prefers woodlands with regenerating trees, tall shrubs, and an intact ground cover of grass and forbs.	**Low** Foraging habitat was present.
Chthonicola sagittata Speckled Warbler	V		No	Speckled Warblers live in a wide range of eucalypt-dominated vegetation that has a grassy understorey, often on rocky ridges or in gullies. It builds a domed nest of grass, bark shreds and moss, lined with fur on the ground.	**Low** Foraging habitat was present.
Anthochaera phrygia Regent Honeyeater	E4A	CE	Yes	Temperate woodlands and open forest, including forest edges, preferring to forage on large-flowered Eucalypts.	**Unlikely** No suitable habitat was present.
Grantiella picta Painted Honeyeater	V	V	No	Nomadic, within a range of generally drier forested areas with mistletoes.	**Unlikely** No suitable habitat was present.
Circus assimilis Spotted Harrier	V		No	Occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges, and rarely in Tasmania. Found in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land.	**Moderate** Foraging habitat was present.
Erythrotriorchis radiatus Red Goshawk	E1	E	Yes	The species is very rare in NSW, extending south to about 30°S, with most records north of this, in the Clarence River Catchment, and a few around the lower Richmond and Tweed Rivers. Formerly, it was at least occasionally reported as far south as Port Stephens. In NSW,	**Unlikely** This species is unlikely to utilise the site.

SPECIES	STATUS			HABITAT DESCRIPTION AND LOCALLY KNOWN POPULATIONS	LIKELIHOOD OF OCCURRENCE WITHIN THE SITE
	BC Act 2016	EPBC Act 1999	SAII		
				preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalyptus forest of coastal rivers.	
Hieraaetus morphnoides Little Eagle	V		No	Is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or acacia woodlands and riparian woodlands of interior NSW are also used.	**Moderate** Foraging habitat was present.
Haliaeetus leucogaster White-bellied Sea-Eagle	V	M	No	Occupies habitat characterised by the presence of large areas of open water and feeds opportunistically on a variety of fish, birds, reptiles, mammals and crustaceans. The nests are built in a variety of sites including tall trees, bushes, mangroves, cliffs, rocky outcrops, caves, crevices, on the ground or even in artificial structures.	**Unlikely** This species is unlikely to utilise the site due to a lack of nearby suitable hunting habitat.
Falco hypoleucos Grey Falcon	V	V	No	Sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. Generally restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.	**Low** Foraging habitat was present.
Falco subniger Black Falcon	V		No	Widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions.	**Moderate** Foraging habitat was present.
FAUNA – MAMMALS					
Dasyurus maculatus ssp. *maculatus* Spotted-tailed Quoll	V	E	No	Inhabits sclerophyll forests, rainforests and coastal woodlands. Nests are made in rock caves and hollow logs or trees, and basking sites are usually found nearby.	**Low** Only marginal habitat was present.
Phascolarctos cinereus Koala	E1	E	No	Coastal woodland and open forest containing suitable food trees.	**Unlikely** No suitable habitat was present.
Petaurus australis Yellow-bellied Glider	V	V	No	Occurs in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south. Is found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria.	**Unlikely** No suitable habitat was present.
Pteropus poliocephalus Grey-headed Flying-Fox	V	V	No	Wet and Dry Sclerophyll Forests, Rainforest, Mangroves and Paperbark swamps and Banksia Woodlands.	**Unlikely** No suitable habitat was present.
Saccolaimus flaviventris Yellow-bellied Sheathtail-bat	V		No	Has been reported from a wide variety of habitats. Roosts in tree hollows, animal burrows, dry clay cracks, under rock slabs and in abandoned Sugar Glider nests.	**Low** Suitable hunting habitat was present.

SPECIES	STATUS			HABITAT DESCRIPTION AND LOCALLY KNOWN POPULATIONS	LIKELIHOOD OF OCCURRENCE WITHIN THE SITE
	BC Act 2016	EPBC Act 1999	SAII		
Nyctophilus corbeni Corben's Long-eared Bat	V	V	No	Inhabits a variety of vegetation types, including mallee, bull oak Allocasuarina leuhmanni and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland. Roosts in tree hollows, crevices, and under loose bark.	**Low** Suitable hunting habitat was present.
Scoteanax rueppellii Greater Broad-nosed Bat	V		No	Tree-lined creeks, woodland/clearing ecotones and rainforest creeks, roosting mainly in tree hollows.	**Low** Suitable hunting habitat was present.
Chalinolobus dwyeri Large Pied Bat	E1	E	Yes	Occupies dry sclerophyll forest and woodland. Roosts in caves, abandoned mud-nests of Fairy Martins and mine tunnels.	**Low** Suitable foraging habitat was present. Roosting habitat was absent.

6.4 FAUNA APPRASIAL RESULTS

6.4.1 DIURNAL SURVEYS

Amphibians

No amphibians were recorded during surveys.

Reptile Survey

One reptile species *Ctenotus robustus* (Striped Skink) was observed on the far south-eastern edge of the proposal.

Avifauna

Species observed within the subject site included:

- *Rhipidura leucophrys* (Willie Wagtail)
- *Dacelo novaeguineae* (Kookaburra)
- *Ocyphaps lophotes* (Crested Pigeon) (Plate 6.16)
- *Eolophus roseicapilla* (Galah)
- *Philemon corniculatus* (Noisy Friarbird)
- *Psephotus haematonotus* (Red-rumped Parrot)
- *Acanthiza chrysorrhoa* (Yellow-rumped Thornbill)
- *Cracticus nigrogularis* (Pied Butcherbird)
- *Cracticus tibicen* (Magpie)
- *Corvus coronoides* (Australian Raven)
- *Sturnus tristis* (Indian Myna)
- *Stizoptera bichenovii* (Double-barred Finch) (Plate 6.17).
- *Cacatua galerita* (Sulphur-crested Cockatoo)
- *Threskiornis spinicollis* (Straw-necked Ibis)

No avifauna species listed as threatened under the BC Act 2016 or EPBC Act 1999 were recorded within the impact area or within proximity during fieldwork. According to BioNet one threatened avifauna species *Circus assimilis* (Spotted Harrier) has previously been recorded within the subject site in 2005.

Mammal Survey

One native mammal species *Macropus giganteus* (Eastern Grey Kangaroo) was observed within the impact area during fieldwork. Scats and footprints consistent with the Eastern Grey Kangaroo were also commonly recorded. Footprints consistent with the introduced *Vulpes vulpes* (European Red Fox) were observed also with scats consistent with *Oryctolagus cuniculus* (European Rabbit).

No mammal species listed as threatened under the BC Act 2016 or EPBC Act 1999 were recorded on site. Both the European Red Fox and European Rabbit are listed as Key Threatening Processes under the BC Act 2016 and have been addressed in Section 8.0 of this report.

Plate 6.16: Crested Pigeon within impact area (22/01/2026).

Plate 6.17: Double-barred Finch within impact area (21/01/2026).

6.5 SURVEY LIMITATIONS

As with all reports of this type the main survey limitation is considered to be the very short period of time in which the fieldwork was carried out. Limitations to the likelihood of detecting certain subject species were also encountered during this survey. Such limitations were generally related to the seasonal occurrence of species, be it as a result of known flowering periods for flora or migratory movements by fauna.

These limitations have been overcome by applying the precautionary principle in all cases where the survey methodology may have given a false negative result. This precautionary principle was achieved by recognising that most threatened species are rare and therefore unlikely to be encountered during a survey even if they may utilise the site at other times. These species have been assessed on the basis of the presence of their habitat and the likely significance of that habitat to a viable local population.

7.0 IMPACT ASSESSMENT

7.1 AVOIDANCE AND MINIMISATION OF IMPACTS

Impact on vegetation has been avoided by locating the proposal entirely within cropping areas outside areas of native vegetation. Mature planted native trees occurring along the existing access road will not be impacted as no road widening is required for the proposal.

7.2 DIRECT IMPACT

The proposal will result in the following direct and potential impacts/losses:

- Removal of a combined 20.56ha area which has been historically cleared and is currently used for cropping;
- Removal of potential habitat for addressed threatened species that utilise open disturbed habitats.

7.3 INDIRECT IMPACTS

The proposal may result in the following indirect and potential impacts:

- Erosion and sedimentation;
- Increased spread of priority and other weed species;
- Edge effects impacting areas of native vegetation.
- Increase in artificial light
- Increase in native fauna vehicle strike
- Dust Generation
- Increase in noise

7.4 MITIGATION MEASURES

Mitigation measures have been specified to minimise the impact of the vegetation clearance to protect biodiversity values. The measures will include:

Trees and other Native Vegetation

Where possible, works should minimise any impact to native vegetation outside the scope of the proposal, including avoiding the critical root zone of remnant trees when trenching cables and constructing roadways. Where unavoidable, works should minimise impacts to trees as follows:

- The clearance boundary is to be clearly marked with flagging tape;
- all material stockpiles, vehicle parking and machinery storage will be located within cleared areas, and not in areas of native vegetation.

Transport of weeds and pathogens from the impact area to adjacent vegetation

The following measures should be implemented to prevent exotic plant material from entering/exiting the study area:

- no imported/exported material to be permitted unless it has been inspected and confirmed to be free of dirt and mud which may contain weed seeds and vegetative material such as bulbs, root fragment, tubers or rhizomes; and
- vehicles and machinery to be clean of soils, vegetation and seeds that have been brushed off or washed down prior
- It is recommended that all Priority Weeds within the impact area be controlled as part of routine property maintenance. Particular attention should be given to the weeds listed in Table 6.1 of this report.
- All machinery and equipment are to be inspected for weeds and weed propagules prior to going on site to prevent the introduction of new weed species to the area.

Common weeds found within the impact area and control methods is shown in Appendix G.

Reduce impacts of artificial lighting

Artificial light is known to adversely affect many species and can change behaviour and/or physiology, reducing survivorship or reproductive output (DoEE, 2020). It can also have the indirect effect of changing the availability of habitat or food resources. It can also attract predators and invasive pests, both of which may pose a threat to listed species. Each outdoor light fixture will be designed to be aimed downwards to reduce light spill into areas of native vegetation. Lights will only be used when necessary, during times of low light and/or heavy fog.

Vehicle strike

Vehicles on all internal roads must comply to the reduced speed limit of 40km/h. Signage is to be erected at the entrance to the development to inform drivers of the reduced speed limit and to look out for wildlife. All vehicles are to be confined to internal road network to protect native flora and fauna. All personal should be warned of this via inductions.

Noise

Noise from the movement of light and heavy vehicles, use of plant and equipment and fans and ventilation stacks may impact acoustic amenity in the locality. It is expected that the noise levels generated by the Development will unlikely cause any impact or disturbance to local fauna species.

Dust Generation

Dust can be generated during construction of the poultry sheds, associated infrastructure and upgrade of internal roads. Dust has the potential to cover the nearby native vegetation potentially affecting plant growth. If dust levels become too high as a result of construction a water truck may be required to be used to reduce levels. Dust emissions from the upgraded internal access roads are not likely to be significant due to a lower silt loading on the constructed road surface. It is expected that dust levels on the Development Site will be below any levels that would affect flora and fauna species. During construction, the applicant must ensure that:

- exposed surfaces and stockpiles are suppressed by regular watering or equivalent;
- all trucks entering and exiting the site with loads have their loads covered;
- trucks associated with the development do not track dirt onto the public road network;
- public roads used by these trucks are kept clean; and
- any land stabilisation works are carried out progressively on site to minimise exposed surfaces.

8.0 CONSIDERATIONS UNDER SECTION 7.3 OF THE BC ACT 2016

Considerations of the effects of the vegetation removal undertaken for the proposed development under *Section 7.3* of the BC Act (2016) for the concerned threatened species is given below. The species dealt with are those identified during the fieldwork and those identified as having potential habitat available on site in Table 4.3.

For the purposes of the Section 7.3 of the BC Act (2016), the following factors have been taken into account in deciding whether there is likely to be a significant effect on this threatened species, populations or ecological communities, or their habitats:

a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Threatened Flora

No threatened flora species were recorded within the subject land during fieldwork. Due to the high disturbance no suitable habitat was found to be present for any of the 11 addressed threatened flora species.

The proposal is considered unlikely to significantly affect the life cycle of any of these threatened flora species or place any viable local populations of at risk of extinction.

Threatened Fauna

No threatened species were recorded in the impact area or close proximity during surveys. Of the 38 addressed threatened fauna species the impact area was considered to contain marginal habitat for 22 species:

- *Lathamus discolor* Swift Parrot
- *Neophema chrysostoma* Blue-winged Parrot
- *Polytelis swainsonii* Superb Parrot
- *Glossopsitta pusilla* Little Lorikeet
- *Aphelocephala leucopsis* Southern Whiteface
- *Circus assimilis* Spotted Harrier
- *Artamus cyanopterus cyanopterus* Dusky Woodswallow
- *Hirundapus caudacutus* White-throated Needletail
- *Aphelocephala leucopsis* Southern Whiteface
- *Melanodryas cucullata cucullata* Hooded Robin (south-eastern form)
- *Stagonopleura guttata* Diamond Firetail
- *Pomatostomus temporalis subsp. temporalis* Grey-crowned Babbler
- *Chthonicola sagittata* Speckled Warbler
- *Circus assimilis* Spotted Harrier
- *Hieraaetus morphnoides* Little Eagle
- *Falco hypoleucos* Grey Falcon
- *Falco subniger* Black Falcon
- *Dasyurus maculatus ssp. maculatus* Spotted-tailed Quoll
- *Saccolaimus flaviventris* Yellow-bellied Sheathtail-bat
- *Nyctophilus corbeni* Corben's Long-eared Bat
- *Scoteanax rueppellii* Greater Broad-nosed Bat

- *Chalinolobus dwyeri* Large Pied Bat

Due to the high disturbance, the proposed impact area would only provide suitable habitat for these species that utilise open disturbed habitats such as hunting birds of prey, foraging microchiropteran bats and some woodland birds. Only limited habitat would be available for the remaining species. The proposal will result in an incremental reduction/modification of largely marginal habitat for the above species; therefore, it is unlikely to have a significant impact on these threatened fauna species such that a local extinction would occur.

b) *In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:*
   (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
   (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

No areas within the impact area were identified as containing native vegetation. One Plant Community Type (PCT); PCT 437 Yellow Box grassy woodland on lower hillslopes and valley flats in the southern NSW Brigalow Belt South Bioregion was present to the south, east and north of the impact area. PCT 437 was found to be consistent with the listed NSW BC Act 2016 Critically Endangered Ecological Community (CEEC) White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions.

As no areas of White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland will be directly impacted and taking into consideration the mitigation measures for areas in proximity the proposal is unlikely to have a significant impact on this CEEC such that the local occurrence is likely to be placed at risk of extinction.

c) *In relation to the habitat of a threatened species or ecological community:*
   (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

The proposal will result in the following direct and potential impacts/losses:

- Removal of a combined 20.56ha area which has been historically cleared and is currently used for cropping;
- Removal of potential habitat for addressed threatened species that utilise open disturbed habitats.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

No areas of habitat are likely to become significantly fragmented or isolated from others areas of habitat as a result of the proposal.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

No area of habitat important to the long-term survival of addressed species or and ecological community will be significantly impacted.

d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

No areas of outstanding biodiversity value are within the study area.

e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The 'Key Threatening Processes' currently listed under Schedule 4 of the BC Act 2016 that are relevant to the proposal that have been listed in Table 7.1.

Table 7.1: Key Threatening Processes.

Key Threatening Process	Applicability in regards to the subject site
Clearing of Native Vegetation.	The proposal will not result in the removal of native vegetation.
Loss of Hollow-bearing Trees	No trees are proposed to be removed.
Bushrock Removal	No bushrock was present.
Invasion of native plant communities by exotic perennial grasses.	Some exotic grasses such as Paspalum dilatatum (Paspalum) were present.
Predation by the *Felis catus* (Feral Cat)	The Feral Cat was not recorded on site at the time of the survey however this species would be considered to have an impact on native fauna in the local area. The proposal is not likely to result in an increase in feral numbers of this introduced species.
Predation by the *Vulpes vulpes* (Red Fox)	The Red Fox was not recorded on site at the time of the survey however this species would be considered to have an impact on native fauna in the local area. The proposal is not likely to result in an increase in numbers of this introduced species.
Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	No evidence of the disease was observed on psittacine species. No endangered Psittacine species were seen on site. The proposal is unlikely to increase infection by this disease.
Aggressive exclusion of birds by noisy miners (*Manorina melanocephala*)	Noisy miners were recorded within the site during fieldwork. The proposal is unlikely to increase the impacts associated with this species.
Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	No evidence of the fungi was observed during fieldwork.

Key Threatening Process	Applicability in regards to the subject site
Competition and grazing by the feral European rabbit, *Oryctolagus cuniculus*	
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	Fire has likely had little impact within the impact area.

9.0 CONSIDERATIONS UNDER STATE ENVIRONMENTAL PLANNING POLICY (BIODIVERSITY AND CONSERVATION) 2021

9.1 CHAPTER 3 KOALA HABITAT PROTECTION 2020

The principal aim of this Chapter aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population.

Chapter 3 applies to land that the Chapter 4 does not apply to as defined in Schedule 2 of SEPP (Biodiversity Conservation) 2021. This includes land zoned as RU1 in the Liverpool Plains Shire Council LGA. This Chapter applies to areas of more than one hectare or an area, which has together with any adjoining land in the same ownership an area of more than 1 hectare, whether or not the development application applies to the whole, or only part of the land. The subject land constitutes an area over 1ha therefore Chapter 3. In addressing this Chapter there are two questions to be considered.

9.1.1 FIRST CONSIDERATION - IS THE LAND 'POTENTIAL KOALA HABITAT'?

'Potential Koala Habitat' is defined in Chapter 3 as, "...an area of native vegetation where trees of the type listed in Schedule 1 (Koala feed tree species) constitute at least 15% of the total number of trees in the upper or lower strata of the tree component".

One species of 'Koala Feed Tree' *Eucalyptus camaldulensis* (River Red Gum) was planted along the northern side of the existing access road and to the north and east of the proposed managers residences.

9.1.1 SECOND CONSIDERATION – IS THE LAND CORE KOALA HABITAT?

Core Koala Habitat is defined as "… an area of land with a resident population of Koalas, evidenced by attributes such as breeding females (that is females with young) and recent sightings and historical records of a koala population.

No koalas were identified during site surveys. Despite dedicated searches at the base of all surveyed 80 trees no koala scats were found. According to the BioNet Atlas database search (DPE, 2026a) the closest koala record was an individual approximately 7km to the south-east (Warrah Street, Warrah) in 2023. Given that no individual koalas or breeding females (female koala with young) were observed within the study area there is insufficient evidence to suggest that the site supports a resident population. Hence the study area is not considered to constitute Core Koala Habitat.

No trees are required to be removed for the proposal.

10.0 ASSESSMENT OF SERIOUS AND IRREVERSIBLE IMPACTS

Under the BC Act 2016, a determination of whether an impact is serious and irreversible (SAII) must be made in accordance with the principles prescribed in section 6.7 of the BC Regulation.

The "*Guidance to assist a decision maker to determine a serious and irreversible impact*, 2017, sets out those potential SAII species and ecological communities (known as "potential SAII entities").

The principles for determining serious and irreversible impacts in the Biodiversity Conservation Regulation, 2017 are:

- *will cause a further decline of a species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or*
- *will further reduce the population of a species or ecological community that is currently observed, estimated, inferred, or reasonably suspected to have a very small population size, or*
- *are impacts on the habitat of a species or area of ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution, or*
- *are impacts on a species or ecological community is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable.*

10.1 POTENTIAL SAII ENTITIES

In this case all potential SAII entities are derived from Appendix 2 of the Guide, and are within the BioNet search area (DPE, 2026). The approval authority must take those impacts into consideration and determine whether there are any additional and appropriate measures that will minimise those impacts if approval is to be granted. An Impact evaluation is shown in Table 10.1. Entities include:

- *Euphrasia arguta* (Eyebright)
- *Lathamus discolor* (Swift Parrot)
- *Anthochaera phrygia* (Regent Honeyeater)
- *Chalinolobus dwyeri* (Large Pied Bat);

Table 10.1: SAII impact evaluation

Potential SAII Entities	Impact Evaluation	Impact Thresholds	Further consideration required?
White Box Yellow Box Blakely's Red Gum Woodland	Outside impact area		No
Euphrasia arguta Eyebright	No suitable habitat was present.		No
Lathamus discolor Swift Parrot	Transitory habitat was present.	Not within a mapped BAM Important Area (DPIE, 2020)	No
Anthochaera phrygia Regent Honeyeater	Transitory habitat was present.	Not within a mapped BAM Important Area (DPIE, 2020)	No
Chalinolobus dwyeri Large Pied Bat	Suitable hunting habitat was present. Roosting habitat was absent.		No

10.2 ADDITIONAL IMPACT ASSESSMENT PROVISIONS FOR THREATENED SPECIES AT RISK OF AN SAII

No threatened matter consistent with a SAII candidate species identified as likely to occur or to contain significant habitat within the impact area is likely to be significantly impacted by the proposed development.

11.0 CONSIDERATIONS UNDER THE COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

Considerations have been made to the Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act 1999. Assessments have been made to determine whether or not the proposal or activity has, will have, or is likely to have a significant impact on a matter of National Environmental Significance. The matters of National Environmental Significance and the appropriate responses are listed below:

- *World Heritage properties;*

The site is not likely to have a significant impact to any World Heritage Properties.

- *wetlands recognised under the Ramsar convention as having international significance;*

The proposed works is not likely to have a significant impact to any Ramsar Wetlands.

- *listed threatened species and communities;*

No areas within the impact area were identified as containing native vegetation. One Plant Community Type (PCT); PCT 437 Yellow Box grassy woodland on lower hillslopes and valley flats in the southern NSW Brigalow Belt South Bioregion was present to the south, east and north of the impact area. PCT 437 was found to be consistent with the nationally listed (CEEC) White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

The assessment undertaken in Section 13.1 found the proposal is unlikely to significantly impact this CEEC.

Forty-six nationally threatened species were recorded on the DCCEEW database as occurring or having potential habitat available within 10km of the site (note all pelagic species and ocean-going birds which do not complete part of their life cycles on mainland NSW were excluded from the search), these being:

Anthochaera phrygia	Regent Honeyeater
Aphelocephala leucopsis	Southern Whiteface
Botaurus poiciloptilus	Australasian Bittern
Calidris ferruginea	Curlew Sandpiper
Callocephalon fimbriatum	Gang-gang Cockatoo
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo
Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)
Erythrotriorchis radiatus	Red Goshawk
Falco hypoleucos	Grey Falcon
Grantiella picta	Painted Honeyeater
Hirundapus caudacutus	White-throated Needletail
Lathamus discolor	Swift Parrot
Melanodryas cucullata cucullata	Hooded Robin (south-eastern)
Neophema chrysostoma	Blue-winged Parrot
Polytelis swainsonii	Superb Parrot

Rostratula australis	Australian Painted Snipe
Stagonopleura guttata	Diamond Firetail
Heleioporus australiacus	Giant Burrowing Frog
Litoria booroolongensis	Booroolong Frog
Aprasia parapulchella	Pink-tailed Worm-lizard
Delma impar	Striped Legless Lizard
Chalinolobus dwyeri	Large-eared Pied Bat
Dasyurus maculatus maculatus	Spot-tailed Quoll
Notamacropus parma	Parma Wallaby
Nyctophilus corbeni	Corben's Long-eared Bat
Petauroides volans	Greater Glider (southern and central)
Petaurus australis australis	Yellow-bellied Glider (south-eastern)
Petrogale penicillata	Brush-tailed Rock-wallaby
Phascolarctos cinereus	Koala
Pseudomys novaehollandiae	New Holland Mouse
Pteropus poliocephalus	Grey-headed Flying-fox
Prasophyllum sp. Wybong (C.Phelps ORG 5269)	a leek-orchid
Euphrasia arguta	
Cynanchum elegans	White-flowered Wax Plant
Pterostylis gibbosa	Illawarra Greenhood
Vincetoxicum forsteri	
Eucalyptus glaucina	Slaty Red Gum
Prostanthera cineolifera	
Picris evae	Hawkweed
Ozothamnus tesselatus	
Dichanthium setosum	bluegrass
Swainsona murrayana	Slender Darling-pea
Lepidium aschersonii	Spiny Peppercress
Pomaderris brunnea	Rufous Pomaderris
Androcalva procumbens	
Thesium australe	Austral Toadflax

No nationally threatened species were recorded on site during surveys. Habitat of varying quality was considered to be available for those mobile threatened species such as woodland birds, megachiropteran bats and microchiropteran bats. The action will result in an incremental loss/modification of habitat within the locality for these species. The removal of trees as a result of the proposal will also result in an incremental reduction of seasonal foraging habitat for the majority of birds listed above, as well as the Grey-headed Flying Fox. The proposal will result in an incremental loss of foraging and roosting/nesting habitat for these species in the local area; however, it is not likely to have a significant impact on any of these species.

- *migratory species protected under international agreements;*

Twelve nationally listed migratory species were recorded on the DCCEEW on-line database as occurring or having potential habitat available within 10km of the subject land, these being:

Migratory Terrestrial Species:

- *Hirundapus caudacutus* (White-throated Needletail)
- *Monarcha melanopsis* (Black-faced Monarch)
- *Motacilla flava* (Yellow Wagtail)
- *Myiagra cyanoleuca* (Satin Flycatcher)
- *Rhipidura rufifrons* (Rufous Fantail)

Migratory Wetland Species:

- *Actitis hypoleucos* (Common Sandpiper)
- *Calidris acuminata* (Sharp-tailed Sandpiper)
- *Calidris ferruginea* (Curlew Sandpiper)
- *Calidris melanotos* (Pectoral Sandpiper)
- *Gallinago hardwickii* (Latham's Snipe)
- *Tringa nebularia* (Common Greenshank)

Migratory Marine Birds

- *Apus pacificus* (Fork-tailed Swift)

Considering the relatively small impact on habitat in the locality it is unlikely that these species or any of the listed migratory species would be significantly affected by the proposal.

- *nuclear activities;*

The proposal does not involve any type of nuclear activity.

- *the Commonwealth marine environment;*

11.1 WHITE BOX – YELLOW BOX – BLAKELY'S RED GUM GRASSY WOODLAND AND DERIVED NATIVE GRASSLAND

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:

- ***reduce the extent of an ecological community***

No areas of the nationally listed (CEEC) White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland occur within the impact area and will not be directly impacted.

- ***fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines***

No areas will become fragment as a result of the proposal.

- ***adversely affect habitat critical to the survival of an ecological community***

The project is unlikely to adversely affect habitat considered to be critical to the survival of the community.

- ***modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns***

The project is unlikely to affect any abiotic processes necessary for the community's survival.

- ***cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting the following criteria:***

The proposal is not likely to result in substantial change in the species composition of this community locally.

- **cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:**
  -assisting invasive species, that are harmful to the listed ecological community, to become established, or
  – causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or

Taking the mitigations measures into consideration the proposal is unlikely to assist any invasive species, nor cause any increased mobilisation of fertilisers which would kill or inhibit the growth of species in the ecological community.

- ***interfere with the recovery of an ecological community.***

The proposal is unlikely to interfere with any current recovery programs in the area.

Conclusion

The project is unlikely to significantly impact this community

12.0CONCLUSION

In conclusion, the proposed poultry farms and associated infrastructure at 755 Warrah Ridge Road, Warrah Ridge NSW is unlikely to have a significant impact on any addressed threatened species, endangered populations or threatened ecological communities considered within this report.

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APPENDIX A

TOTAL FLORA LIST

Introduced species are indicated by an asterisk ("*").

The following standard abbreviations are used to indicate subspecific taxa:

subsp. subspecies
var.- variety
× - hybrid between the two indicated species

Threatened Species - NSW Biodiversity Conservation Act 2016 (BC Act)

V Vulnerable
E1 Endangered
E2 Endangered Population
E4A Critically Endangered Population

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

V Vulnerable
E Endangered
CE Critically Endangered

Serious and Irreversible Impact SAII

Regional Significance (Hunter Rare Plants Database – Version 1 2003)

L endemic to Hunter Region
DA disjunct in the Hunter Region, rare or localized (aggregated)
DB disjunct in the Hunter Region, widespread and uncommon (broad)
R rare but extends beyond the Hunter Region
U everywhere uncommon
N at northern distributional limit in the Hunter
E at eastern distributional limit in the Hunter
S at southern distributional limited in the Hunter
W at western distributional limited in the Hunter
T may be threatened in the Hunter Region
S Probably secure in the Hunter Region

Weeds

Priorities under the Biosecurity Act 2015

G General Biosecurity Duty - any person dealing with plant matter must take measures to prevent, minimise or eliminate the biosecurity risk (as far as is reasonably practicable).
P Prohibition on dealings - Must not be imported into the State or sold.
R Regional Recommended Measure - Land managers mitigate the risk of the plant being introduced to their land. Land managers reduce impacts from the plant on priority assets. Land managers prevent spread from their land where feasible. The plant or parts of the plant are not traded, carried, grown or released into the environment.

NSW BC Act 2016

T Listed as a Threatening Process under the NSW BC Act 2016.

National

N Weed of National Significance (WoNS)

Table A1: Flora species recorded within the subject site

SCIENTIFIC NAME	COMMON NAME	BC ACT	EPBC ACT	SAII	REGIONALLY SIGNIFICANT	BIOSECURITY ACT 2015	FLOWERING PERIOD
CONIFEROPSIDA (Conifers)							
Cupressaceae							
Calitris glaucophylla	White Cypress Pine						
MAGNOLIOPSIDA: Magnoliidae							
LILOPSIDA: (Monocotyledons)							
Commelinaceae							
Commelina cyanea	Scurvy Weed						
Poaceae							
Austrostipa verticillata	Slender Bamboo Grass						
**Avena fatua*	Wild Oats						
**Bromus catharticus*	Prairie Grass						
**Cenchrus spinifex*	Spiny Burrgrass						
**Chloris gayana*	Rhodes Grass						
Cynodon dactylon	Common Couch						
**Echinochloa crus-galli*	Barnyard Grass						
**Ehrhartia erecta*	Panic Veldt Grass						
**Elusine indica*	Crowsfoot Grass						
**Elusine tristachya*	Goose Grass						
Eriochloa pseudoacrotricha	Early Spring Grass						
**Lolium perenne*	Perennial Ryegrass						
Microlaena stipoides var. *stipoides*	Weeping Meadow Grass						
Paspalidium distans	Spreading Panic Grass						
**Paspalum dilatatum*	Paspalum						
**Sorghum bicolor*	Sorghum						
**Urochloa panicoides*	Liverseed Grass						
MAGNOLIIDAE (Dicotyledons)							
Amaranthaceae							
**Alternanthera pungens*	Khaki Weed						
**Gomphrena celosioides*	Gomphrena Weed						
Apiaceae							

SCIENTIFIC NAME	COMMON NAME	BC ACT	EPBC ACT	SAII	REGIONALLY SIGNIFICANT	BIOSECURITY ACT 2015	FLOWERING PERIOD
**Ammi majus*	Bishop's-weed, Bullwort						
Asteraceae							
**Bidens subalternans*	Greater Beggar's Ticks						
Calotis lappulacea	Yellow Burr-daisy						Sept
**Carthamus lanatus*	Saffron Thistle						
**Centaurea solstitialis*	St Barnaby's Thistle						
**Chondrilla juncea*	Skeleton Weed						
**Cirsium vulgare*	Spear Thistle						Sept
**Conyza sp.*	Flax-leaved Fleabane						
**Lactuca saligna*	Willow-leaved Lettuce						
**Lactuca serriola*	Prickly Lettuce						
**Sonchus asper*	Prickly Sowthistle						
**Sonchus oleraceus*	Common Sow Thistle						
**Taraxacum officinale*	Dandelion						
**Xanthium spinosum*	Bathurst Burr						
Boraginaceae							
**Echium plantagineum*	Paterson's Curse						
Brassicaceae							
**Lepidium africanum*	Peppercress						
**Rapistrum rugosum*	Turnip Weed, Giant Mustard						
Cactaceae							
**Opuntia stricta*	Prickly Pear						
Campanulaceae							
Wahlenbergia communis	Native Bluebell,						
Caryophyllaceae							
**Paronychia brasiliana*	Brazilian Whitlow						
Chenopodiaceae							
**Chenopodium alba*	Fat Hen						
Einadia hastata	Berry Saltbush						
Einadia nutans	Nodding Saltbush						
Einadia trigonos	Fishweed						

SCIENTIFIC NAME	COMMON NAME	BC ACT	EPBC ACT	SAII	REGIONALLY SIGNIFICANT	BIOSECURITY ACT 2015	FLOWERING PERIOD
Cucurbitaceae							
**Citrullus lanatus*	Bitter Melon						
Fabaceae Subfamily (Faboideae)							
**Medicargo polymorpha*	Burr Medic						
**Medicago sativa*	Lucerne, Alfalfa						
**Trifolium repens*	White Clover						Sept, Oct
Fabaceae (Subfamily Mimosoideae)							
Acacia salicina	Cooba				E		Mar,
Lamiaceae							
**Marrubium vulgare*	Horehound						
Loranthaceae							
Amyema pendula	Drooping Mistletoe						
Malvaceae							
Brachychiton populneus subsp. *populneus*	Kurrajong						
**Malva parviflora*	Small-flowered Mallow						
**Modiola carliniana*	Red-flowered Mallow						Sept
**Sida rhombifolia*	Paddys Lucerne						
Myrtaceae							
Angophora floribunda	Rough-barked Apple						Nov, Dec
Eucalyptus blakelyi	Blakely's Red Gum						
Eucalyptus camaldulensis	River Red Gum	E-pop H					
Eucalyptus melliodora	Yellow Box						
Eucalyptus moluccana	Grey Box						Mar
Nyctaginaceae							
Boerhavia dominii	Tarvine						
Oleaceae							
**Fraxinus angustifolia*	Claret Ash						
Oxalidaceae							

SCIENTIFIC NAME	COMMON NAME	BC ACT	EPBC ACT	SAII	REGIONALLY SIGNIFICANT	BIOSECURITY ACT 2015	FLOWERING PERIOD
**Oxalis articulata*	Wood-sorrel						
Plantaginaceae							
**Plantago lanceolata*	Plantain						
Polygonaceae							
**Acetosella vulgaris*	Sheep Sorrel						
**Polygonum aviculare*	Wireweed						
**Rumex crispus*	Curled Dock						
Portulacaceae							
Portulaca oleracea	Purslane, Pigweed						
Scrophulariaceae							
**Verbascum virgatum*	Twiggy Mullein						
Solanaceae							
**Datura stramonium*	Common Thornapple						
**Solanum nigrum*	Blackberry Nightshade						
Verbenaceae							
**Verbena bonariensis*	Purple Top						
Verbena gaudichaudii							
Zygophyllaceae							
Tribulus sp.	Caltrop						

APPENDIX B

SURVEYED TREE DATA

Significant Tree Data Key for Table B1.

- ***DSH** – Diameter at Standard Height. Tree trunk diameter measured at breast height (1.4 metres above ground level).
- ***Tree Height** –(m)
- **Coordinates - GDA – 2020, MGA 56**
- **Habitat/Hollows** –

  Class 1 – very large sized hollow openings (i.e., >20cm) suitable for species such as Owls

  Class 2 – large sized hollow openings (i.e., 15-20cm) suitable for species such as Owls and Possums

  Class 3 – medium sized hollow-openings (i.e., 5-15cm) suitable for species such as Gliders and Possums

  Class 4 – small sized hollow openings (i.e., <5cm) suitable for species such as microchiropteran bats.

  Spout - Hollow opening towards sky offering little protection from the weather

  Arboreal Termite Nest – provides potential nesting opportunities for hollow-dependent birds, such as kingfishers and kookaburras

Table B1: Details of trees within the subject areas.

Tree No.	Species	Easting GDA2020	Northing GDA2020	DSH (m)	Height (m)	Habitat				Comments	Removal Required?
						Class 1	Class 2	Class 3	Class 4		
T1	*Eucalyptus camaldulensis* River Red Gum	270037	6496195	0.66 0.40 0.23	17						No
T2	*Eucalyptus camaldulensis*	270042	6496199	0.54 0.47 0.60	17						No
T3	*Eucalyptus camaldulensis*	270052	6496199	0.69	17						No
T4	*Eucalyptus camaldulensis*	270057	6496204	0.74 0.44	18						No
T5	*Eucalyptus camaldulensis*	270074	6496209	0.98	17						No
T6	*Eucalyptus camaldulensis*	270082	6496216	0.21 0.22	6						No
T7	*Eucalyptus camaldulensis*	270091	6496221	0.83	18						No
T8	*Eucalyptus camaldulensis*	270105	6496229	0.70 0.69	17						No
T9	*Eucalyptus camaldulensis*	270110	6496233	0.80	18					Scar at base of the tree	No
T10	*Eucalyptus camaldulensis*	270121	6496230	1.04	18						No
T11	*Eucalyptus camaldulensis*	270123	6496222	0.85	17						No
T12	*Eucalyptus camaldulensis*	270127	6496213	0.60	16						No
T13	*Eucalyptus camaldulensis*	270128	6496205	0.68	17						No
T14	*Eucalyptus camaldulensis*	270130	6496198	0.77	17						No
T15	*Eucalyptus camaldulensis*	270134	6496188	0.82	17						No
T16	*Eucalyptus melliodora* Yellow Box	270859	6496250	0.25 0.25 0.25 0.25	10						No
T17	*Eucalyptus melliodora*	270864	6496247	0.35	9						No
T18	*Eucalyptus blakelyi* Blakely's Red Gum	270869	6496252	0.36 0.28	13						No
T19	*Eucalyptus melliodora*	270857	6496254	0.48	14						No
T20	*Eucalyptus melliodora*	270863	6496269	0.25	8						No
T21	*Eucalyptus melliodora*	270851	6496280	0.42 0.25 0.20	10						No
T22	*Eucalyptus melliodora*	270853	6496286	0.27 0.28	8						No
T23	*Eucalyptus melliodora*	270870	6496214	0.45 0.50 0.44	15						No
T24	*Callitris glaucophylla* White Cypress	270844	6495989	0.62	14						No

Tree No.	Species	Easting GDA2020	Northing GDA2020	DSH (m)	Height (m)	Habitat				Comments	Removal Required?
						Class 1	Class 2	Class 3	Class 4		
T25	*Callitris glaucophylla*	270848	6495990	0.74	14						No
T26	*Callitris glaucophylla*	270859	6495989	0.48	12						No
T27	*Callitris glaucophylla*	270849	6495972	0.63	14						No
T28	*Callitris glaucophylla*	270854	6495968	0.49	15						No
T29	*Callitris glaucophylla*	270860	6495970	0.62	15						No
T30	*Angophora floribunda* Rough-barked Apple	270367	6495941	0.23 0.19 0.57	15						No
T31	**Fraxinus* sp. Ash	270050	6496132	0.3	8						No
T32	**Fraxinus* sp.	270057	6496136	0.35 0.34	8						No
T33	**Fraxinus* sp.	270068	6496139	0.4 0.2	7						No
T34	**Fraxinus* sp.	370077	6496144	0.3	8						No
T35	**Fraxinus* sp.	270084	6496150	0.4 0.3 0.32	8						No
T36	**Fraxinus* sp.	270095	6496155	0.45	8						No
T37	**Fraxinus* sp.	270105	6496161	0.25 0.2	7						
T38	*Brachychiton populneus* Kurrajong	270109	6496161	0.2 0.15	7						
T39	**Fraxinus* sp.	270112	6496167	0.35 0.34 0.2	9						
T40	**Fraxinus* sp.	270121	6496171	0.45	9						
T41	**Fraxinus* sp.	270132	6496176	0.14 0.2	5						
T42	*Eucalyptus moluccana* Grey Box	270154	6496200	0.56	16						
T43	*Eucalyptus camaldulensis*	270165	6496205	0.75	17						
T44	*Eucalyptus melliodora*	270178	6496211	0.46	15						
T45	*Eucalyptus camaldulensis*	270188	6496218	0.90	18						
T46	*Eucalyptus moluccana*	270195	6496222	0.49	18						
T47	*Eucalyptus camaldulensis*	270206	6496229	0.81	20						
T48	*Eucalyptus moluccana*	270215	6496234	0.74	16						
T49	*Eucalyptus melliodora*	270257	6496257	0.45	16						
T50	*Eucalyptus camaldulensis*	270266	6496264	0.83	20						
T51	*Eucalyptus melliodora*	270295	6496281	0.45	17						
T52	*Eucalyptus melliodora*	270298	6496280	0.3	13						
T53	*Eucalyptus camaldulensis*	270306	6496285	0.42 0.34	17						

Tree No.	Species	Easting GDA2020	Northing GDA2020	DSH (m)	Height (m)	Habitat				Comments	Removal Required?
						Class 1	Class 2	Class 3	Class 4		
T54	*Eucalyptus moluccana*	270315	6496292	0.61	12						
T55	*Eucalyptus camaldulensis*	270326	6496297	0.72	18						
T56	*Eucalyptus moluccana*	270335	6496303	0.45 0.55	16						
T57	*Eucalyptus camaldulensis*	270345	6496309	0.86	18						
T58	*Eucalyptus camaldulensis*	270364	6496321	0.95	18						
T59	*Eucalyptus camaldulensis*	270441	6496362	1.05	18						
T60		270452	6496368	0.13	4						
T61	*Eucalyptus camaldulensis*	270460	6496374	0.91	18						
T62	Dead Tree	270472	6496379	0.41	15						
T63	*Eucalyptus moluccana*	270491	6496390	0.71	16						
T64	*Eucalyptus camaldulensis*	270501	6496396	0.65	12						
T65	*Eucalyptus melliodora*	270512	6496402	0.61	17						
T66	*Eucalyptus camaldulensis*	270521	6496406	0.75	16						
T67	*Eucalyptus camaldulensis*	270570	6496417	0.78	16					*Acacia salicina* at base of tree	
T68	*Eucalyptus melliodora*	270550	6496424	0.49	17						
T69	*Eucalyptus camaldulensis*	270560	6496429	0.8	17					*Acacia salicina* at base of tree	
T70	*Eucalyptus camaldulensis*	270582	6496442	0.78 0.4	17						
T71	*Eucalyptus moluccana*	270591	6496447		7					Small multi-stemmed	
T72	*Eucalyptus camaldulensis*	270600	6496452	0.25 0.75	18						
T73	*Eucalyptus camaldulensis*	270622	6496465	0.75	18						
T74	*Eucalyptus melliodora*	270631	6496471	0.56	17						
T75	*Eucalyptus camaldulensis*	270640	6496476	1.01	17						
T76	*Eucalyptus camaldulensis*	270660	6496486	0.76	17						
T77	*Eucalyptus camaldulensis*	270681	6496497	0.5 0.59	11						
T78	*Eucalyptus camaldulensis*	270699	6496509	0.92	14						
T79	*Eucalyptus melliodora*	270710	6496515	0.4	12					*Acacia salicina* at base of tree	
T80	*Eucalyptus camaldulensis*	270719	6496520	0.59	17					*Acacia salicina* at base of tree	

Job Ref	13003
A4 Scale	1:4000

Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarentee is given that the information protrayed is free from error or omission. In addition the spatial accuracy of the map is wholly dependant on source data. Please verify the accuracy of all information prior to use. Development footprint areas should be used for indicative areas only.

0 100 200 m

Map Projection GDA2020 MGA Zone 56

Data Sources: LPI (2026),

Figure B1

Trees within proximity to proposal

755 Warrah Ridge Road
WARRAH RIDGE, NSW

XX Month Year

WILDTHING Environmental Consultants
(a Division of Tattersall Lander Pty Ltd)
ABN 41 003 509 215

APPENDIX C

FIELD BAM PLOT DATASHEETS

Wildthing Environmental Consultants - Office # (02) 49513311 ^ Solar Farm area

BAM Site – Field Survey Form | Plot Identifier: 1A

Midline start	Midline end	Plot Size	Date	Plot Waypoint ID				Recorders
E-270304 N-6495968	E-270256 N-6495951	20x50	21/1/26	Start -		End -		DARYL
Photo# #9001	Photo# #9002	IBRA region	Brigalow Belt South					
Bearing 245°	Bearing 58°	Vegetation Class	—					
		Vegetation Zone	—					
PCT # —		PCT Name	—					
Consistent BC ACT TEC?								

BAM Attribute (400 m² plot)		Sum values
Count of Native Richness	Trees	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
Sum of Cover of native vascular plants by growth form group	Trees	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
High Threat Weed cover		

BAM Attribute (1000 m² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	0	0
50 – 79 cm	0	
30 – 49 cm	0	
20 – 29 cm	0	
10 – 19 cm	0	
5 – 9 cm	0	
Regeneration < 5 cm	0	
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0 Tally space	

Large Tree Sizes

Dry Sclerophyll Forests - ≥50, Forested Wetlands - ≥50, Freshwater Wetlands - NA, Grasslands - NA, Grassy Woodlands - ≥50, Heathlands - ≥30, Rainforests - ≥50, Saline Wetlands - NA, Semi-arid Woodland (grassy sub-formation) ≥30, Semi-arid woodlands (shrubby sub-formation) ≥30, Wet sclerophyll forests (grassy sub-formation) ≥79, Wetland sclerophyll forests (shrubby sub-formation) ≥79

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	5	5	5	5	5	15	5	20	25	30	a	b	c	d	e	a	b	c	d	e
Average of the 5 subplots																				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element		Landform Pattern		Microrelief	
Lithology		Soil Surface Texture		Soil Colour		Soil Depth	
Slope		Aspect		Site Drainage		Distance to nearest water and type	

Additional Plot Comments

Cropping area

Wildthing Environmental Consultants - Office # (02) 49513311

400 m^2 plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 21/1/2026		1A	DARYL

GF	Species	Cover	Abund	voucher
	1 * Urochloa panicoides	15	400	
	2 * Digitaria sanguinalis	10	300	
	3 * Alternanthera pungens	7	30	
	4 * Chondrilla juncea	4	160	
	5 * Citrullus lanatus	5	30	
	6 * Sida rhombifolia	0.2	5	
	7 * Cenchrus spinifex	0.1	2	
	8 * Tribulus sp	0.3	20	
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Wildthing Environmental Consultants - Office # (02) 49513311 Manager's Residences

BAM Site – Field Survey Form

Plot Identifier: 1B

Midline start	Midline end	Plot Size	Date	Plot Waypoint ID				Recorders
		20×50	22/1/2026	Start -		End -		DARYL
E-270048 N-6496163	E-270091 N-6496188	IBRA region	Brigalow Belt South					
Photo# # 9086	Photo# # 9087	Vegetation Class						
Bearing 57°	Bearing 239°	Vegetation Zone						
PCT #		PCT Name						
Consistent BC ACT TEC?								

BAM Attribute (400 m² plot)		Sum values
Count of Native Richness	Trees	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
Sum of Cover of native vascular plants by growth form group	Trees	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
High Threat Weed cover		

BAM Attribute (1000 m² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	0	0
50 – 79 cm	0	
30 – 49 cm	0	
20 – 29 cm	0	
10 – 19 cm	0	
5 – 9 cm	0	
Regeneration < 5 cm	0	
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0	Tally space

Large Tree Sizes

Dry Sclerophyll Forests - ≥50, Forested Wetlands - ≥50, Freshwater Wetlands - NA, Grasslands - NA, Grassy Woodlands - ≥50, Heathlands - ≥30, Rainforests - ≥50, Saline Wetlands - NA, Semi-arid Woodland (grassy sub-formation) ≥30, Semi-arid woodlands (shrubby sub-formation) ≥30, Wet sclerophyll forests (grassy sub-formation) ≥79, Wetland sclerophyll forests (shrubby sub-formation) ≥79

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	5	5	5	5	5	a	b	c	d	e	a	b	c	d	e	a	b	c	d	e
Average of the 5 subplots																				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element		Landform Pattern		Microrelief	
Lithology		Soil Surface Texture		Soil Colour		Soil Depth	
Slope		Aspect		Site Drainage		Distance to nearest water and type	

Additional Plot Comments

Creeping Area

Wildthing Environmental Consultants - Office # (02) 49513311 Managers Residences

400 m² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 22/1/2020		1B	DARYL

GF	Species	Cover	Abund	voucher
	1 - Sorghum bicolor ssp arundinaceum	7	100	
	2 - Digitaria sanguinalis	25	300	
	3 - Sida rhombifolia	2	20	
	4 - Chondrilla juncea	0.2	10	
	5 Conyza sp.	0.2	10	
	6 x Bromus catharticus	0.3	50	
	7 Cynodon dactylon	2	200	
	8 - Lactuca sativa	0.2	10	
	9 - Alternanthera pungens	0.1	2	
	10 - Tribulus sp	0.1	2	
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Entrance to farm

Wildthing Environmental Consultants - Office # (02) 49513311

BAM Site – Field Survey Form | Plot Identifier: 1C

Midline start	Midline end	Plot Size	Date	Plot Waypoint ID				Recorders
E- 270 575 N- 6496413	E- 270 530 N- 6496388	50x20	22/1/2026	Start -		End -		DARYL
Photo# #9156	Photo# #9157	IBRA region	Brigalow Belt South					
Bearing 234°	Bearing ~~46°~~	Vegetation Class						
		Vegetation Zone						
PCT #		PCT Name						
Consistent BC ACT TEC?								

BAM Attribute (400 m² plot)		Sum values
Count of Native Richness	Trees	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
Sum of Cover of native vascular plants by growth form group	Trees	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
High Threat Weed cover		

BAM Attribute (1000 m² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	0	0
50 – 79 cm	0	
30 – 49 cm	0	
20 – 29 cm	0	
10 – 19 cm	0	
5 – 9 cm	0	
Regeneration < 5 cm	0	
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0	Tally space

Large Tree Sizes

Dry Sclerophyll Forests - ≥50, Forested Wetlands - ≥50, Freshwater Wetlands - NA, Grasslands - NA, Grassy Woodlands - ≥50, Heathlands - ≥30, Rainforests - ≥50, Saline Wetlands - NA, Semi-arid Woodland (grassy sub-formation) ≥30, Semi-arid woodlands (shrubby sub-formation) ≥30, Wet sclerophyll forests (grassy sub-formation) ≥79, Wetland sclerophyll forests (shrubby sub-formation) ≥79

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	a	b	c	d	e	a	b	c	d	e	a	b	c	d	e	a	b	c	d	e
Average of the 5 subplots																				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element		Landform Pattern		Microrelief	
Lithology		Soil Surface Texture		Soil Colour		Soil Depth	
Slope		Aspect		Site Drainage		Distance to nearest water and type	

Additional Plot Comments

cropping area

Wildthing Environmental Consultants - Office # (02) 49513311

Entrance to Farm

400 m² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 22/1/2026		1C	DARYL

GF	Species	Cover	Abund	voucher
	1 *Urochloa panicoides	30	2000	
	2 *Polygonum aviculare	0.5	10	
	3 *Conyza sp.	8	150	
	4 Calotis lappulacea	0.3	13	
	5 Tribulus sp	0.2	20	
	6 *Alternanthera pungens	0.1	3	
	7 *Lepidium africanum	0.1	10	
	8 Senecio madagascariensis	0.1	1	
	9 Cynodon dactylon	1	200	
	10 Sida trichopoda	0.3	5	
	11 Bromus catharticus	0.2	10	
	12 Einadia trigonos	0.5	10	
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Stormwater Retention Basin

Wildthing Environmental Consultants - Office # (02) 49513311

BAM Site – Field Survey Form | Plot Identifier: 1D

Midline start	Midline end	Plot Size	Date	Plot Waypoint ID	Recorders
E- 270260 N- 6496230	E- 270198 N- 6496205	20×50	21/1/2026	Start - End -	
IBRA region		Brigalow Belt South			
Photo# 9032	Photo# 9033	Vegetation Class			
Bearing 290°	Bearing 40°	Vegetation Zone			
PCT # —	PCT Name				
Consistent BC ACT TEC?					

BAM Attribute (400 m² plot)		Sum values
Count of Native Richness	Trees	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
Sum of Cover of native vascular plants by growth form group	Trees	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
High Threat Weed cover		

BAM Attribute (1000 m² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	0	0
50 – 79 cm	0	
30 – 49 cm	0	
20 – 29 cm	0	
10 – 19 cm	0	
5 – 9 cm	0	
Regeneration < 5 cm	0	
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0	

Large Tree Sizes

Dry Sclerophyll Forests - ≥50, Forested Wetlands - ≥50, Freshwater Wetlands - NA, Grasslands - NA, Grassy Woodlands - ≥50, Heathlands - ≥30, Rainforests - ≥50, Saline Wetlands - NA, Semi-arid Woodland (grassy sub-formation) ≥30, Semi-arid woodlands (shrubby sub-formation) ≥30, Wet sclerophyll forests (grassy sub-formation) ≥79, Wetland sclerophyll forests (shrubby sub-formation) ≥79

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)				
Average of the 5 subplots				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element		Landform Pattern		Microrelief	
Lithology		Soil Surface Texture		Soil Colour		Soil Depth	
Slope		Aspect		Site Drainage		Distance to nearest water and type	

Additional Plot Comments

cropping area

Wildthing Environmental Consultants - Office # (02) 49513311 Stormwater Retention dam

400 m² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 21/1/2026		1D	DARYL

GF	Species	Cover	Abund	voucher
	1 *Urochloa panicoides	10	300	
	2 Conyza sp	15	500	
	3 *Gamphrena celosioides	0.1	5	
	4 *Bromus catharticus	0.3	20	
	5 Cynodon dactylon	3	100	
	6 *Lolium perenne	0.1	5	
	7 Einadia trigonos	0.3	6	
	8 *Chamaralla juncea	0.2	8	
	9 Calotis lappulacea	0.1	3	
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APPENDIX D

FIELD BAM PLOT PHOTOS

Plate D5: Solar Farm Area – BAM Plot 1A Front Peg (21/01/2026).

Plate D6: Solar Farm Area – BAM Plot 1A Back Peg (21/01/2026).

Plate D1: Managers Residences – BAM Plot 1B Front Peg (22/01/2026).

Plate D2: Managers Residences – BAM Plot 1B Back Peg (22/01/2026).

Plate D3: Farm Entrance – BAM Plot 1C Front Peg (22/01/2026).

Plate D4: Farm Entrance – BAM Plot 1C Back Peg (22/01/2026).

Plate D7: Detention Basin Area – BAM Plot 1D Front Peg (21/01/2026).

Plate D8: Detention Basin Area – BAM Plot 1D Back Peg (21/01/2026).

APPENDIX E

EPBC Act 1999

PROTECTED MATTERS SEARCH

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 19-Jan-2026

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	42
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	900 - 1000km upstream from Ramsar site	In feature area
Riverland	900 - 1000km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	1100 - 1200km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities			[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps. Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.			
Community Name	Threatened Category	Presence Text	Buffer Status
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area	In feature area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area	In feature area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community likely to occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area	In feature area
Weeping Myall Woodlands	Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In buffer area only
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In buffer area only
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
FISH			
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
FROG			
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Nyctophilus corbeni			
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
PLANT			
Androcalva procumbens			
[87153]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bertya mollissima			
[18382]	Endangered	Species or species habitat may occur within area	In buffer area only
Cadellia pentastylis			
Ooline [9828]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dichanthium setosum			
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Euphrasia arguta			
[4325]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat may occur within area	In feature area
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In feature area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Vincetoxicum forsteri listed as Tylophora linearis [92384]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Anomalopus mackayi Five-clawed Worm-skink, Long-legged Worm-skink [25934]	Vulnerable	Species or species habitat may occur within area	In feature area
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Delma vescolineata Hunter Valley Delma [92599]	Endangered	Species or species habitat may occur within area	In feature area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In feature area
Uvidicolus sphyrurus Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko [84578]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Queensland Hunter Gas Pipeline, approximately 825 km in length	2008/4483	Controlled Action	Completed	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Queensland Hunter Gas Pipeline, approximately 833 km in length	2008/4620	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Bioregional Assessments			[Resource Information]
SubRegion	BioRegion	Website	Buffer Status
Namoi	Northern Inland Catchments	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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APPENDIX F

SEARS

Department of Planning, Housing and Infrastructure

12 November 2025

Mr Cliff Schmidt
Senior Planner
PSA Consulting Pty Ltd
PO Box 10824
Adelaide Street
Brisbane QLD 4000

Via email <cliff.schmidt@psaconsult.com.au>

SF25/162794
SEAR 2036

Dear Mr Schmidt

Poultry Farms
755 Warrah Ridge Road Warrah Ridge 2343 (Lot 42 DP37629)- Liverpool Plains Shire LGA
Planning Secretary's Environmental Assessment Requirements (SEAR) 2036

Thank you for your request for the Planning Secretary's Environmental Assessment Requirements (SEARs) for the preparation of an Environmental Impact Statement (EIS) for the above development proposal. I have attached a copy of these requirements.

In support of your application, you indicated that your proposal is both designated and integrated development under Part 4 of the *Environmental Planning and Assessment Act 1979* and requires an approval under the *Protection of the Environment Operations Act 1997*. In preparing the SEARs, the Department of Planning, Housing and Infrastructure (the Department) has consulted with the Environment Protection Authority. A copy of their requirements is attached.

If other integrated approvals are identified before the Development Application (DA) is lodged, you must undertake direct consultation with the relevant agencies, and address their requirements in the EIS.

If your proposal contains any actions that could have a significant impact on matters of National Environmental Significance, then it will require an additional approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This approval is in addition to any approvals required under NSW legislation. If you have any questions about the application of the EPBC Act to your proposal, you should contact the Commonwealth Department of Climate Change, Energy, the Environment and Water on (02) 6274 1111.

Should you have any further enquiries, please contact Rose Jones, Planning and Assessment, at the Department on (02) 8275 1721 or via rose.jones@dpie.nsw.gov.au.

Yours sincerely

4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150
Locked Bag 5022, Parramatta NSW 2124

www.dphi.nsw.gov.au

Department of Planning, Housing and Infrastructure

Joanna Bakopanos
A/Director
Industry Assessments
as delegate of the Planning Secretary

4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150
Locked Bag 5022, Parramatta NSW 2124

Department of Planning, Housing and Infrastructure

Planning Secretary's Environmental Assessment Requirements

Section 4.12(8) of the *Environmental Planning and Assessment Act 1979*.
Schedule 3 of the Environmental Planning and Assessment Regulation 2021.

Designated Development

SEAR Number	2036
Proposal	To establish a poultry broiler farm consisting of 14 poultry sheds with a maximum total handling capacity of 810,600 birds, and construct supporting infrastructure including managers residences, staff amenities
Location	755 Warrah Ridge Road Warrah Ridge 2343 (Lot 42 DP37629)
Applicant	Agright Griffith Pty Ltd as Trustee for Agright Griffith Unit Trust
Date of Issue	12 November 2025
General Requirements	The Environmental Impact Statement (EIS) must comply with the assessment requirements and meet the minimum form and content requirements in sections 190 and 192 of the *Environmental Planning and Assessment Regulation 2021*.
Key Issues	The EIS must include an assessment of all potential impacts of the proposed development on the existing environment (including cumulative impacts if necessary) and develop appropriate measures to avoid, minimise, mitigate and/or manage these potential impacts. As part of the EIS assessment, the following matters must also be addressed: • **strategic and statutory context** – including: – a detailed justification for the proposal and suitability of the site for the development – a demonstration that the proposal is consistent with all relevant planning strategies, environmental planning instruments, development control plans (DCPs), or justification for any inconsistencies – a list of any approvals that must be obtained under any other Act or law before the development may lawfully be carried out. • **suitability of the site** – including: – a detailed justification that the site can accommodate the proposed processing capacity, having regard to the scope of the operations and its environmental impacts and relevant mitigation measures – site/floor plans depicting the proposed layout, including the location of machinery, equipment and the farm manager's residence. • **animal welfare, bio-security and disease management** – including:

Department of Planning, Housing and Infrastructure

	– details of how the proposed development would comply with relevant codes of practice and guidelines – details of all pest and disease control measures – a detailed description of the contingency measures that would be implemented for the mass disposal of livestock in the event of disease outbreak. • **waste management** – including: – details of waste handling including transport, identification, receipt, stockpiling and quality control including off-site reuse and disposal – detail of waste management including manure and disposal of dead poultry for the proposal – the measures that would be implemented to ensure that the proposed development is consistent with the aims, objectives and guidelines in the *NSW Waste Avoidance and Sustainable Materials Strategy 2041* • **hazards and risk** – including: – a preliminary risk screening completed in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021, Chapter 3 and *Applying SEPP 33* (DoP, 2011), with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development. Should preliminary screening indicate that the project is "potentially hazardous" a Preliminary Hazard Analysis (PHA) must be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis* (DoP, 2011) and *Multi-Level Risk Assessment* (DoP, 2011). • **bushfire** – including: – an assessment of the risk of bushfire, including addressing the requirements of Planning for Bush Fire Protection 2019 (RFS). Any proposed Asset Protection Zones must not adversely affect environmental objectives (e.g. buffers) • **geotechnical** – including: – any geotechnical limitations that may occur on the site and if necessary, appropriate design considerations to address this • **flood** – an assessment of flood risk on the site. The assessment should determine: – the flood hazard in the area; – address the impact of flooding on the proposed development, and the development's impact (including filling) on flood behaviour of the site and adjacent lands; and – address adequate egress and safety in a flood event • **air quality and odour** – including: – a quantitative assessment of the potential air quality, dust and odour

	impacts of the development, during both construction and operation, in accordance with relevant Environment Protection Authority guidelines – a description and appraisal of air quality and odour impact mitigation and monitoring measures, in line with International Best Practice. • **noise and vibration** – including: – a description of all potential noise and vibration sources during construction and operation, including road traffic noise – a noise and vibration assessment in accordance with the relevant Environment Protection Authority guidelines – a description and appraisal of noise and vibration mitigation and monitoring measures. • **soil and water** – including: – a description of local soils, topography, drainage and landscapes – details of water usage for the proposal including existing and proposed water licencing requirements in accordance with the *Water Act 1912* and/or the *Water Management Act 2000* – an assessment of potential impacts on floodplain and stormwater management and any impact to flooding in the catchment – details of sediment and erosion controls – a detailed site water balance – a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant Water Sharing Plan or water source embargo – details of the proposed stormwater and wastewater management systems (including sewage), including any proposed application to land – an assessment of potential impacts on the quality and quantity of surface and groundwater resources consistent with relevant guidelines, including details on any water monitoring program and measures to mitigate impacts – a description and appraisal of impact mitigation and monitoring measures. • **traffic and transport** – including: – details of road transport routes and access to the site – road traffic predictions for the development during construction and operation – an assessment of impacts to the safety and function of the road network and the details of any road upgrades required for the development. • **biodiversity** – including: - accurate predictions of any vegetation clearing on site or for any road upgrades – a detailed assessment of the potential impacts on any threatened species, populations, endangered ecological communities or their

	habitats, groundwater dependent ecosystems and any potential for offset requirements in accordance with the current Environment and Heritage Group legislation and guidelines – details of weed management during construction and operation in accordance with existing State, regional or local weed management plans or strategies – a detailed description of the measures to avoid, minimise, mitigate and/or offset biodiversity impacts. • **community and stakeholder engagement** - including: – a detailed community and stakeholder participation strategy which identifies who in the community has been consulted and a justification for their selection, other stakeholders consulted and the form(s) of the consultation, including a justification for this approach – a report on the results of the implementation of the strategy including issues raised by the community and surrounding occupiers and landowners that may be impacted by the proposal – details of how issues raised during community and stakeholder consultation have been addressed and whether they have resulted in changes to the proposal – details of the proposed approach to future community and stakeholder engagement based on the results of the consultation. • **food safety** – including details of how the proposed development would meet the relevant Australian Standards and NSW Food Authority Standards in relation to meat handling and processing. • **visual** – including an impact assessment at private receptors and public vantage points. • **heritage** – including Aboriginal and non-Aboriginal cultural heritage.
Environmental Planning Instruments and other policies	The EIS must assess the proposal against the relevant environmental planning instruments, including but not limited to: • State Environmental Planning Policy (Transport and Infrastructure) 2021 • State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Primary Production) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • Liverpool Plains Local Environmental Plan 2011 • relevant development control plans and section 7.11 plans.
Guidelines	During the preparation of the EIS you should consult the Department's Register of Development Assessment Guidelines which is available on the Department's website at https://www.planning.nsw.gov.au/Assess-and-Regulate/Development-Assessment/Industries. Whilst not exhaustive, this Register contains some of the guidelines, policies, and plans that must be taken into account in the environmental assessment of the proposed development.
Consultation	During the preparation of the EIS, you must consult the relevant local, State and

Department of Planning, Housing and Infrastructure

	Commonwealth government authorities, service providers and community groups, and address any issues they may raise in the EIS. In particular, you should consult with the: • NSW Environmental Protection Authority • NSW Department of Primary Industries and Regional Development, specifically the: ○ Agriculture and Biosecurity • Transport for NSW • NSW Rural Fire Service • WaterNSW • Nungaroo Local Aboriginal Land Council • Liverpool Plains Shire Council • the surrounding landowners and occupiers that are likely to be impacted by the proposal. Details of the consultation carried out and issues raised must be included in the EIS.
Further consultation after 2 years	If you do not lodge an application under Section 4.12(8) of the *Environmental Planning and Assessment Act 1979* within 2 years of the issue date of these SEARs, you must consult with the Planning Secretary in relation to any further requirements for lodgement.

DOC25/905099-3

31 October 2025

Rose Jones
Industry Assessments
Planning and Assessment Division
Department of Planning, Housing and Infrastructure
Locked Bag 5022
PARRAMATTA NSW 2124

By email: rose.jones@dpie.nsw.gov.au

EPA's Recommended Environmental Assessment Requirements – Poultry Farm – 755 Warrah Ridge Road, Warrah Ridge 2343 – SEAR 2036

Dear Ms Jones,

I am writing in response to your request for the NSW Environment Protection Authority's (EPA's) Secretary's Environmental Assessment Requirements (SEARs/EARs) for the proposed Poultry Farm (SEAR 2036) at 755 Warrah Ridge Road, Warrah Ridge NSW 2340 (Proposal).

The EPA understand the proposal involves the construction and operation of a 14-shed poultry boiler farm with a maximum capacity of 810,600 birds. Other ancillary buildings and supporting infrastructure including grain storage silos, staff amenities, access roads, gas storage infrastructure, water pipes and pump shed, water storage tanks, farm workshop, and two manager residences are also proposed as part of the development. Other supporting infrastructure will include a solar farm and battery energy storage system for electricity production and a stormwater detention dam.

The EPA has considered the details of the proposal as provided by the Department of Planning, Industry and Environment (DPIE) and has identified the information it requires to issue its general terms of approval in **Attachment A**.

In summary, the EPA's key information requirements for the proposal include an adequate assessment of:

1. **Air issues including odour** – Assess potential impacts on air quality, including dust and odour generated during construction and operation. Consider effects on the surrounding landscape, sensitive receptors, and the local community.
2. **Waste Management** – Evaluate disposal options for general waste and solid litter originating from the poultry sheds.
3. **Disposal of mortalities** – Assess management of poultry mortalities under normal operations and in the event of a mass death scenario. This should address disposal options, prevention of odour emissions, pathogen containment, vermin and disease vector management, and protection of surface and groundwater from contamination.

NSW Environment Protection Authority

As the environmental steward and regulator of our State we are committed to a sustainable future. Join us on our mission to protect tomorrow together.

Phone: 131 555

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Website: epa.nsw.gov.au

Visit: 6 Parramatta Square 10 Darcy Street Parramatta NSW 2150

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NSW GOVERNMENT

4. **Noise** – Consider the proximity of sensitive receptors and assess the impact of noise sources associated with the project.
5. **Water and soils** – Detail water management systems to prevent runoff and contamination. Include strategies for managing wash water from shed cleaning to protect surface and groundwater quality.

In carrying out the assessment, the proponent should refer to the relevant guidelines as identified in **Attachment A** and any relevant industry codes of practice and best practice management guidelines.

To assist the EPA in assessing the EIS, it is requested that the EIS document follow the format of DPIE's EIS guidelines and addresses the EPA's specific requirements outlined in the following attachments. If the necessary information is not adequately addressed in the EIS then delays in the development assessment process may occur.

The Proponent should be made aware that any commitments made in the Environmental Impact Statement (EIS) may be formalised as approval conditions and may also be placed as formal licence conditions.

Based on the information provided to the EPA, the proponent will require an Environment Protection Licence ("EPL") for Livestock Intensive activities, Clause 22 of Schedule 1 of the *Protection of the Environment Operations Act 1997* ("POEO Act"), to operate the proposed Poultry Farm.

The proponent will need to make a separate application to the EPA at the completion of the assessment process should the proposal be issued with Development Consent. General information on licence requirements can be obtained from the EPA's Environment Line by calling 131 555 or on the EPA's website at www.epa.nsw.gov.au/licensing/licencePOEO.htm.

The Proponent should be made aware that, consistent with provisions under Part 9.4 of the POEO Act, the EPA may require the provision of a financial assurance and/or assurances. The amount and form of the assurance(s) would be determined by the EPA and be required as a condition of an EPL.

In addition, as a requirement of an EPL, the EPA will require the Proponent to prepare, test and implement a Pollution Incident Response Management Plan and/or Plans in accordance with Section 153A of the Act.

If you have any questions about this request, please contact Daniel Stokes via email at environmentprotection.planning@epa.nsw.gov.au.

Yours sincerely

LINDSAY FULLOON
Manager Operations
Western Districts

ATTACHMENT A

NSW EPA's Recommended Environmental Assessment Requirements
Poultry Farm – 755 Warrah Ridge Road, Warrah Ridge 2343 – SEAR 2036

1. Environmental impacts of the project

1.1. The EIS must address the requirements of Section 45 of the *Protection of the Environment Operations Act 1997* (POEO Act) by determining the extent of each impact and providing sufficient information to enable the EPA to determine appropriate conditions, limits and monitoring requirements for an Environment Protection Licence (EPL).

1.2. Impacts related to the following environmental issues need to be assessed, quantified and reported on:

- **Air Issues, including odour:** air quality including dust and odour generation from construction and operation on the surrounding landscape and/or community.
- **Noise and vibration impacts** associated with construction and operational noise particularly machinery and plant movements.
- **Waste** including hazardous materials and radiation. Consideration needs to be given to disposal options for general waste, sanitary waste as well as hazardous materials and radiation, where relevant.
- **Water and Soils** including site water balance and sediment and erosion controls during construction and operation phases.

The Environmental Impact Statement (EIS) should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant guidelines mentioned.

2. EPA Licensing and Approval Requirements

2.1. The development is a scheduled activity under the Protection of the Environment Operations Act 1997 (POEO Act) and will therefore require an Environment Protection Licence (EPL) if approval is granted.

2.2. Should project approval be granted, the proponent will need to make an application to the EPA for its EPL for the proposed facility prior to undertaking any on site works. Additional information is available through the EPA Guide to Licensing document (www.epa.nsw.gov.au/licensing/licenceguide.htm).

SPECIFIC ISSUES

3. Air issues

3.1. The EIS must demonstrate the proposal's ability to comply with the relevant regulatory framework, specifically the POEO Act and the *Protection of the Environment Operations (Clean Air) Regulation 2022*. This consideration should include section 129 of the POEO Act concerning control of "offensive odour".

3.2. The EIS must include an air quality impact assessment (AQIA). The AQIA must be carried out in accordance with the document, *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2022). These are available at: https://www.epa.nsw.gov.au/your-environment/air/industrial-emissions/approved-methods-for-the-modelling-and-assessment-of-air-pollutants

3.3. The EIS must detail emission control techniques/practices that will be employed at the site and identify how the proposed control techniques/practices will meet the requirements of the POEO Act, *POEO (Clean Air) Regulation* (2022) and criteria within *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2022).

4. Odour

4.1. An investigation and assessment of odour impacts likely to be associated with cold air drainage effects on all identified and potential receivers.

4.2. A requirement to install a meteorological station as soon as possible on or near the site to obtain site-specific meteorological data for a minimum of 3 months and ideally 6 to 12 months to aid in refining odour assessment and modelling.

4.3. Collection of wind speed data using an ultrasonic wind speed sensor to ensure accurate representation of low wind speed frequencies to allow more accurate prediction of likely katabatic impacts on receivers.

4.4. Include a consideration of 'worst case' emission scenarios, and sensitivity analysis around the timing of peak emissions.

4.5. Air dispersion modelling must be conducted in accordance with: *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2022) https://www.epa.nsw.gov.au/your-environment/air/industrial-emissions/approved-methods-for-the-modelling-and-assessment-of-air-pollutants; and *Generic Guidance and Optimum Model Settings for the CALPUFF Modelling System for Inclusion* in the *Approved Methods for the Modelling and Assessments of Air Pollutants in NSW Australia* (TRC Environmental Corporation, 2011): https://www.epa.nsw.gov.au/-/media/epa/corporatesite/resources/air/calpuffmodelguidance.pdf

4.6. Demonstrate the proposal's ability to comply with the relevant regulatory framework, specifically the *Protection of the Environment Operations (POEO) Act 1997* and the POEO (Clean Air) Regulation 2022. Particular consideration should be given to section 129 of the POEO Act concerning control of "offensive odour".

4.7. Odour emissions must be assessed in accordance with the *Technical Framework – Assessment and Management of Odour from Stationary Sources in NSW* and/or the *Technical Notes – Assessment and Management of Odour from Stationary Sources in NSW* (DEC, 2006) available at: https://www.epa.nsw.gov.au/yourenvironment/air/industrial-emissions/managing-odour/technical-framework-odour.

4.8. Detail emission control techniques/practices that will be employed by the proposal.

5. Noise and Vibration

The EIS must assess the following noise and vibration aspects of the proposed development:

5.1. Construction noise associated with the proposed development should be assessed using the *Interim Construction Noise Guideline* (DECC, 2009). These are available at: https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/construction-noise.

5.2. Operational and construction activities on the premises that maybe considered vibration intensive should be assessed using the guidelines contained in the *Assessing Vibration: a technical guideline* (DEC, 2006). These are available at: https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/assessing-vibration

5.3. If blasting is required for any reasons during the construction or operational stage of the proposed development, blast impacts should be demonstrated to be capable of complying with the guidelines contained in *Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (ANZEC, 1990). These are available at: https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/construction-noise

5.4. Operational noise from all industrial activities (including private haul roads and private railway lines) to be undertaken on the premises should be assessed using the guidelines contained in the *NSW Noise Policy for Industry* (EPA, 2017). Available at: https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/noise-policy-for-industry-(2017)

5.5. Noise on public roads from increased road traffic generated by land use developments other than road projects should be assessed using the guidelines contained in the *NSW Road Noise Policy* (EPA, 2011) and associated application notes. Available at: https://www.epa.nsw.gov.au/your-environment/noise/transport-noise.

6. Waste, chemicals and hazardous materials and radiation

6.1. The EIS must assess all aspects of waste generation, management, and disposal associated with the proposed development.

6.2. The EIS must demonstrate compliance with all regulatory requirements outlined in the POEO Act and associated waste regulations.

6.3. The EIS must identify, characterise and classify the following in accordance with the EPA's *Waste Classification Guidelines* (2014) and associated addendums:

(i) all waste that will be generated onsite through excavation, demolition or construction activities, including proposed quantities of the waste; and

(ii) all waste that is proposed to be disposed of to an offsite location, including proposed quantities of the waste and the disposal locations for the waste. This includes waste that is intended for re-use or recycling.

Note: The EPA's *Waste Classification Guidelines* (2014) and associated addendums are available at: https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste.

6.4. The EIS must outline contingency plans for any event that may result in environmental harm, such as excessive stockpiling of material, or dirty water volumes exceeding the storage capacity available on-site.

6.5. The EIS must demonstrate that appropriate spill containment will be provided for storage, filling and loading of all fuels and other chemicals to be used on site, in accordance with the relevant Australian Standard.

6.6. Identify the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the *NSW Waste and Sustainable Materials Strategy 2041 Stage 1: 2021-2027*. Available at: https://www.epa.nsw.gov.au/Your-environment/Recycling-and-reuse/Strategic-direction-for-waste-in-NSW/Waste-and-Sustainable-Materials-Strategy.

7. Water

7.1. The EIS must demonstrate how the proposed development will meet the requirements of section 120 of the POEO Act.

7.2. The EIS must include a water balance for the development including water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.

7.3. If the proposed development intends to discharge waters to the environment, the EIS must demonstrate how the discharge(s) will be managed in terms of water quantity, quality and frequency of discharge and include an impact assessment of the discharge on the receiving environment. This should include:

- Description of the proposal including position of any intakes and discharges, volumes, water quality and frequency of all water discharges.
- Description of the receiving waters including upstream and downstream water quality as well as any other water users.
- Demonstration that all practical options to avoid discharge have been implemented and environmental impact minimised where discharge is necessary.

7.4. The EIS must refer to Water Quality Objectives for the receiving waters and indicators and associated trigger values or criteria for the identified environmental values of the receiving environment. This information should be sourced from the ANZECC (2018) *Guidelines for Fresh and Marine Water Quality*, available at: https://www.waterquality.gov.au/anzguidelines

7.5. The EIS must describe how stormwater will be managed in all phases of the project, including details of how stormwater and runoff will be managed to minimise pollution. Information should include measures to be implemented to minimise erosion, leachate and sediment mobilisation at the site. The EIS should consider the guidelines *Managing urban stormwater: soils and construction*, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC, 2008).

7.6. The EIS must describe any water quality monitoring programs to be carried out at the project site. Water quality monitoring should be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (2022) which is available at: https://www.epa.nsw.gov.au/licensing-and-regulation/licensing/environment-protectionlicences/licensing-under-poeo-act-1997/licensing-to-regulate-water-pollution/approvedmethods-for-sampling-and-analysing-water-pollutants

8. Climate Change

8.1. Provide estimate of greenhouse gas (GHG) emissions for the project by carrying out a Greenhouse Gas Assessment consistent with the most recent version of the EPA's Greenhouse Gas Assessment Guide for Large Emitters (GHG guide) that is available on the EPA's website. The GHG estimate is to confirm if the project is likely to result in 25,000 tonnes or more of scope 1 and 2 emissions (CO2-e), in any financial year during the operational life of the project. Input data and assumptions used to estimate GHG should be accompanied by supporting evidence.

Note: Where the proponent believes that certain requirements from the GHG guide are not applicable, the proponent may indicate that in the EIS but must provide sufficient justification.

APPENDIX F
WEED INFORMATION

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
Avena spp Wild Oats POACEAE	Description A grass with large ligule with no auricles, the leaves tend to be hairy with a slight bluish hue. The emerging leaf is rolled. Wild oat seedlings have leaves twisted anticlockwise – the opposite direction to wheat and barley. The sheaths are smooth or slightly hairy. The dark green leaf blades remain twisted and the youngest leaf is rolled. Mature plants reach up to 160 cm. The panicle is spreading and open with large spikelets. Habitat Croplands, pasture, fallows. Comments Early emergence plants produce the most seed, but later emergence plants can still produce enough seed to support reinfestation.	Asia or the Mediterranean Region.		An integrated approach to weed management can reduce Avena weed biomass by up to 90 per cent. Physical Remove isolated plants by hand. Carefully bag seed heads. Dig up or pull plant with taproot, with minimal soil disturbance. Chemical Use a knockdown herbicide such as glyphosate followed 5-7 days later with Spray. Biological No known biological agents.
 *Alternanthera pungens* Khaki Weed AMARANTHACEAE	Description A prostrate herb with perennial root system with annual above ground growth. Spreads by seed within spiny bracts that adhere to tyres, clothing and animals. Local spread may also occur through spreading stems that root at nodes. Habitat Found in a wide range of habitats. Comments Spines are a problem with dogs and stock but are particularly troublesome to humans and readily penetrate skin.	Native of Brazil, Ecuador, Peru and Venezuela Widespread in NSW	General Biosecurity Duty	Physical Small areas and isolated plants chipped out and bagged for disposal. Roots must be removed well below the surface to stop re shooting. Chemical Several herbicides provide effective control. Spot spray isolated occurrences. Biological Unknown.

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
 *Arctotheca calendula* Capeweed ASTERACEAE	Description Stemless or short-stemmed succulent annual herb, to 30 cm high. Flower-head (the 'daisy' is actually a composite of many small flowers) is 15 mm diameter. Leaves are 5-25 cm long and 2-6 cm wide, on 6 cm stalks, stem clasping, oblanceolate (backward pointing spear-shaped) deeply lobed and white downy or felted underneath. The outer flowers or ray florets (the 'petals') have a yellow upper-side (sometimes with a dark purple to brown base), a grey-green to purplish-green underside and are 1.5-2.5 mm long. The inner flowers or disc florets (the 'eye') are dark purplish black and tubular. Fruit are achenes and are covered in brown, woolly hairs. Readily eaten by stock and providing reasonable nutrition. However, grazing of young, rapidly growing plants can cause nitrate poisoning. High intake by dairy cattle can taint milk. Widespread weed of cultivation and pastures.	Native of South Africa. Naturalised across the southern half of Australia		Perennials (plants that germinate and seed through many years) should have their major root structures lifted out entirely to prevent re-shooting. Using a shovel, weeding fork, mattock or garden fork, loosen the dirt surrounding the plant's roots or underground structures (bulbs, corns, tubers, rhizomes, etc). Carefully pry the plant out of the ground using the tool as a lever to help lift the whole plant out of the ground. Annual species (plants that germinate and seed within 12 months) can be chipped using a chipping hoe to sever the stem from the roots below the crown of the plant. Ensure that this takes place before the production of flowers, fruit and seed
 *Bidens pilosa*	Description An annual plant with opposite, petioled, pinnate, with 3–5 sharply serrated ovate leaflets, and are slightly hairy Habitat Any disturbed or waste ground, roadsides and areas that are dry and infertile. Comments	Temperate and tropical America. Widely naturalised species that is particularly common in the eastern and northern parts of Australia.		Physical Small areas and isolated plants chipped or pulled out. Bag seed heads for disposal. Chemical When practicable, spraying should be completed before flower and seed production. Biological No known biological agents.

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
Cobber's Pegs ASTERACEAE	Traditionally used for a wide range of ailments in many countries.			
 *Centaurea solstitialis* St. Barnaby's Thistle ASTERACEAE	Description An annual or short-lived plant, to 75 cm high. Leaves are greyish due to covering of downy hairs. Flower heads are bright yellow surrounded by rows of yellow spines. Habitat Subhumid temperate regions. Occurs in warm situations and on fertile drier soils. Comments Can form dense impenetrable stands that displace desirable vegetation in natural grasslands, rangelands.	Native to the Mediterranean region and western Asia,	General Biosecurity Duty	Physical Pulling (e.g., hand pulling and digging) are practical methods for removing this species when plants are scattered, patches are small or where other control methods are not feasible. To ensure that plants do not recover, it is important to remove all aboveground stem material. Chemical Several herbicides provide effective control. Broom spray or use a hand gun application on isolated occurrences. Biological No known biological agents.

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
 *Carthamus lanatus* Saffron Thistle ASTERACEAE	Description In autumn and winter appears as flat rosettes up to 15cm in diameter composed of dark green leaves, each with a broad terminal lobe and narrower irregular lobes along the sides. Each lobe ends in a short spine. In late spring an erect stem develops which is usually 80–120cm high (but occasionally exceeding 150cm). After stem elongation and the formation of flowering heads the rosette leaves die off. The stem has whitish-green ribs and usually branches about half way up. Mature plants are very stiff and spiny. In early summer, single yellow compound flowers form at the end of each stem or branch. Lance-like spines surround each flower. The seeds are large, about 6mm long, grey-brown with prominent ribs and a smooth seed coat. Habitat Warm temperate and subtropical semi-arid regions. It is a serious weed in areas with an annual rainfall of 500 to 850 mm in eastern Australia. It is very cold tolerant. The density varies much between seasons. Comments Its stiff, spiny leaves discourage grazing and can injure livestock and native species. The seed may remain dormant in soil for up to eight years, but most seeds germinate within two or three years.	Native to the Mediterranean and Asian region.	General Biosecurity Duty	Physical Small areas and isolated plants chipped or pulled out and bagged for disposal. Chemical Glyphosate or 2,4-D amine are suitable herbicides for spot spraying patches. Biological Because Saffron Thistle is closely related to the commercial Safflower, biological control is not likely to be implemented. Native budworm (*Helicoverpa* spp) occasionally causes damage to the flowering heads.

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
 Cirsium vulgare Spear thistle, Black Thistle ASTERACEAE	Description Spear Thistle is an erect annual or biennial spiny rough herb, 600 mm to 1.5 m tall with a branching taproot to 700 mm deep. It has dark green leaves that are white and 'woolly' underneath. It has purple flower heads. Habitat It is found in pastures (including irrigated pastures), cropland (including irrigated crops), on roadsides and neglected areas, but is also known to occur on less fertile coastal dunes and in heathlands. Comments Spear Thistle seeds are spread short distances by the wind. The feathery pappus attached to the seed does aid in this, but for many seed produced the pappus detaches from the seed before leaving the flower head.	Widespread over most of NSW. Sporadic in the drier far west.	General Biosecurity Duty	Physical Single or small population can be chipped out by hand, removing most of the roots. Chemical At seedling stage are susceptible to growth regulator type herbicides. When practicable, spraying should be completed before the centre flowering stem develops. Biological Three biological control agents have been released in NSW. A seed fly (Urophora stylata) is established with reasonable impact on seed production of spear thistle. Two weevils, a seed head weevil (Rhinocyllus conicus) and a crown weevil (Trochosirocalus horridus) were released, but their establishment is unknown.
 *Lactuca serriola*	Description An erect plant which can grow up to 1.5 m in height but averages 80 cm with a reddish stem which is stiff, spiny and contains sticky white sap. Leaves are waxy grey green with fine spines along the veins and edges. The undersides have whitish veins. Leaves are oblong or lanceolate and lobed and get progressively smaller as they reach the top of the plant. Habitat It is a common weed of fallows, roadsides, waste lands and gardens.	Of Eurasian origin		Physical Grubbing (all year). Ensure entire plant is removed especially the taproot. Manually remove small and/or isolated infestations, ensuring entire plant is removed especially the taproot. Chemical Apply glyphosate at early growth or rosette stages in spring, summer or autumn or metsulfuron methyl + surfactant. Plants are difficult to control with herbicides once the flowering stems have begun to elongate.

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
Prickly Lettuce ASTERACEAE	Comments Seeds of prickly lettuce are relatively short-lived, indicating prevention of seed set over two years should be effective in running down the seedbank			Biological Sheep and goats readily feed on prickly lettuce and can consume entire fields of the weeds.
 *Senecio madagascariensis* Fireweed ASTERACEAE	Description Fireweed is an annual or biennial herb 10–60 cm tall. It is erect with many branches. The leaves are smooth, toothed or lobed on the edges. The yellow flowers are small and daisy-like with up to 15 petals. Habitat Thrives in overgrazed pastures, disturbed or cultivated soil and most soil types. Comments Fireweed contains chemicals called pyrrolizidine alkaloids. Livestock that eat it get liver damage. The damage is irreversible and gets worse the more fireweed an animal eats.	From southeast Africa Grows along the Australian east coast from Victoria to Central Queensland.	General Biosecurity Duty Prohibition on certain dealings (all of NSW) Weed of National Significance (WONS).	Physical Pull out individual plants in small, isolated patches or sensitive environmental areas. Wear gloves to protect skin from the plant's poisons. Bag and dispose of the removed plants. Chemical The best time to treat fireweed with herbicide is late autumn. This controls the peak numbers of seedlings and young plants. Flowering plants can be spot sprayed with herbicides containing aminopyralid or metsulfuron-methyl. Biological There are no effective biological control agents available for fireweed.

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
 *Sonchus oleraceus* Common Sowthistle ASTERACEAE	Description Common Sowthistle is an erect, hairless, branched annual or biennial herb about 1 m tall with hollow stems which have a milky sap. The basal leaves are up to 30 cm long, form a rosette and are soft and lobed or toothed. The stem leaves are somewhat smaller and stem clasping. The yellow dandelion-like flower heads are clustered, each about 2 cm in diameter, with all the florets having a radiating petal-like blade. Habitat They are common weeds of pasture and waste land, but also invade bushland, particularly in damp areas. Comments A single plant may produce up to 8,000 seeds.	Native to Europe, Asia and North Africa.		Physical Remove small and/or isolated populations manually prior to seed set. Slashing is often ineffective as flowers continue to be produced. Chemical Spot spray + wetting agent preferably at the rosette stage. Biological Preliminary surveys for suitable control agents found two potential organisms: a rust fungus Miyagia pseudosphaeria and an undescribed species of eriophyid mite (Aceria sp.) causing extensive leaf-rolling damage.
 Silybum marianum Variegated Thistle ASTERACEAE	Description The basal leaves form large rosettes in winter and are variegated with white veins and patches on the upper surface and are shallowly to deeply lobed with prickly margins. Similar smaller and clasping leaves are on the flowering stems. There is a single purple flower head which is extremely spiny and very large. The fruits are topped by simple to minutely barbed bristles. Habitat More abundant in wetter areas. Comments Spread entirely by seed. The seeds are equipped with a small pappas, or parachute of hairs, however they	Southern Europe. Mediterranean. North Africa. South western Asia. Soviet Union.	General Biosecurity Duty	All control methods employed should aim to attack the thistles in autumn or early winter before plants become established. Physical Small patches can be chipped with a hoe, provided most of the taproot is also removed. Slashing or mowing may reduce seed set but is ineffective at killing variegated thistles. Chemical Several herbicides are registered for use on variegated thistles for both spot and boom spraying. These include glyphosate, Biological

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
	are not disbursed over long distances by wind. Seed may remain viable in the soil for 9 years. Some livestock (especially cattle) can suffer from nitrate poisoning from grazing Variegated Thistle			Three biological control agents have been released in NSW. A seed fly (Urophora stylata) is established with reasonable impact on seed production of spear thistle. Two weevils, a seed head weevil (Rhinocyllus conicus) and a crown weevil (Trochosirocalus horridus) were released, but their establishment is unknown.
 *Xanthium spinosum* Bathurst Burr ASTERACEAE	Description Compact summer growing herb. Stems produce may groups of 3-pronged stiff yellowish spines. Leaves are dark green with prominent white veins and divided into three irregular lobes. Burrs are 1-1.5cm long and covered in hooked spines. Habitat It prefers drier areas, such as well-drained contour banks and lighter soils. Comments The weed spreads entirely by burrs that are usually carried by people or animals, attached to clothes, fur or other fibre by their hooked spines. They may also be dispersed by water or as a contaminant in seeds and hay.	NSW – Coast to Western Plains	General Biosecurity Duty.	Physical Chipping or hand hoeing is only economical for small areas, individual plants or isolated populations. Chemical Bathurst burrs are susceptible to a range of foliar and residual herbicides. Foliar herbicides are most effective if the plants are young and actively growing. Plants suffering from moisture stress are difficult to kill. Older plants may require repeat applications. Late control with some herbicides, when the burrs are green, can result in seed sterility – however this is not recommended as the primary form of control. Biological Occasionally attacked and killed by a caterpillar. A fungus also attacks the seeds in some areas.

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
 *Echium plantagineum* Paterson's Curse BORAGINACEAE	Description An erect stemmed, annual to short lived perennial plant 10-150 cm tall with purple, trumpet shaped, 2-3cm long flowers with 5 somewhat unequal and irregularly shaped petal lobes. It has a large basal rosette of hairy, deeply veined, entire, oblong leaves. The basal leaves are up to 20 cm long but those up the stem are smaller and somewhat stem-clasping. The flowering stems are branched. Habitat Common weed of agricultural land and roadsides, often covering entire paddocks. Comments It reduces pasture productivity and is toxic to livestock. It can degrade the natural environment, compromising habitat values by crowding out and suppressing native vegetation.	Native to Mediterranean Europe and northern Africa.	General Biosecurity Duty Hunter - Regional Recommended Measure.	Physical Pulling out by hand or digging plants out using a hoe or shovel, is very effective on single plants, small patches. Best done before plants begin to flower. Removed plants from site to prevent seed drop. Chemical A wide range of selective herbicides available for controlling Paterson's curse. Biological Seven insects that attack all stages of Paterson's curse have been released in Australia:
	Description Upright, spreading cactus usually less than 1.5 m tall but occasionally up to 2 m. The leaves are reduced to scales 3–4 mm long and they drop off when plants are young plants. The fleshy egg-shaped pads are dull bluish or greyish-green to green in colour and have bumps on the surface called areoles. Spines, barbed bristles (glochids), leaves, flowers, fruit, roots and new shoots all grow out of the areoles. The flowers are lemon yellow with greenish or pink markings on the back of the petals Habitat	Native to southeastern parts of North America, the east coast of Mexico, northern South America, Cuba, Bahamas and Bermuda.	General Biosecurity Duty. Prohibition on certain dealings (all of NSW) Must not be imported into the state, sold, bartered, exchanged or offered for sale. Weed of National Significance (WONS).	Physical Dig up small or isolated plants using a mattock or other tools. Wear appropriate protective clothing and gloves to protect against injuries from spines or bristles. Dense infestations or large isolated plants can be removed with machinery where there is good access to the site, the site is not environmentally sensitive. Ensure the roots are dug out and that all plant parts are disposed of. Chemical

SPECIES	DESCRIPTION & BIOLOGY	DISTRIBUTION	BIOSECURITY DUTY (HUNTER)	CONTROL MEASURES
Opuntia Prickly Pear CACTACEAE	Can grow in tropical, subtropical, warm temperate and semi-arid climates. It tolerates full sun and shade. It grows in a wide range of soil types including saline soils, sand, loams and heavy clays. Comments Fruit is eaten by birds, foxes and other animals and seeds are spread in their droppings. Common pear can regrow from stem fragments, flowers and immature fruits. Stem segments can be spread by animals, vehicles, water or wind and quickly take root. Dumping of unwanted plants causes new outbreaks.	In NSW, is mostly found in the North-West and Hunter regions but is also found throughout NSW.		Herbicides are especially useful for sparse, scattered infestations. Spray actively growing plants. Cover all parts of the plant with herbicide to the point of visible wetness. Check treated plants and control new growth Biological There are two successful biological control agents for common pear: • Cactoblastis Moth, (Cactoblastis cactorum) • Cochineal Bug (Dactylopius opuntiae 'stricta' lineage).
 *Marrubium vulgare* Horehound LAMIACEAE	Description Horehound is a bushy perennial plant, 30 to 80cm high, Leaves are hairy above, very hairy to woolly underneath, rounded with a crinkled surface and sharply aromatic when crushed. It has small white flowers in dense clusters. Clusters of flowers dry to form brown burrs with small hooked spines. Habitat Commonly occurs throughout Australia along fence lines, road sides, channel banks, around buildings, sheep camps and neglected areas. Comments The seed capsules cling to animal fur and clothing and may cause considerable matting of sheep fleeces.	Native of Europe. & northern Africa.	General Biosecurity Duty	Physical Isolated plants can be physically removed, preferably before they have seeded. Chemical Small infestations can be treated with herbicide. Spot-spraying: Best effects are achieved in autumn when horehound is growing strongly Controlled Burning Autumn low-intensity fire in grasslands and open woodlands. Biological *Agonoscelis rutila* (Horehound Bug) Two moths - a plume moth (Wheeleria spilodactylus) and a clear wing moth (Chamaesphecia mysiniformis) have been released against horehound in NSW.

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 *Agonoscelis rutila* (Horehound Bug) Goolgowi August 2022.				
 *Malva parviflora* Small-flowered Mallow MALVACEAE	Description An erect or sprawling perennial plant with stems up to 60cms long. Softly hairy alternate, dark green leaves with broad rounded teeth. Small white to pale pink 5-petalled flowers clustered in groups of 2 – 5 in the leaf axils (joints). Habitat Broadly occurs on all soil types, but most commonly in disturbed sites, in stockyards, around farm buildings, gardens, lawns, watercourses and roadsides. Comments Spreads by seed, through wind, water and soil movement and in the faecal matter of stock.	Native of the Mediterranean. Found across NSW.		Physical Hand pull or dig isolated plants but must cut substantial tap root below the crown. Chemical Chemical control only effective at early growth stages. Biological Listroderes difficilis (Vegetable Weevil) often decimates dense stands.

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	Leaf extracts possess anti-inflammatory and antioxidant activities. May cause staggers in stock that graze significant quantities.			
 *Rubus fruticosa* complex Blackberry ROSACEAE	Description Shrub with tangled, prickly stems. Leaves are alternate along the stem in clusters of 3 - 5 leaves. Leaves are shed in winter in cooler climates. The stems (canes) are up to 7m long and covered in sharp spines. Flowers are white or pink and appear from late November to late February. The fruit are dark coloured berries with each berry having 20 – 30 seeds. Habitat Prefer temperate climate with a warm summer and cool winter annual rainfall of at least 700 mm. Blackberry can grow in drier climates if it has access to water e.g. along a riverbank. It does not like heavy shade. Comments Birds and animals feeding on the berries spread the seeds in their droppings. Seeds also spread by water and with soil. Blackberries also spread vegetatively - When first year canes (primocanes) touch the ground, they sprout roots and become new 'daughter' plants. Negatives of Blackberry: • quickly infests large areas; • forms dense thickets that restrict:; access to waterways, access via fire trails; • takes over pastures; • is unpalatable to most livestock;		General Biosecurity Duty Prohibition on certain dealings Regional Recommended Measure* (for Regional Priority - Asset Protection) (Hunter) The plant should not be bought, sold, grown, carried or released into the environment. Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread from their land. Land managers to reduce impacts from the plant on priority assets.	Long term control of blackberry is an ongoing process. A combination of control methods and follow up is needed. Physical Physical control alone is rarely successful because it's hard to remove all the roots. Chemical Herbicides are the most reliable blackberry control method. Use herbicides in combination with other control methods. Spray healthy, actively growing plants with new leaves on the cane tips. Apply to both the outer and inner leaves. First year plants are easier to kill with herbicide. Well-established thickets may need more treatments. After slashing or burning, wait until plants have up to 1 m of regrowth before applying herbicide.

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	• reduces native habitat for plants and animals; • fuels bushfires; • provides shelter for rabbits and foxes; • provides food for introduced species such as starlings, blackbirds and foxes; Positives of Blackberry: • edible fruit; • supporting pollinators; • food and shelter for some native animals and birds such as bandicoots and blue wrens; • leaves can be used in herbal medicines.		Weed of National Significance (WONS).	<u>Grazing</u> Goats can make a start on controlling heavy infestations. Goats prefer blackberry over improved pasture species. <u>Burning</u> Burning will not kill blackberry. Burning can make infestations more accessible for follow-up treatment. <u>Biological</u> The leaf rust fungus *Phragmidium violaceum* is the only deliberately released biological control agent in Australia.