Preliminary Documentation Report (Part B)

Ripley Road, South Ripley, Queensland, 4306 EPBC Act (2023/09690)

Prepared for AW Bidco 6 Pty Ltd
30 October 2025

Ref: 11081 E

Saunders Havill

PATHWAYS TO SUCCESS

Referral lodgement report

AW Bidco 6 Pty Ltd - Urban Development Project

Application Number: **02082** Commencement Date: **20/10/2023** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

AW Bidco 6 Pty Ltd - Urban Development Project

1.1.2 Project industry type *

Residential Development

1.1.3 Project industry sub-type

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1.1.4 Estimated start date *

01/01/2025

1.1.4 Estimated end date *

01/01/2030

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The proposed action is for the construction of an urban development with associated lots, roads and supporting infrastructure. In addition to vegetation clearing earthworks will be required to achieve the project as well as deconstruction of the existing property dwelling. The site is centred on the coordinates –27.7069, 152.8109 (*refer to Att 1 11081 MNES Report 2023.10.20 – Figure 3 for the Development Layout*)

The project is predicted to directly impact all 77.9ha of the referral area inclusive of 2ha of 'Isolated and scattered ancillary Koala habitat trees' and 74.9 ha of 'Isolated trees and paddocks' with remaining 0.9ha made up a series of small, constructed dams refer *Att 1 11081 MNES Report 2023.10.20, Section 5 - Impact Assessment, page 59*. The entire impact area is categorised as Category X (non-remnant) vegetation under the Queensland Vegetation Management Act 1999. Clearing of native vegetation will have a direct impact on trees qualifying as potential habitat and foraging habitat for Koala and Grey-headed Flying-fox. Stockland will not be constructing houses at the project site, rather developing land available for housing in accordance with the specifications of the Queensland Government's development Scheme.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

The proposed action is being referred under the *Environmental Protection and Biodiversity Conservation Act 1999* for potential impacts to Matters of National Environmental Significance. Refer to the attached *Att 1 11081 MNES Report 2023.10.20, Section 2 - Commonwealth Legislation and Policy, page 7 and Section 3.3 - Likelihood of Occurrence Assessment, page 11.*

The development occurs within the Ripley Valley Urban Development Area under the Urban Land Development Authority Act 2007 (ULDA Act). This legislation supersedes the requirements of Local Government planning provisions (in this case, the Ipswich Planning Scheme 2006) and selective other state legislation (e.g. Planning Act 2017, Vegetation Management Act 1999, and others).

In 2013, the Urban Land Development Authority (ULDA) whom administered the ULDA Act, was replaced by Economic Development Queensland (EDQ) and the UDA remanned as a Priority Development Area (PDA), for the purposes of consistency with the Economic Development Act 2012 (ED Act).

The Ripley Valley UDA Development Scheme was approved by the ULDA on 8 October 2011 and remains the primary regulatory instrument for development within the PDA. The Scheme identifies the site falls entirely within the Urban Living Zone, which applies to most of the areas intended for urban development within the PDA. Under the Scheme the Urban Living Zone is intended to 'be developed as neighbourhoods focused on identifiable and accessible centres comprising of a mix of residential houses, multiple residential and other residential and live work opportunities through home-based business.'

Additionaly, the Applicant is advised to ensure that any development obligations pursuant to the provisions of the *Aboriginal Cultural Heritage Act 2003*, the *Planning Act 2016* and the *Planning Regulation 2017* are complied with in respect to the proposed development. Applicants, developers and landowners have a duty of care under the legislation where items of cultural heritage significance are located, even if those items have not been previously recorded in a database.

Refer to the attached *Att 1 11081 MNES Report 2023.10.20, all figures and plans for further environmental constraints discussion.*

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

At present, there has been no public consultation undertaken for this project other than with the relative parties. Once the referral is confirmed to be valid, provided the information set out in Schedule 2 of the EPBC regulations, the referral will be published and all of its supporting documents on the EPBC public portal for public comments for 10 business days.

The Applicant is advised to ensure that any development obligations pursuant to the provisions of the *Aboriginal Cultural Heritage Act 2003*, the *Planning Act 2016* and the *Planning Regulation 2017* are complied with in respect to the proposed development. Applicants, developers and landowners have a duty of care under the legislation where items of cultural heritage significance are located, even if those items have not been previously recorded in a database.

For more information, the applicant may seek advice from the Registered Aboriginal Cultural Heritage Body for the Ipswich Region, the cultural heritage database, or seek the advice of the Department of Aboriginal and Torres Strait Islander Partnerships.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

Personal information may be disclosed to other Australian government agencies, persons or organisations where necessary for the above purposes, provided the disclosure is consistent with relevant laws, in particular the Privacy Act 1988 (Privacy Act). Your personal information will be used and stored in accordance with the Australian Privacy Principles.

See our Privacy Policy to learn more about accessing or correcting personal information or making a complaint. Alternatively, email us at privacy@awe.gov.au.

☑ **Confirm that you have read and understand this Privacy Notice ***

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	24144972949
Organisation name	Saunders Havill Group Pty Ltd
Organisation address	4006 QLD

Referring party details

Name	Liam Brzezinski
Job title	Senior Ecologist
Phone	0431173273
Email	liambrzezinski@saundershavill.com
Address	9 Thompson Street, Bowen Hills, 4006 QLD

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	637312675
Organisation name	AW BIDCO 6 PTY LIMITED

Organisation address	2000 NSW

Person proposing to take the action details

Name	David Franklin
Job title	Project Director
Phone	0434073972
Email	david.franklin@stockland.com.au
Address	PO Box 10160 Adelaide Street, Brisbane, QLD, 4000

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

AW Bidco 6 Pty Ltd has a history of delivering projects with a satisfactory record of responsible environmental management. AW Bidco 6 Pty Ltd does not have any past or present proceedings under Commonwealth, State or territory law for the protection of the environment or the conservation and sustainable use of natural resources.

AW Bidco 6 Pty Ltd is a subsidiary of Stockland Corporation Limited, Stockland also has a long history of providing projects with a satisfactory record of responsible environmental management. Stockland Corporation Limited does not have any past or present proceedings under Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

AW Bidco 6 Pty Ltd is a subsidiary of Stockland Corporation Limited. Refer Att 2 Environmental Policy for Stockland Environmental Policy

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	637312675
Organisation name	AW BIDCO 6 PTY LIMITED
Organisation address	2000 NSW

Proposed designated proponent details

Name	David Franklin
Job title	Project Director
Phone	0434073972
Email	david.franklin@stockland.com.au
Address	PO Box 10160 Adelaide Street, Brisbane, QLD, 4000

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	24144972949
Organisation name	Saunders Havill Group Pty Ltd
Organisation address	4006 QLD
Representative's name	Liam Brzezinski
Representative's job title	Senior Ecologist
Phone	0431173273
Email	liambrzezinski@saundershavill.com
Address	9 Thompson Street, Bowen Hills, 4006 QLD

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	637312675
Organisation name	AW BIDCO 6 PTY LIMITED
Organisation address	2000 NSW
Representative's name	David Franklin
Representative's job title	Project Director
Phone	0434073972
Email	david.franklin@stockland.com.au
Address	PO Box 10160 Adelaide Street, Brisbane, QLD, 4000

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

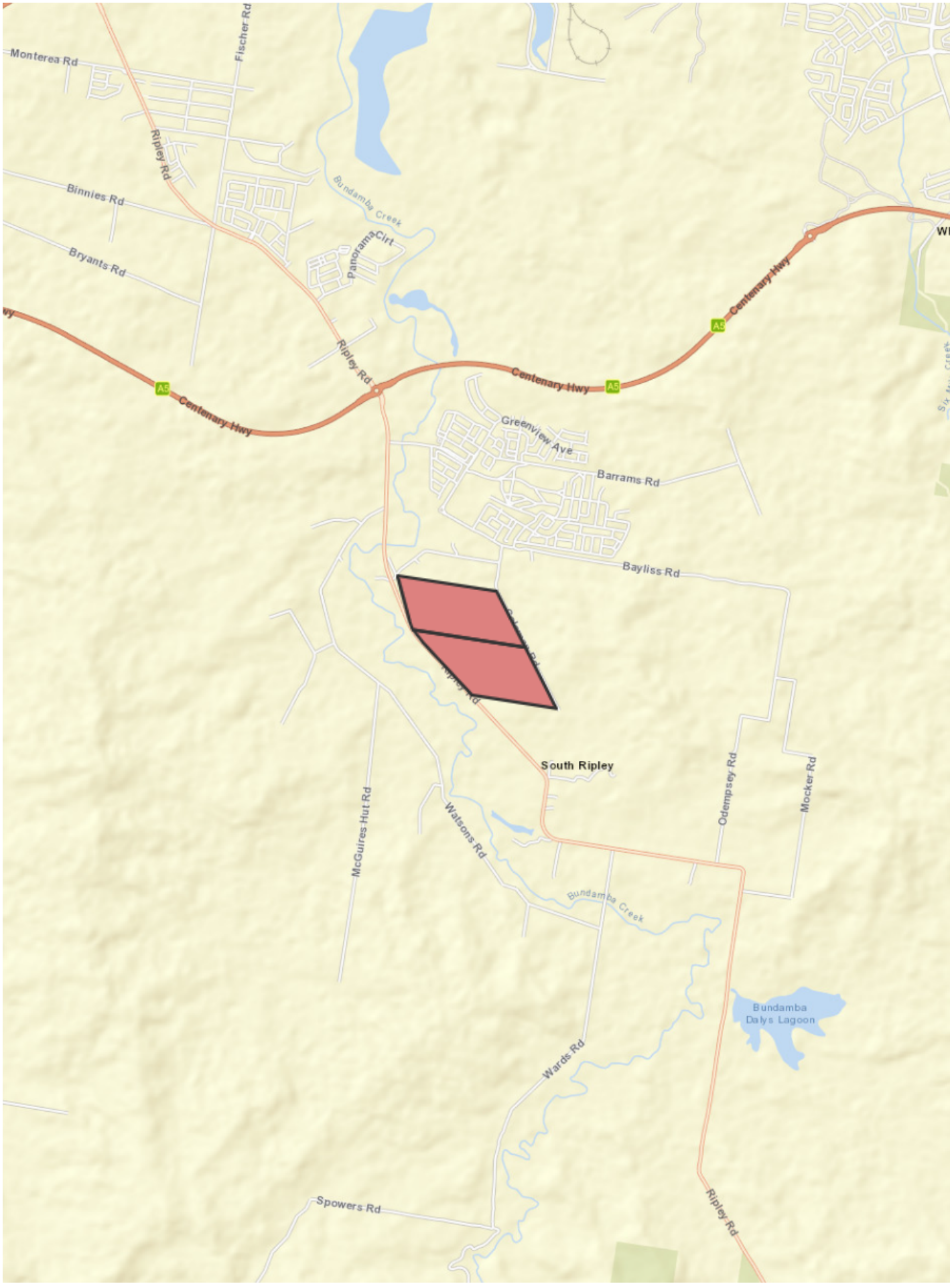
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint


Monterea Rd
Fischer Rd
Ripley Rd
Binnies Rd
Bryants Rd
Bundamba Creek
Panorama Cirt
Centenary Hwy
A5
Greenview Ave
Barrams Rd
Bayliss Rd
South Ripley
McGuires Hut Rd
Watsons Rd
Odempsey Rd
Mocker Rd
Bundamba Dalys Lagoon
Wards Rd
Spowers Rd

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

944 - 1024 Ripley Road, South Ripley

2.2.2 Where is the primary jurisdiction of the proposed action? *

Queensland

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The property is freehold

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The referral area is situated within the suburb of South Ripley approximately 14.5km south-east of Ipswich and 34km south-west of Brisbane. The referral area is located within Ripley Valley Priority Development Area (RVPDA), a landscape that has been subject to rapid landscape changes for industry and overall urbanisation within the past 10 years. The referral area has been subject to historical clearing for agricultural activities resulting in completely cleared paddocks over the entire land holding with the exception of a small area of scattered trees and juvenile regrowth in the north (refer to *Att 1 11081 MNES Report 2023.10.20, Plan 1 – Historical Imagery Analysis, page 18* for historical aerial imagery analysis).

Vegetation in the north-west contains a higher density of Eucalypt trees, however, aerial imagery and site surveys indicate this vegetation has also been subjected to historical modification, thus resulting in weeds and minimal native shrub cover (refer to *Att 1 11081 MNES Report 2023.10.20, Plan 1 – Historical Imagery Analysis, page 18* and Section 4.2, Page 32 for survey results). The existing area of trees coincides and is integrated with the original farmhouse, cattle yards, sheds, landscape and exotic species along with other farming infrastructure.

Despite the north-western portion of the site containing isolated and scattered ancillary and locally important Koala habitat trees (as defined in the Australian National University Koala habitat assessment criteria and methods report 2022 (refer to *Att 1 11081 MNES Report 2023.10.20, Section 4.2, page 32 and Link 1 A review of koala habitat assessment criteria and methods)* this area offers little opportunity for fauna movement given west of the site is largely cleared and immediately flanked by Ripley Road. Vegetation on-site does not provide,

enhance or contribute to connectivity values within the broader South Ripley area with the allotment clearly standing out as devoid of vegetation within aerial photos (refer to *Att 1 11081 MNES Report 2023.10.20, Plan 2 – Fragmentation Analysis, page 19* for vegetation cover). Neighbouring properties to the south consist of regrowth vegetation of primarily juvenile specimens mixed with paddocks, houses and other farming infrastructure. Vegetation to the east consists of a mixture of Category X (non-remnant) and Category C (high-value regrowth) vegetation including areas of sparse vegetation and juvenile specimens, consistent with a small-scale rural setting. The majority of the properties surrounding the referral area hold approved Property Map of Assessable Vegetation (PMAV) applications for Category X (non-remnant) vegetation. In addition, the neighbouring property to the east proposes a residential development with a current EPBC referral (2021/9061). Thin linear strips of vegetation are present along Bundamba Creek, approximately 150m to the west. To the north, a single rural property is present containing large patches of Category C (high-value regrowth) vegetation and PMAV Category X (non-remnant) vegetation. An active development application for residential allotments occurs on this allotment. Large developments are present further north including Ripley Valley State Secondary School.

Therefore, it is considered that the referral area offers no ecological linkages, due to lack of vegetation and existing/future fragmenting factors (refer to attached *Att 1 11081 MNES Report 2023.10.20, Plan 2 – Fragmentation Analysis, page 19 and Plan 3 and 4 – Context Analysis, page 20-21*)

3.1.2 Describe any existing or proposed uses for the project area.

The site currently exists as rural property consisting of predominantly treeless paddocks utilised for cattle grazing. The referral area sits within a highly modified rural setting. It is located in proximity to rural properties, future residential developments and main road.

The proposed use of the referral area is for an Urban Development to provide housing and facilities to the rapidly developing Ripley Valley Priority Development Area. Several development applications with local or federal approvals surround the site (refer to *Att 1 11081 MNES Report 2023.10.20, Plan 3 and 4 – Context Analysis, page 20-21*).

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

Due to historical and on-going modification within the referral area, the site does not contain any outstanding natural features or other important or unique values.

The site is almost completely cleared with only a 2 ha of 'Isolated and scattered ancillary Koala habitat trees' in the north-west containing predominantly *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) and 74.9ha of 'Isolated trees and paddocks' with remaining 0.9ha made up a series of small, constructed dams. The subcanopy is absent across the site as a result of historical and continued cattle grazing. Weeds species are present across the referral area including *Lantana camara* (Lantana) and *Senecio madagascariensis* (Fireweed).

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The referral area is undulating in areas although rises centrally to a cleared ridge lowering in elevation towards the boundaries. The highest areas of the site are approximately 90m AHD (in the centre) gradually sloping to approximately 60m AHD (along the boundaries)

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Flora

A total of sixty-seven (67) flora species were recorded within the vegetation communities within the referral area during field surveys, as listed in as listed in *Att 1 11081 MNES Report 2023.10.20, Appendix E, from page 95*. Of the sixty-seven (67) flora species recorded, thirty-seven (37) are native and thirty (30) species are considered to be non-native / introduced species.

The site is mapped as entirely as Category X (non-remnant) vegetation as a result of an approved PMAV (ref: 2006/010563) under the Vegetation Management Act 1999 (VMA). Pre-clear RE mapping indicates the site was historically comprised of predominantly Of Concern RE12.9-10.7 as well as a small section of Endangered RE12.3.3 associated with Bundamba Creek in the north-west described below:

Descriptions of the regional ecosystems (RE) are presented below.

RE12.9-10.7: Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora leiocarpa, E. melanophloia woodland. Occurs on Cainozoic and Mesozoic sediments. Broad Vegetation Group (BVG) 1M13c: Vegetation communities in this regional ecosystem include: 12.9-10.7a: Eucalyptus siderophloia, Corymbia intermedia +/- E. tereticornis and Lophostemon confertus open forest. Occurs on Cainozoic and Mesozoic sediments in near coastal areas. Not a Wetland (BVG1M: 12a)

RE12.3.3: Eucalyptus tereticornis +/- E. siderophloia and Corymbia intermedia open forest to woodland. Corymbia tessellaris, Lophostemon suaveolens and Melaleuca quinquenervia frequently occur and often form a low tree layer. Other species present in scattered patches or low densities include Angophora leiocarpa, E. exserta, E. grandis, E. latisinensis, E. tindaliae, E. racemosa and Melaleuca sieberi. Corymbia trachyphloia and/or C. citriodora subsp. Variegata may dominate on areas of Pleistocene alluvia. Eucalyptus seeana may be present south of Landsborough and Livistona decora may occur in scattered patches or low densities in the Glenbar SF and Wongi SF areas. Occurs on Quaternary alluvial plains and drainage lines along coastal lowlands. Rainfall usually exceeds 1000mm/y. (BVG1M: 16c)

The vast majority of the site is cleared with only isolated trees. Where vegetation occurred within the referral area, species were generally consistent with pre-clear RE mapping 12.9-10.7 consisting of indicator species *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) with scattered *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus melanophloia* (Silver Leaf Ironbark). Trees on-site are generally confined to a cluster in the north-west which contained a sparse canopy of 2 ha. Following field surveys, vegetation within this area has been classified as ‘Isolated and scattered ancillary koala habitat trees’ providing the highest ecological value on-site. Vegetation within this area is consistent with historical and contemporary land-uses being a largely cleared subcanopy and shrub layer with disturbance leading to weeds present, predominantly *Lantana camara* (Lantana) and *Senecio madagascariensis* (Fireweed). A single residential dwelling is present in this area including several planted ornamental species including Ficus sp. and Jacaranda. The trees in this location are interspersed with cattle yards, fencing, sheds, stables, driveways etc. The historical retention of isolated trees is associated with amenity and shade for the homestead area. Some regrowth species have seeded of the mature trees retained in this location (*refer to Att 1 11081 MNES Report 2023.10.20, Plan 7 – Vegetation Communities, page 40*).

Fauna

A total of thirty-three (33) fauna species were recorded during field surveys, including thirty (30) birds, two (2) amphibians and one (1) mammal. No conservation significant fauna species or evidence of their activity were recorded during the field surveys. A complete fauna species list is provided in *Att 1 11081 MNES Report 2023.10.20, Appendix E, from page 95.*

The site was walked several times including targeted surveys for threatened species within potentially suitable habitat in the north-west. All species observed were recorded.

Targeted surveys to assess Koala activity within the referral area were completed in accordance with Philips and Callaghan (2011) (refer to attached *Att 1 11081 MNES Report 2023.10.20, Appendix D, from page 95* for survey results). No evidence of Koala in the form of direct sightings or scats and scratch marks was detected within the referral area during these targeted surveys nor via incidental searches.

Detailed site surveys recorded individual tree specifications across the referral area, including identifying and recording hollows. During the site survey 6 trees were identified with defined hollows. These are scattered around the property and along the cadastral boundary lines. Hollow-bearing trees are sparsely distributed across the referral area with no areas containing a high density of hollow-bearing trees. Furthermore, an area in the north-west of the referral area containing a marginally higher density of native trees and recognised as providing the highest ecological value on-site, relative to the balance of the site, contained no hollow-bearing trees. It is recognised that many threatened fauna species that utilise hollows (i.e Greater Glider and Yellow-bellied Glider) require an abundance of hollows for denning which are not present within the referral area, nor is there any available foraging or movement habitat. Given the extremely degraded nature of the site and the lack of suitable habitat for all species combined with the absence of active usage evidence through detailed daytime surveys it was considered redundant to carry out nocturnal spotlighting over the 6 trees sporadically located over the site containing hollows. It is likely that hollow-bearing trees within the referral are only utilised by common, highly mobile, avifauna, if at all.

No fauna species listed under the EPBC Act and NCA, or evidence of their activity was recorded during field surveys.

Refer to attached *Att 1 11081 MNES Report 2023.10.20* for detailed technical methodologies and results.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The referral area consists predominantly of cleared paddocks dominated by pasture grasses with isolated and scattered native trees. Modification and disturbance within the referral area has resulted in exotic grasses, forbs and shrubs across the referral area.

As the entire referral area is mapped as Category X (non-remnant) vegetation as a result of an approved PMAV (ref:2006/010563), on-ground vegetation characteristics were utilised to delineate vegetation communities. Refer to attached *Att 1 11081 MNES Report 2023.10.20, Figure 4 – PMAV, page 17*.

Field surveys identified three (3) vegetation communities within the referral area defined as: (refer Plan 7).

1. Isolated and scattered ancillary koala habitat trees
2. Isolated trees and paddocks
3. Dams and waterbodies

The site is confirmed to be predominantly cleared with scattered isolated trees and tree clusters in limited areas, acacia regrowth and open paddocks. The exception to the cleared areas is an isolated patch of native trees in the north-west.

The Australian Soil Resource Information System (ASRIS) maps the site as containing Sodosols (*refer Att 3 ASRIS mapping*). Sodosols are texture-contrast soils with impermeable subsoils due to the concentration of sodium. These soils occupy a large area of inland Queensland. Generally, Sodosols have a low-nutrient status.

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

No Commonwealth Heritage Places are known to be located on or adjacent to the site.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

No Indigenous heritage values are known for the site. A duty of care site assessment will be completed to identify any Aboriginal objects during an archaeological survey. Notwithstanding this result, the proponent is aware of their duty of care obligations and will engage with the traditional owners prior to the commencement of work. Once completed, the results of duty of care assessment will be available to the Department upon request.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

The site contains two mapped watercourses, which resemble drainage features, in the far north and south which both exit the site to the west where Ripley Road is present. These drainage features travel downstream to the west, across Ripley Road to merge with Bundamba Creek. Bundamba Creek meanders north through high density residential, industrial and rural land to merge with the Bremer River and onto the Brisbane River and into Moreton Bay at the Port of Brisbane. This is a distance of at least 100km.

The referral area is significantly far from the nearest point of the Moreton Bay RAMSAR Wetland. Furthermore, the proposed development will implement the necessary stormwater management plans during the construction and operation phases of the project.

Several constructed dams were observed across the site with most at least partially filled with water. However, water dependant macrophytes were limited to larger dams in the south and west of the site. No riparian vegetation was observed adjacent to any of the dams on-site.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	No	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No World Heritage Sites exist within or near to the referral area. No potential for impact on a World Heritage Property from the proposed action. The closest World Heritage Site is the Gondwana Rainforests of Australia of which is more than 120 km south of the development area and therefore no anticipated impact will occur.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No National Heritage places exist within or near to the referral area. No potential for impact on a National Heritage place from the proposed action. The closest National Heritage Place is Glass House Mountains National Landscape of which is approximately 90 km to the north of the development area. Due to the distance of the project site away from this area, it is unlikely that it will have an impact on any National Heritage places.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Moreton Bay

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

A search of the EPBC PMST using a 5 km radius of the site identified that the closest wetland of international importance, Moreton Bay, is approximately 50 km from the site (refer to attachment *Att 1 11081 MNES Report 2023.10.20, Appendix A, from page 95*). No other wetlands of international importance occur within close proximity of the project extent. As the referral area is distant from the wetland and not directly connected to it, no direct impacts on the wetland are anticipated to occur as a result of the project construction and operation.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species
No	No	Anthochaera phrygia
No	No	Argynnis hyperbius inconstans
No	No	Arthraxon hispidus
No	No	Bosistoa transversa
No	No	Botaurus poiciloptilus
No	No	Calidris ferruginea
No	No	Calyptorhynchus lathami lathami

Direct impact	Indirect impact	Species
No	No	Chalinolobus dwyeri
No	No	Climacteris picumnus victoriae
No	No	Cryptostylis hunteriana
No	No	Cupaniopsis shirleyana
No	No	Cupaniopsis tomentella
No	No	Cyclopsitta diophthalma coxeni
No	No	Dasyurus hallucatus
No	No	Dasyurus maculatus maculatus (SE mainland population)
No	No	Delma torquata
No	No	Dichanthium setosum
No	No	Erythrotriorchis radiatus
No	No	Falco hypoleucos
No	No	Fontainea venosa
No	No	Furina dunmalli
No	No	Geophaps scripta scripta
No	No	Grantiella picta
No	No	Hemiaspis damelii
No	No	Hirundapus caudacutus
No	No	Lathamus discolor
No	No	Macadamia integrifolia
No	No	Macadamia tetraphylla
No	No	Macroderma gigas
No	No	Notelaea ipsviciensis
No	No	Notelaea lloydii
No	No	Numenius madagascariensis
No	No	Petauroides volans
No	No	Petaurus australis australis
No	No	Petrogale penicillata
Yes	No	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
No	No	Picris evae
No	No	Planchonella eerwah
No	No	Plectranthus habrophyllus
No	No	Potorous tridactylus tridactylus
No	No	Pseudomys novaehollandiae
Yes	No	Pteropus poliocephalus

Direct impact	Indirect impact	Species
No	No	Rhaponticum australe
No	No	Rhodamnia rubescens
No	No	Rhodomyrtus psidioides
No	No	Rostratula australis
No	No	Samadera bidwillii
No	No	Stagonopleura guttata
No	No	Thesium australe
No	No	Turnix melanogaster

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community
No	No	Grey box-grey gum wet forest of subtropical eastern Australia
No	No	Lowland Rainforest of Subtropical Australia
No	No	Poplar Box Grassy Woodland on Alluvial Plains
No	No	Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions
No	No	Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland
No	No	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Koala (Phascolarctos cinereus)

The Koala occurs in a range of environments containing eucalypt forest or woodland. While the referral area does contain Koala habitat trees within a small area, on-ground assessments delineated vegetation communities into ‘Isolated Trees and Paddocks’ across the majority of the site and ‘isolated and scattered ancillary Koala habitat trees’ within marginally denser patch of native trees in the north-west. SAT assessments and Scat meander surveys were utilised to detect evidence of Koala activity across the referral area, with a focus on the treed area in the north-west, and to determine the likelihood of occurrence on-site. Scat meander is a technique involving walking a winding transect and searching the base of Koala food trees for Koala scats, the trunk for scratch marks and the crown of the tree for Koala specimens. In addition, two (2) Spot Assessment Techniques (SAT’s) were carried out which involves searching the base of the nearest 30 trees to a central point for scats. In addition to these methods every tree was searched during a full site tree survey. No evidence of Koala activity in the form of scats, scratch marks and direct observations were recorded within the referral area. The evidence suggests that the referral area is not currently utilised by Koalas which is reflected of the area containing large areas (74.9ha) of no habitat and only a small area (2ha) of marginal habitat for the species.

The majority of the referral area is not considered to contain habitat critical to the survival of the species. The exception to this is the small area of isolated and clustered trees in the north portion of the property. As noted some mature trees, including koala species have historically been retained in this location in conjunction with some landscape and exotic tree species providing shade and amenity around the house, sheds, cattle yards, stables and other localised farming infrastructure. Trees located in this part of the property could be argued as being connected to vegetation occurring on the land holding to the north. This land holding is both zoned fully for residential development and contains an active development application for this outcome. No trees are proposed for retention on this allotment. Within the northern patch of trees mapped as Isolated and Scattered Koala trees the mature specimens have been retained primarily as part of

the landscape amenity around the house and supported by non-native plantings. The trees occur amongst other infrastructure which during more intensive agricultural phases would have been actively utilised by cattle, horses and other farm activities generally making these trees less attractive to threatened species when compared to the more vegetated communities to the north.

The proposed development will have a direct impact on koala through vegetation clearing which will involve the clearing of Non-juvenile Koala habitat trees (NJKHT) within the north of the site. However, this impact is not considered significant as the area of clearing is minimal and there is no evidence of the species utilising the site (refer *Att1 11081 MNES Report 2023.10.20, Section 7 - Significant impact assessment*, from page 67)

No sightings of Koala, nor evidence of Koala, was recorded within the referral area.

Grey-headed Flying-fox (Pteropus poliocephalus)

Pteropus poliocephalus (Grey-headed Flying-fox) requires foraging resources and roosting sites to persist. The species is known to use a wide variety of habitats including subtropical and temperate rainforests, tall sclerophyll forest and woodlands, heaths, swamps and also urban and agricultural areas where food trees have been cultivated.

The species is highly adaptive with its diverse native diet, which it can supplement with introduced species. It is known to forage within a variety of habitat areas as each resource does not produce food throughout the entire year. There are no observed roosts on-site, with the nearest roost located 8.5 km north-west of the site in Yamanto (479).

The nearest recorded sighting of the species is within the Yamanto camp with no records within 8km of the site. Despite the site containing potential foraging species, the general lack of vegetation across the referral area indicates it would be highly unlikely for the species to utilise vegetation on-site, particularly given the availability of large areas of suitable habitat within White Rock Conservation Area to the east.

The Isolated and Scattered Tree zone around the existing house and farm infrastructure is dominated by Eucalyptus crebra (Narrow-leaved Ironbark) and Corymbia citriodora (Spotted Gum) which are both species listed as providing winter and spring flowering and fruiting phases and thus technically could be available to GHFF. The landscape plantings within the same zone also contain two large exotic fig trees which additionally could provide a forging resource. The small size, fragmented context and absence of supporting habitat attributes align these available foraging resources with the equivalence of a large rural residential back yard which is generally not considered to be habitat critical to the survival of the species.

The proposed development will have a direct impact on Grey-headed Flying-fox through vegetation clearing which will involve the clearing of potential foraging habitat across the referral area (refer *Att1 11081 MNES Report 2023.10.20, Section 7 - Significant impact assessment*, from page 67)

No sightings of Grey-headed Flying-fox was recorded within the referral area.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

Koala (*Phascolarctos cinereus*)

Given the minimal amount of actual vegetation clearing to undertake this development, its historical intensive grazing uses and central location within a major Priority Development Area, combined with no evidence of occurrence, it is considered highly unlikely that vegetation on-site would be utilised by Koala

Following assessment of the Significant Impact Guidelines, National Recovery Plan and Action Advice, the project is not considered to have a significant impact on Koala.

Grey-headed Flying-fox (*Pteropus poliocephalus*)

Given the small number of qualifying foraging tree species, their historical homestead locality and distance from known roost sites, the site is not considered to provide critical habitat supporting an important population of the species.

Following assessment of the Significant Impact Guidelines, and Conservation Advice, the project is not considered to have a significant impact on Grey-headed Flying-fox.

Refer *Att1 11081 MNES Report 2023.10.20, Section 7 - Significant impact assessment*, from page 67

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

The referral area considered for this project is moderately sized, unconstrained bare grazing land that retains almost no native vegetation values over 95% of the area, being maintained as large open paddocks with some small constructed ephemeral dams for localised cattle water supply.

The property includes a small area of scattered clusters and isolated trees of both a mature and semi mature age along the northern boundary (2ha). The area contains native trees [predominantly *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark)] in conjunction with some landscape and exotic tree species retained and planted to provide amenity around the house, sheds, stables, cattle yards, driveway and other farming infrastructure. The proposed action is not considered to have a significant impact on any MNES.

No direct sightings of the species were made and indirect evidence in the form of searching every remaining site tree failed to locate evidence of Koala usage. A minor localised impact will occur at the action site with removal of these tree species, however the small, fragmented and homestead setting of the trees will not result in any important, notable or consequential impact on MNES.

Overall, this report concludes that the proposed development, has low potential to cause a significant impact on MNES as defined under significant impact guidelines and therefore the proposed Action is recommended as a Not a Controlled Action.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Vegetation Clearing and Management Plan

A Vegetation Clearing and Management Plan (VC&MP) should form part of the broader management document submitted as part of the operational works application for the development site. The VC&MP should cover clearing of all vegetation listed in this report and include details on:

- Clearly show trees to be removed
- All civil works likely to impact on existing vegetation
- Temporary and permanent exclusion and protection fencing
- Roles and responsibilities for site contractors, the developer and the consultant group
- Stockpiling and site access locations
- A clearing sequence plan showing the commencement of clearing and direction of removal (this should be in conjunction with the Fauna Management Plan to allow for the appropriate flushing of fauna towards safe havens and/or the application of an appropriate relocation program)
- Links to weed management and revegetation proposals
- The stock piling and reuse of cleared vegetation

Fauna Management Plan

A Fauna Management Plan (FMP) should be prepared for potential impacts of the construction phase covering the loss of vegetated areas, isolated trees and likely barriers and impediments to local dispersal.

The FMP should link closely with the VC&MP and include details on:

- Species surveyed as using the site with a focus on those most likely impacted by development works
- A list of relevant State and Commonwealth legislation constraints and controls for the above listed fauna
- A plan showing existing habitat opportunities and locations
- Details of the threats to existing fauna species
- Clearing sequence plan from the VC&MP
- Management and mitigation measures i.e. temporary use of fauna exclusion fencing
- Fauna spotter role, contacts and certification
- Specific fauna management procedures for potential or known habitat trees.

Fauna Spotter Catcher

A registered and suitability qualified fauna spotter catcher/ecologist will need to be employed for the construction phase of the project to implement a protocol of best management practises. Significant habitat features, should any be identified on site, will be flagged prior to clearing events and these areas supervised by an appropriately experienced Ecologist. Identified within the clearing supervision protocol should be flagging of hollow bearing trees, if present, followed by the removal of vegetation surrounding them. After 24 to 72 hours, these trees should then be removed. Trees must be directionally felled into open or already cleared areas.

The objective of this is to enable hollow dependant fauna an opportunity to move on their own accord as many species utilise multiple den/roost sites within a given home range should they occur. Certain areas could be identified and flagged as significant, such as old-growth trees with hollow resources and on-site identification to construction personnel will help reduce/avoid clearing. Where required, native fauna situated within areas to be cleared will be relocated to a secure area of similar habitat prior to the commencement of vegetation clearance works by a registered fauna spotter/catcher. Should any removal and relocation of nests be required, it is to be undertaken by a suitably qualified and experienced person and advice sought where necessary.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Following assessment of the significant impact guidelines, the project is not considered to have a significant impact on any MNES as the vast majority of the site consists of only isolated trees and paddocks. Further, the Action is not considered to interfere substantially with the recovery of the Koala or Grey-headed Flying-fox

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species
No	No	Actitis hypoleucos
No	No	Apus pacificus
No	No	Calidris acuminata
No	No	Calidris ferruginea
No	No	Calidris melanotos
No	No	Cuculus optatus
No	No	Gallinago hardwickii

Direct impact	Indirect impact	Species
No	No	Hirundapus caudacutus
No	No	Monarcha melanopsis
No	No	Monarcha trivirgatus
No	No	Motacilla flava
No	No	Myiagra cyanoleuca
No	No	Numenius madagascariensis
No	No	Pandion haliaetus
No	No	Rhipidura rufifrons
No	No	Tringa nebularia

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

Database searches returned thirteen (13) migratory fauna species listed as threatened under the EPBC Act and/or NC Act, as having been previously recorded or predicted to occur within 5 km of the referral area. Following the likelihood of occurrence assessment, the Latham's Snipe (*Gallinago hardwickii*) was identified as having the potential to occur on-site based on a desktop survey. Following detailed field surveys over multiple days, the Latham's Snipe was not observed utilising dams on-site. It is considered unlikely that the species would utilise dams on-site given the suitability of habitat associated with Bundamaba Lagoon to the south-east.

A likelihood of occurrence assessment has been carried out by SHG using information from previous and contemporary ecological field surveys to assess the potential for listed threatened species and communities to utilise and / or occur on site. The likelihood assessment has been carried for the site, refer *Att 1 11081 MNES Report 2023.10.20, Section 4.3.4, from page 57* which identifies that significant features for migratory species are absent.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action does not comprise a nuclear action, and therefore a direct and / or indirect impact is not predicted.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action is not being taken in or proximal to a Commonwealth Marine Area. Commonwealth marine areas exists over approximately 50 km east of the project site therefore the proposed action is not likely to impact on this Commonwealth marine area.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action is more than 300 km south of the Great Barrier Reef Marine Park, and is not considered to directly and / or indirectly impact upon it.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action is not located proximal to water resources that would impact a large coal mining development or coal seam gas.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action is not to occur on or adjacent to Commonwealth Land.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action is not to occur on or adjacent to Commonwealth heritage places overseas.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

The proposed development area is wholly within the ‘Urban Living’ zone within the Ripley Valley Priority Development Area with no proposed environmental areas within or adjacent to the site. The site directly reflects the type of land holding which should be targeted for development given minimal impacts to the environment.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1 11081 MNES Report 2023.10.20.pdf Technical report relating to Matters of National Environmental Significance	19/10/2023	No	High

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 2-Environmental Policy.pdf Stockland Corportation Limited - Environmental Policy	22/09/2022	No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	A review of koala habitat assessment criteria and methods https://www.agriculture.gov.au/sites/default/fil..			High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 3 - ASRIS soil mapping.pdf Australian Soil Resource Information System mapping	21/12/2023	No	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	24144972949
Organisation name	Saunders Havill Group Pty Ltd
Organisation address	4006 QLD
Representative's name	Liam Brzezinski
Representative's job title	Senior Ecologist
Phone	0431173273
Email	liambrzezinski@saundershavill.com
Address	9 Thompson Street, Bowen Hills, 4006 QLD

☑ Check this box to indicate you have read the referral form. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

By checking this box, I, **Liam Brzezinski of Saunders Havill Group Pty Ltd**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	637312675
Organisation name	AW BIDCO 6 PTY LIMITED
Organisation address	2000 NSW
Representative's name	David Franklin
Representative's job title	Project Director
Phone	0434073972
Email	david.franklin@stockland.com.au
Address	PO Box 10160 Adelaide Street, Brisbane, QLD, 4000

Check this box to indicate you have read the referral form. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

I, **David Franklin of AW BIDCO 6 PTY LIMITED**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

Check this box to indicate you have read the referral form. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

I, **David Franklin of AW BIDCO 6 PTY LIMITED**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

Attachment 1 – 11081 MNES Report 2023.10.20

Technical Report - Matters of National Environmental Significance

944 - 1024 Ripley Road, South Ripley, Queensland, 4306

Prepared for AW Bidco 6 Pty Ltd
20 October 2023

Job 11081

Document Control

Document: 11081 MNES Technical Report, Ripley Road, South Ripley, 4306, prepared for AW Bidco 6 Pty Ltd, dated 20 October 2023.

Document Issue

Issue	Date	Prepared By	Checked By
Draft	11.09.2023	LB	MS / AD
Internal Approval	25.09.2023	LB	MS
Final	20.10.2023	LB	MS

Prepared by

ABN 24 144 972 949
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Table of Contents

Figures

Tables

Plans

1. Introduction

Saunders Havill Group (SHG) was engaged by Stockland Development Pty Ltd to carry out an ecological assessment of Matters of National Environmental Significance (MNES) to support a referral under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The purpose of this report is to identify potential MNES, specifically listed threatened species and communities that may be impacted by the proposed development ('the action') of land located at 944-1024 Ripley Road, South Ripley, Queensland, 4306.

1.1. Description of the Action

AW Bidco 6 Pty Ltd ('the Proponent'), a subsidiary of Stockland Development Pty Ltd, is proposing to develop a residential master planned community on land located at 944-1024 Ripley Road, South Ripley, described as Lot 241 on SL10253 and Lot 242 on SL10253 (refer **Figure 1** and **Figure 2** for Site Context and Site Aerial). The land holding is centrally located within the Queensland Government's Ripley Valley Priority Development Area (PDA) and is surrounding by residential zoned land and development projects. The land area is supported by significant Queensland Government investment in roads, sewer and water purposefully designed to enable projects to commence and alleviate housing pressure in the South East Queensland region.

The referral area accounts for a total of 77.9 hectares (ha) zoned as 'Urban Living' within the Ripley Valley Priority Development Area Development Scheme and as a combination of 'Secondary Urban Centre East Neighbourhoods 'and 'Neighbourhoods' on the Structure Plan (refer **Figure 3** for Proposed Development).

1.2. Purpose

This ecological assessment has been prepared to support a referral to the Australian Government's Department of Agriculture, Water and the Environment ('the Department') for assessment against the EPBC Act. The purpose is to:

- Identify biodiversity values within or near the project area with a specific focus on MNES
- Identify potential impacts of the proposed action on MNES via analysis and assessment against published Department Conservation Advice, Significant Impact Criteria and other policies and guidelines.
- Demonstrate measures incorporated within the acquisition, design and construction of the project to avoid, minimise and / or mitigate any potential identified impacts; and
- Provide an assessment against the *Significant Impact Guideline 1.1* for MNES and or any other specific species criteria assessment identified as having the potential to be impacted by the action, at its broadest scope.

The findings of this assessment are designed to clearly identify if the action will result in any potential significant residual impact on MNES and determine if it should be made a controlled action.

1.3. Areas of Investigation

The areas of investigation for this ecological assessment include:

- Referral area – Lot 241 on SL10253 and Lot 242 on SL10253 totalling approximately 77.9 ha.
- Locality – the extent of the 5 km radius database searches of the referral area.

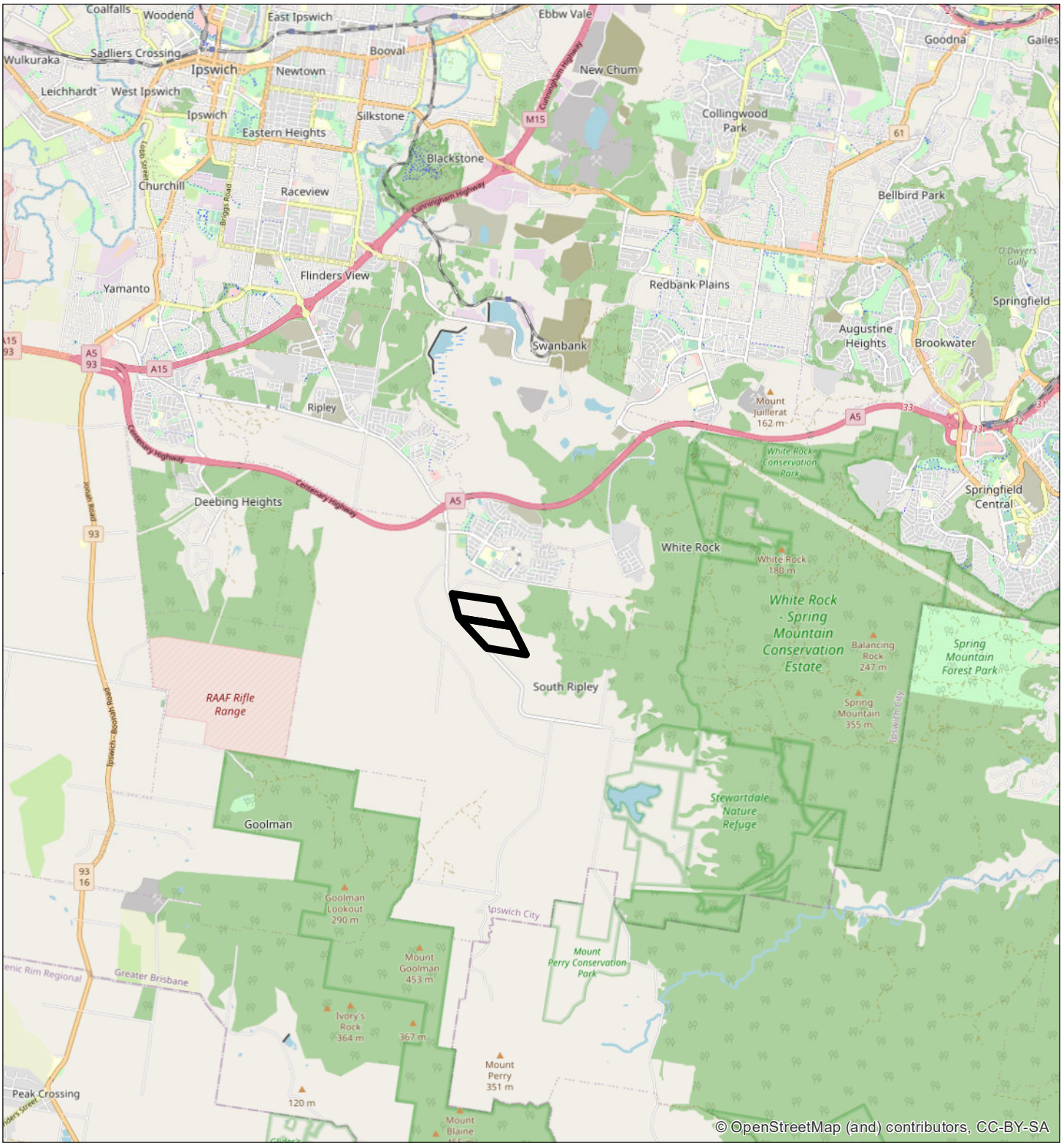
1.4. Purpose

When a person proposes to take an action (*i.e.,* a project) under the EPBC Act, a decision must be made on whether or not to make a referral to the Australian Government Environment Minister. The DCCEEW administers the EPBC Act and referral process. To assist the decision-making process, the DCCEEW significant impact guideline, along with other species-specific guidance material and published conservation advices informs proponents on actions that are considered likely to cause a significant impact on MNES and should therefore be referred for assessment under the EPBC Act.

Nine MNES are protected under the EPBC Act, being:

- world heritage properties;
- national heritage places;
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed);
- nationally threatened species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- nuclear actions (including uranium mining); and
- a water resource, in relation to coal seam gas development and large coal mining development.

An assessment has been completed to identify the potential for development of the referral area and potential impact to each of the nine MNES. Where a potential impact was identified, a more detailed evaluation was undertaken to determine the scale and type of impact. The Department has published additional referral guidelines for some MNES species and communities and these were considered, where relevant, as part of this review.



Legend

Site DCDB

Figure 1

Site Context

Stockland

File ref. 11081 E Figure 2 Site Context A
Date 1/09/2023
Project Ripley Road, South Ripley

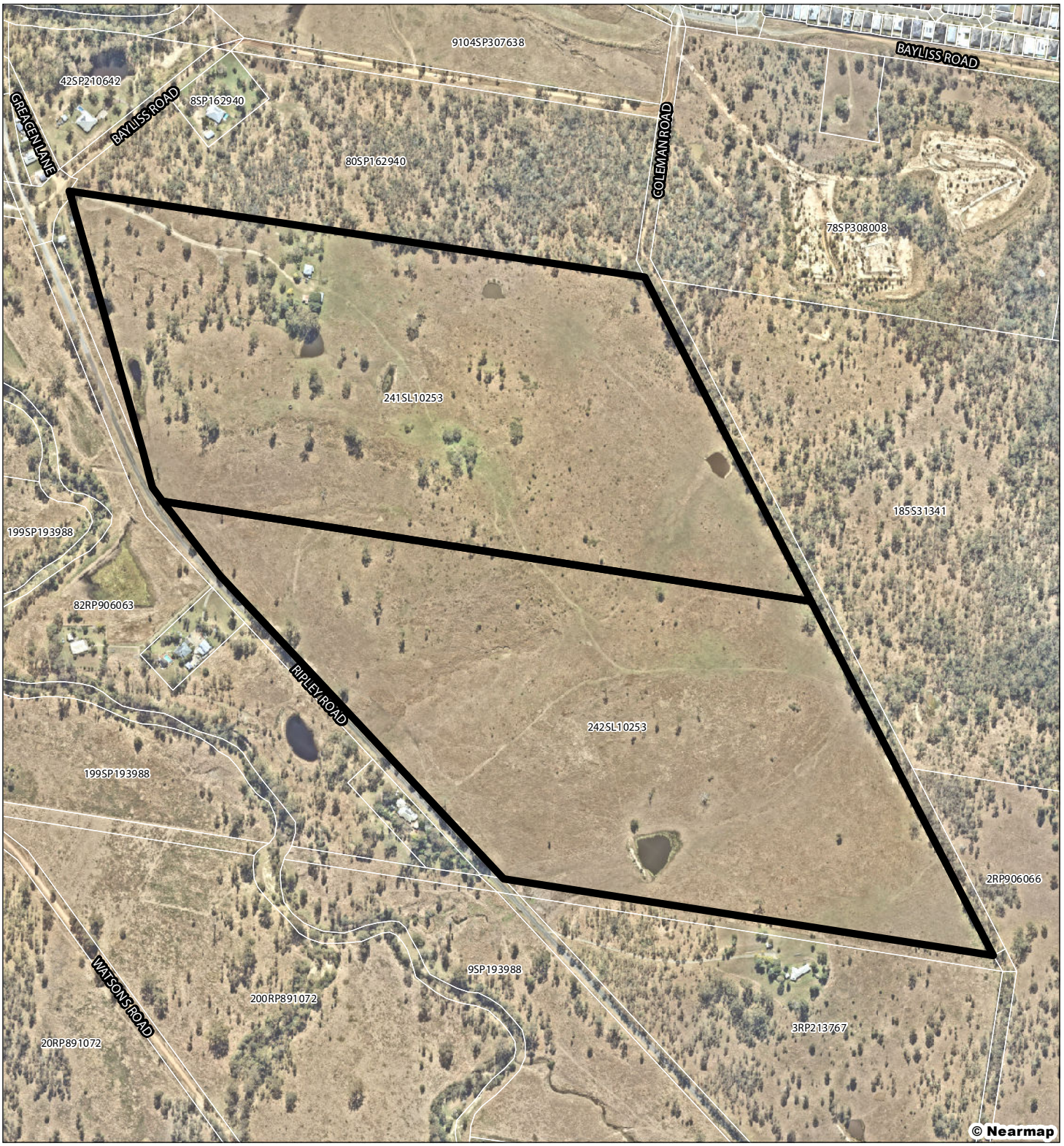
0 1 2 3 4 km

N

Scale (A4): 1:100,000 [GDA 2020 MGA Z56]

saunders havill group

Layer Source: © State of Queensland 2023



Legend

- Site DCDB
- Qld DCDB

Figure 2

Site Aerial

Stockland

File ref. 11081 E Figure 1 Site Aerial A
Date 1/09/2023
Project Ripley Road, South Ripley

0 100 200 300 m

N

Scale (A4): 1:8,000 [GDA 2020 MGA Z56]

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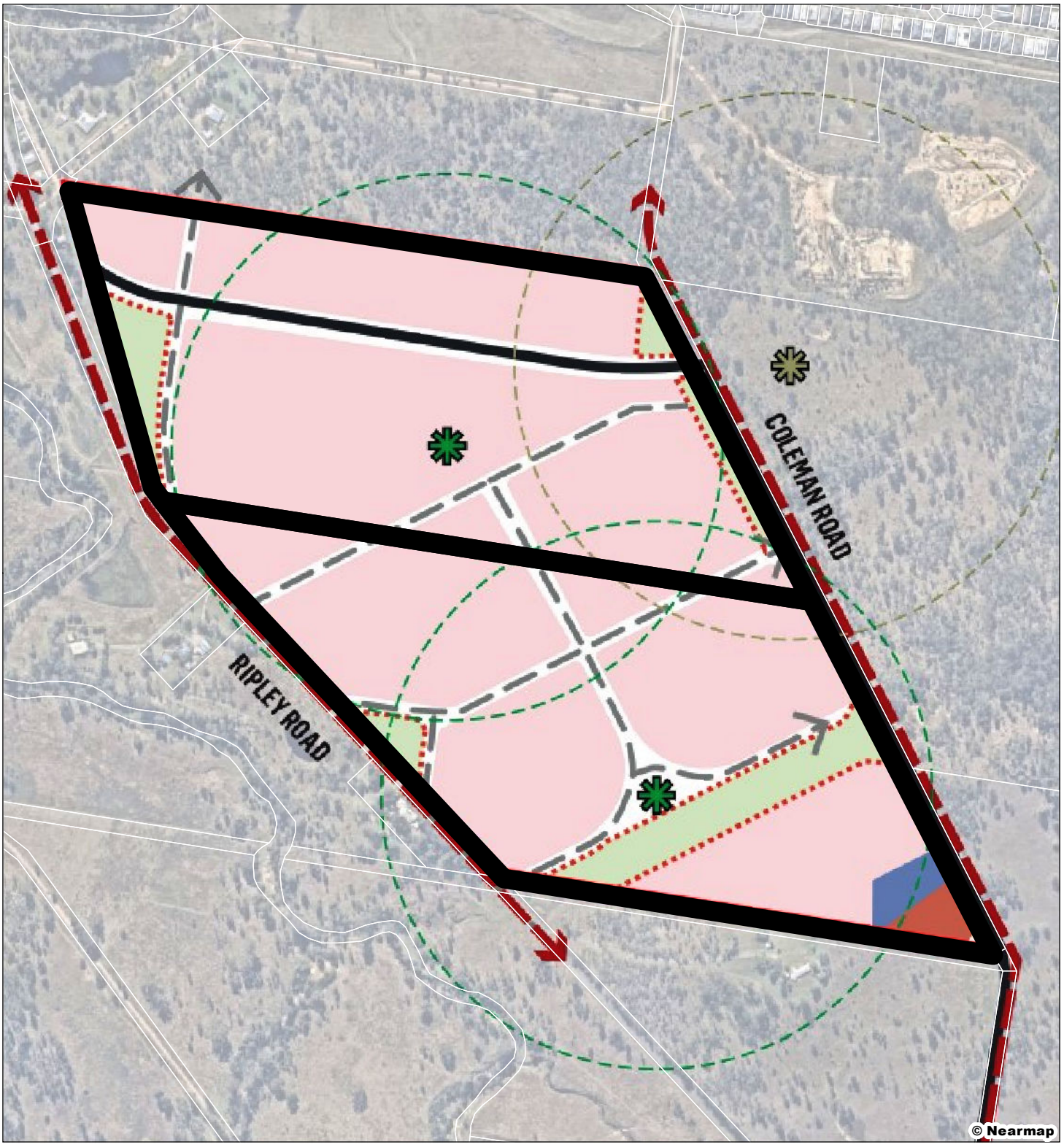
Layer Source: © State of Queensland 2023



Legend

- Site DCDB
- Qld DCDB

Land Use Zones

- Low Density Residential
- Local Linear Park and Stormwater Management
- Emergency Services
- Commerical Node
- Arterial/Sub-arterial Road Linkages
- Other Linkages (Onsite)
- Other Linkages (Offsite)

Figure 3

Proposed Development

Stockland

File ref. 11081 E Figure 3 Proposed Development A
Date 1/09/2023
Project Ripley Road, South Ripley

0 100 200 300 m

N

Scale (A4): 1:8,000 [GDA 2020 MGA Z56]

saunders havill group

Layer Source: © State of Queensland 2023

2. Commonwealth Legislation and Policy

2.1. *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) establishes a requirement for Commonwealth environmental assessment and approval for actions that are likely to have a significant impact on any MNES protected under the EPBC Act, including:

- World heritage properties;
- National heritage places;
- Wetlands of international importance (listed under the Ramsar Convention);
- Listed threatened species and ecological communities;
- Migratory species protected under international agreements;
- Commonwealth marine areas;
- The Great Barrier Reef;
- Nuclear actions (including uranium mines); and
- A water resource, in relation to coal seam gas development and large coal mining development.

Other matters protected under the EPBC Act, include:

- The environment, where actions proposed are on, or will affect Commonwealth land and the environment; and
- The environment, where Commonwealth agencies are proposing to take an action.

When a proponent proposes to take an action that they believe may need approval under the EPBC Act, they must refer the proposed action to the Australian Government Minister for the Environment (the Minister). The purpose of the referral is to determine whether or not a proposed action is a 'controlled action' and thereby requires approval under the EPBC Act. If the Minister determines that a proposed action is a 'controlled action', it would then proceed through the Commonwealth assessment and approval process.

2.1.1 Significant Impact Guidelines 1.1.

The purpose of these guidelines is to assist any person who proposes to take an action to decide whether or not they should submit a referral to the Department for a decision by the Minister on whether assessment and approval is required under the EPBC Act.

3. Assessment Methodology and Process

3.1. Desktop analysis

Prior to the commencement of field surveys, a desktop analysis was conducted of Commonwealth, State and Local environmental databases and overlay mapping to identify potential MNES and included the following:

- Commonwealth MNES protected under the EPBC Act on and around the site using the protected matters search tool with a 5 km radius (**Appendix A**);
- *Nature Conservation Act 1992* (NCA) listed threatened species on and around the site using the wildlife online database search tool with a 5 km radius (**Appendix B**);
- Public environmental databases including Atlas of Living Australia and BioMaps;
- State regulated vegetation management and vegetation supporting maps under the *Vegetation Management Act 1999* (VMA) including essential habitat mapping; and
- Local government records where MNES threatened species and communities are known to occur in the area. Where available this includes Ecological Assessment Reports, Fauna Spotter Catcher pre-clearance reports and return of operations reports from surrounding projects.

Additionally, a review of aerial photography history was undertaken via QImagery to assist with the broad delineation of vegetation communities and to determine historical patterns to local vegetation communities. This approach mirrors the early phases of the Queensland Government's *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland* (21 November 2022).

Initial desktop assessment identified seven (7) threatened ecological communities (TECs), twenty-four (24) threatened flora species, thirty-two (32) threatened fauna species and thirteen (13) migratory species as having the potential to occur within 5 km of the referral area (refer **Appendix A**). An initial assessment for the likelihood of occurrence was undertaken based on desktop survey to inform field survey methodology for target flora and fauna species and communities.

3.2. Field survey methodology

A field survey utilising the methods outlined in the following subsections was conducted to describe ecological values at and surrounding the referral area. Field surveys were undertaken during seasonal conditions generally favourable to the detection and identification of flora and fauna species. Field survey methods were determined based on target species and communities and EPBC Act listed species guidelines.

Field surveys were carried out on four separate occasions over June, July and August 2022 (refer **Table 1**)

Table 1: Field Survey Methods Summary

Date	Weather Conditions	Methods
22.06.2022	Clear, 3.2°C min - 23.6°C max, 0 mm rainfall	Vegetation assessments, diurnal searches
26.07.2022	Clear, 1.0°C min – 22.4°C max, 0 mm rainfall	Vegetation assessments, diurnal searches, targeted searches
1.08.2022	Overcast, 10.1°C min - 20.7°C max, 0 mm rainfall	Vegetation assessments, diurnal searches, targeted searches
2.08.2022	Clear, 8.2°C min - 23.8°C max, 0 mm rainfall	Vegetation assessments, diurnal searches, targeted searches

Bureau of Meteorology (Station Number 040816 and 040004) (BOM 2022)

3.2.1 Spot Assessment Technique (SAT) and Koala habitat surveys

Two (2) Spot Assessment Technique (SAT) surveys were conducted in areas with potential Koala food trees across the site. These were located within an area with a higher tree density in the north-west of the site. The aim was to assess Koala usage of the site.

Spot Assessment Technique surveys follow the methodology designed by Phillips and Callaghan (2011). It involves a single ecologist combing the ground under Koala food plant trees (or non-food plant trees if necessary) for a 1-metre radius around the trunk searching for scats. Each tree searched must be greater or equal to 100 mm diameter at breast height (DBH) and search of each tree continues for up to 2 minutes. The search can cease prior to the 2-minute limit if scats are detected. Thirty trees meeting the specifications are analysed during each SAT survey.

Two (2) scat meanders were also carried out to enable a broader assessment area increasing the chance of detection. Meanders involve walking a winding transect and checking under all trees meeting specifications encountered. Detailed records of each tree are not recorded unless scats are detected.

Two (2) SAT and Two (2) scat meanders occurred primarily because of the limited area of the site containing native vegetation available to deploy these survey methods. Additionally, because of the small area containing any actual native values it was determined that every ecological feature (tree, shrub, crown cover, dead stags, logs, dams, rock outcrops etc) could be observed, surveyed and recorded completely rather than extrapolation of sampling methods.

3.2.2 Observational survey for significant flora and fauna, habitat trees and biodiversity values

The referral area was entirely walked on multiple occasions to ensure all species (flora and fauna) were recorded and identified. Particular attention was paid to any threatened species that were listed as possibly occurring on or within the vicinity of the referral area and specific micro-assemblages which may support these threatened species. This included observations for vertebrate fauna present on or that may utilise the referral area, including faunal lists and significance status of species under the Commonwealth's EPBC Act including the JAMBA, CAMBA, ROKAMBA and the Bonn Convention, and Queensland's NCA.

The observational survey included identification of ecological features and values such as broad vegetation communities, fauna habitats, and ecological corridors. Identification and description of the fauna habitats present within the area included any habitat trees. Specific attention was paid to threatened flora and fauna species.

For the purposes of this report, a significant flora and fauna species has been defined as a species that is scheduled as 'critically endangered', 'endangered', 'vulnerable' or conservation dependent under the Commonwealth EPBC Act.

3.2.3 Scats, tracks and other traces search

Surveys for scats, tracks and other fauna traces were conducted throughout field surveys. Both predator and non-predator scats were sought during all searches. Specific search efforts were made to locate the presence of Koalas or evidence of their occurrence on the subject lands and the local area. In addition, particular attention was paid to the identification of potential dens, scats and tracks for invasive species, such as European Red Fox and domestic cats, to identify predator-prey interactions and understand existing impacts within the referral area.

3.2.4 GPS tree Plot

A tree plot survey was conducted across the development site on 1 and 2 August 2022 to locate and describe the vegetation values, namely the native mature tree specimens and those considered to contain habitat features. A handheld GPS device (Trimble) was used to record locations (accuracy ±1 m), and the following parameters of each tree specimen were recorded:

- tree species, via a combination of observations of the gum nuts, buds, leaves, bark and growth form;
- diameter of the trunk of the tree measured using the standard method of Diameter at Breast Height (DBH);
- height of the tree measured using a laser rangefinder with three-point measurement capability (inclinometer);
- canopy spread;
- health assessment (canopy, trunk); and
- habitat values (for example, presence and/or number of hollows, nests, termites, scratches and scats).

The Tree Protection Zone (TPZ) of the tree was calculated using the formula outlined in Australian Standard AS4970-2009 – Protection of Trees on Development Sites (TPZ = DBH x 12). A TPZ should not be less than 2 metres (m) and no greater than 15 m (except where crown protection is required). Additionally, the Structural Root Zone (SRZ) was calculated for each plotted specimen using the measured DBH and the following formula:

$$\text{SRZ radius} = (\text{DBH} \times 50)\ 0.42 \times 0.64.$$

3.2.5 Fauna movement barrier and contextual assessment

A combination of contemporary aerial imagery, locality knowledge and field inspection can assist in understanding if there are barriers to fauna movement in the landscape. Once the aerial imagery is interrogated, location(s) for inspection are selected (typically roads) and barriers identified.

3.3. Likelihood of Occurrence Assessment

The likelihood of occurrence assessment was based upon publicly available species records and/or other information sources, such as field guides and web-based species profiles, including but not limited to:

- Australian Government's *Species Profile and Threats Database* (SPRAT) for the threatened species and ecological communities listed under the EPBC Act; and
- Queensland Government's *Department of Environment and Science* (DES) threatened species website.

The likelihood of occurrence assessment was informed by desktop assessment and field survey results, including an appreciation and understanding of the species habitats within the referral area. The assessment adopts a two-tiered approach; the first based on desktop analysis and the potential of occurrence and the second based on a combination of desktop and field survey to determine the likelihood of occurrence.

The likelihood of threatened species and ecological communities occurring in the referral area has been assessed against the criteria outlined in **Table 2**.

Table 2: Likelihood of occurrence assessment criteria

Likelihood of occurrence	Assessment criteria
Unlikely	No previous records of the species within the locality and one or more of the following criteria is met: • Not previously recorded on the referral area and surrounds and the referral area is beyond the current known geographic range; or • Dependent on specific habitat types or resources that are not present on the referral area; or • Considered extinct in the wild.
Low	No previous records of the species within the locality and one or more of the following criteria is met: • Site and local connectivity contains marginal habitat excluding suitable/critical habitat attributes; • Lack of recent records exist in a regional context (use 1980 as a delineation); or • Potential for vagrant or individual of the species to survive short-term;
Moderate	Species previously recorded within the locality and one or more of the following criteria is met: • Previously recorded in proximity to the referral area (*i.e.,* vagrant individuals); or • Potential habitat typologies or resources are present on the referral area.
High	Species previously recorded within the locality and one or more of the following criteria is met: • Previously recorded on the referral area; • Dependent on habitats or habitat resources that are available on the referral area; or • Suitable habitats are available on the referral area that are capable of supporting a resident population or individuals of the species.
Known	Flora species or ecological community positively identified during field surveys within the referral area. Fauna species positively recorded during field surveys within the referral area or adjacent habitats.

3.4. Study Limitations

The ecological assessment involves a combination of desktop assessments and field investigations. The likelihood of occurrence assessment has relied upon database searches and publicly available information that relates to the referral area and broader locality. This information was cross-checked and verified by internal experts at Saunders Havill Group who have an abundance of ecological knowledge in the SEQ region. Saunders Havill Group has directly completed field surveys, reporting and EPBC Act assessments on multiple projects within the local region and is able to consider contemporary changes to species listings and conservation advice in making this determination. Field surveys focussed on verifying the vegetation and essential habitat mapped by the State Government and flora and fauna surveys targeting threatened species identified by database searches.

The field surveys targeted those threatened species or communities which have either been previously recorded or predicted to occur in the locality, and as such were assessed as having a moderate or high likelihood of occurring on the referral area.

Fauna surveys utilised a combination of passive and active methods for detection, including, SATs, Scat meanders, visual identification and inferential evidence of habitat usage (e.g. scratches, scats, burrows, active nests etc). No physical trapping was conducted as part of the fauna surveys, as the target species and degraded habitat values in the referral area did not justify the need for such surveys. Nocturnal spotlighting surveys were not considered relevant to the referral area given the vast majority of the site is cleared paddocks with no trees and limited, sparsely distributed, hollow-bearing trees (refer **Section 4.2.3** for further discussion).

4. Results

4.1. Desktop Assessment Results

4.1.1 Landscape Context and Historical Aerial Imagery

The referral area is located in a landscape that has been subject to extensive modification for pastoral and agricultural practices resulting in a highly modified environment (refer to **Plan 1** for historical aerial imagery analysis). The site has been largely un-vegetated since 1948 and is periodically maintained as grassland paddocks to ensure the primary intent of the land being agriculture is maximised. Cattle agistment of the land was ongoing during site surveys. The site is mapped as Category X (non-remnant) vegetation under the Queensland Government's *Vegetation Management Act 1999* (VMA) as a result of on-going maintenance and an approved Property Map of Assessable Vegetation (PMAV 2006/010563). Notably, surrounding properties to the north and east were almost completely cleared of vegetation up to 1982, regrowth vegetation has been allowed to increase as reflected in the 2002 imagery. This is represented in the vegetation mapping and surrounding PMAV applications (refer **Figure 4).**

Connectivity within the broader area is limited by cleared paddocks, large-scale developments and highly trafficked roads. To the west of the site, Ripley Road is present with vegetation beyond having been largely cleared with only thin linear strips of vegetation adjacent to Bundamba Creek remaining. To the north, east and south are similarly sized rural residential properties with a mixture of Category X (non-remnant), Category C (high-value regrowth) and Category B (remnant) vegetation. The majority of surrounding properties have approved PMAV applications maintaining their current vegetation category.

The site itself offers very little safe connectivity values or ecological linkages for threatened species being a largely treeless environment and limited neighbouring vegetation (refer **Plan 2**). While vegetation cover is present within the local area, multiple development applications with local or federal approvals surround the site. The property to the east is earmarked for development which is currently under EPBC assessment (2021/9061). Further east, an approved development associated with the Providence Estate is present (2018/8347) and north-east a separate EPBC approval for the White Rock Estate is present (2014/7388). To the west, large lot properties also have EPBC applications one being decided as 'not a controlled action' (2014/7325) and the other currently under assessment (2020/8698) and approved (2015/7513). Further north, significant developments are present such as Ripley Valley State School and the Providence Estate. In addition, several properties that boarder the site to the north-west and south-east have local approvals under Ipswich City Council (refer **Plan 3** and **Plan 4**).

It is considered that the referral area offers no ecological linkages to the east due to a lack of vegetation within the property as well as proposed residential developments under a current EPBC referral. With reference to Koala, the *Australian National University Koala habitat assessment criteria and methods report 2022* states that *'Koalas regularly walk across the ground for tens or even hundreds of meters between trees*.' The site is bordered completely along the western boundary by Ripley Road, which is the largest and busiest road in the southern area of the Greater Ripley Priority Development Area. Additionally, Ripley Road has recently been assigned

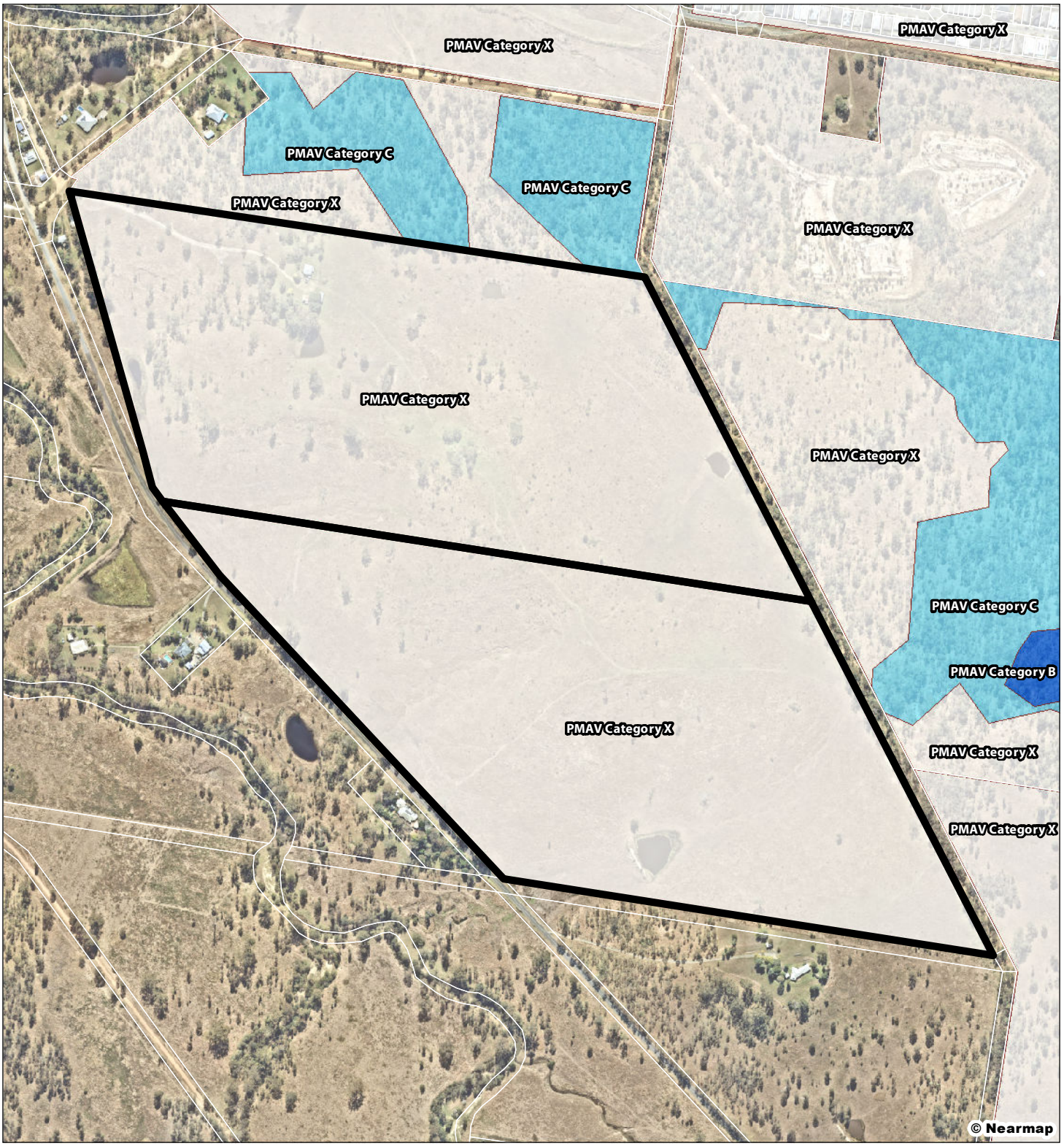
catalyst funding by the Queensland Government for upgrade to specifically unlock development in this region and alleviate South-East Queensland housing supply issues.

West to east the property is an average of 800m wide (wider in the northern portions) and contains no tree cover or even paddock trees beyond a small, clustered tree zone to the north. The land rises centrally to a cleared ridge, which means when standing on the western or eastern boundary vegetation beyond the site is not visible. North to south the land is 1.2km long with similar lack of vegetation providing any potential linkage. Scattered vegetation occurs on the land holding to the north of the project area with a mix of non-remnant and Category C (regrowth) communities. This land holding is not within the control of Stockland. This adjoining parcel is also 100% zoned Urban Living under the Greater Ripley Priority Development Area Development Scheme and has a live application with Ipswich City Council which proposes full residential development over the land.

While published literature may state that a dispersing koala 'could' traverse the cleared distances over this site considering all of the constraints within the local context suggest this is highly unlikely to occur given the abundance of more overt, safer and connected options in the broader landscape.

Furthermore, in considering the future context of the site the land is zoned entirely as 'Urban Living' and is centrally located within the Ripley Valley Priority Development Area Development Scheme with no environmental protection zoning on or adjacent to the site, indicating the area is not strategically designated to cater for corridor functionality at present and not intended to provide corridor functionality in the future (refer **Plan 5**). This is reflected in the surrounding development applications with EDQ / ICC and EPBC Act Approvals and Applications.

Photo set 1: Current Ripley Road, a significant road in southern Ripley Valley PDA (top)
The referral area as seen from Ripley Road highlighting complete lack of vegetation (bottom).



Legend

- Site DCDB
- Qld DCDB

PMAV Category

- Category B
- Category C
- Category X

Figure 4

Property Maps
Assessable Vegetation

Stockland

File ref. 11081 E Figure 4 PMAV Vegetation A
Date 1/09/2023
Project Ripley Road, South Ripley

0 100 200 300 m

N

Scale (A4): 1:8,000 [GDA 2020 MGA Z56]

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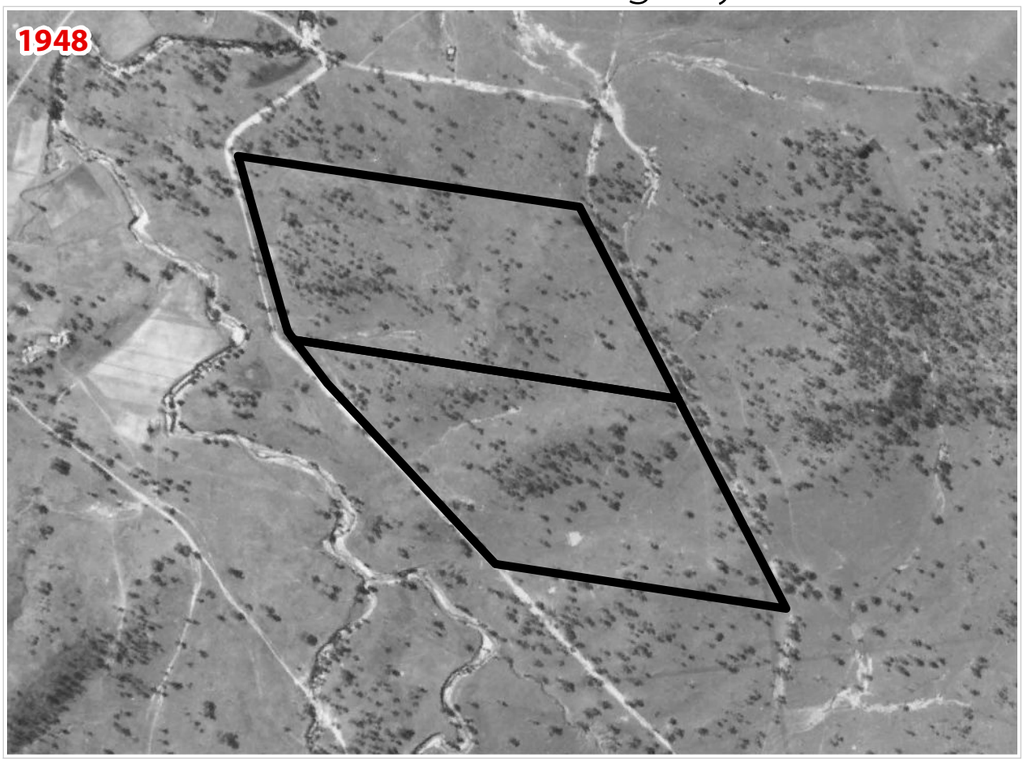
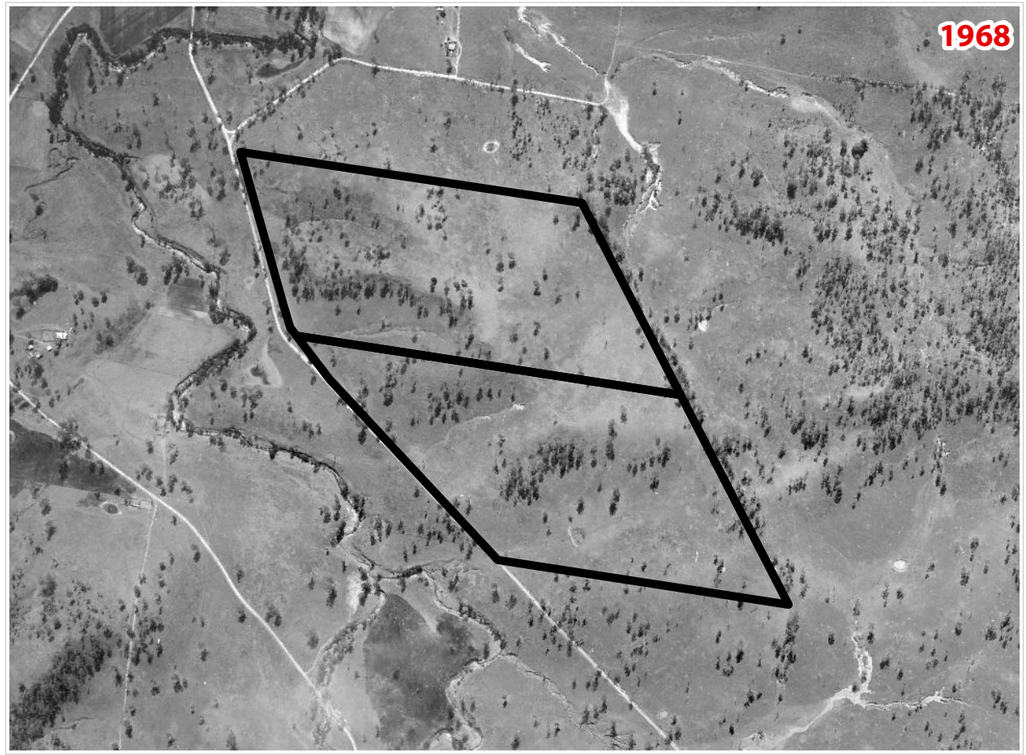
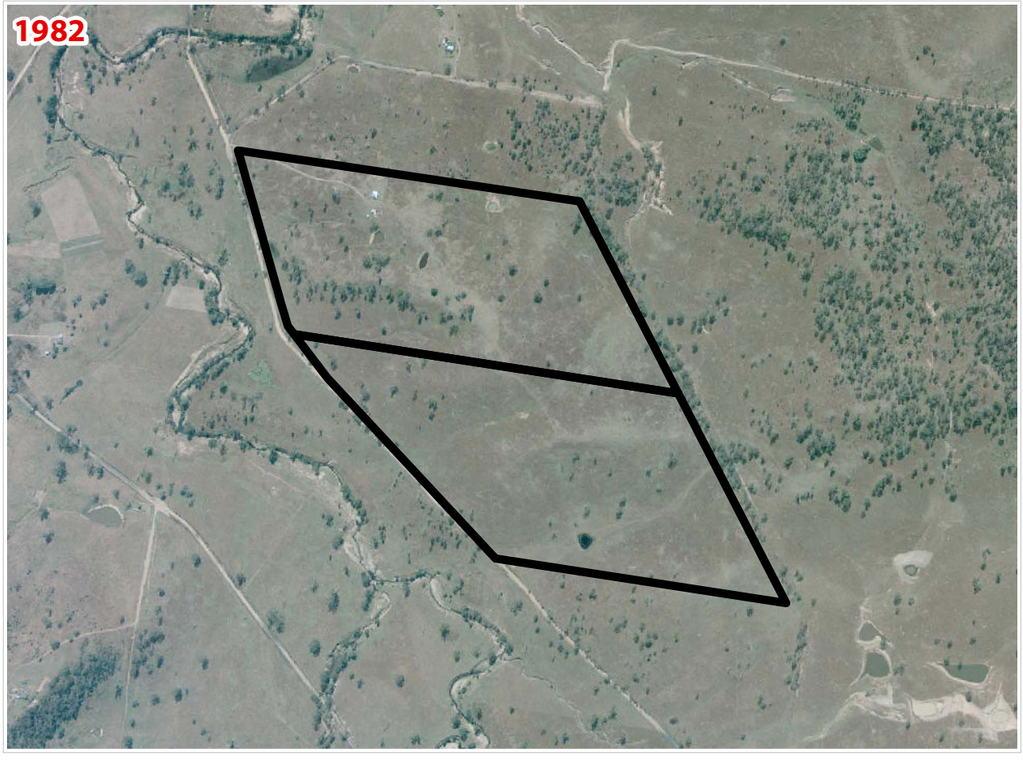
Layer Sources

1. Historical Aerial Imagery







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Legend

Site DCDB

Issue	Date	Description	Drawn	Checked
A	8/08/2023	Preliminary	TF	LB

0 100 200 300 400 500 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:15,000 @ A3

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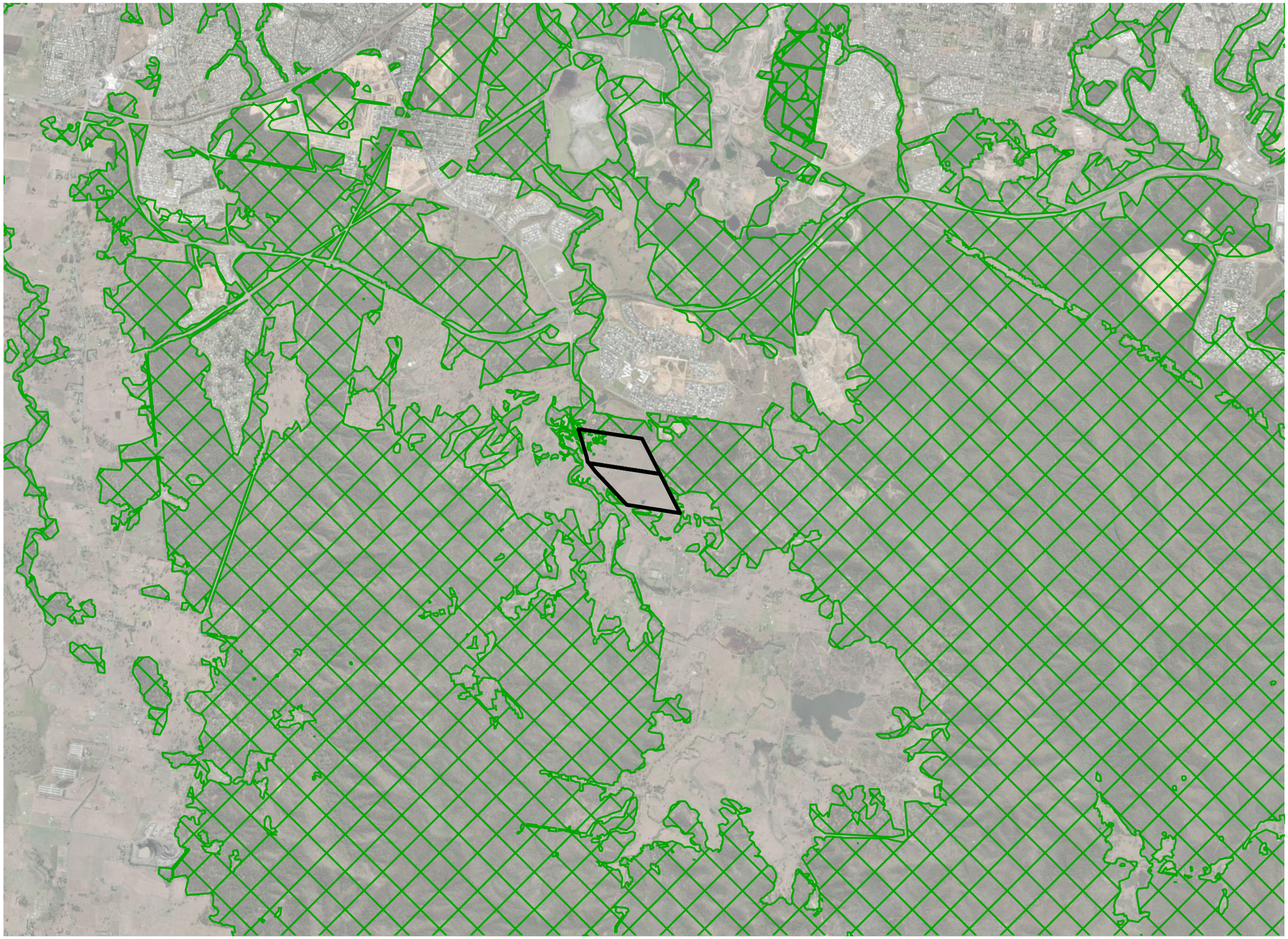
Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

8/08/2023 | 11081 E 01 Aerial History A

2. Fragmentation Analysis



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Legend

Site DCDB

Vegetation Cover

Issue	Date	Description	Drawn	Checked
A	1/09/2023	Preliminary	TF	LB

0 1 2 km

Transverse Mercator | GDA 2020 | Zone 56 | 1:50,000 @ A3

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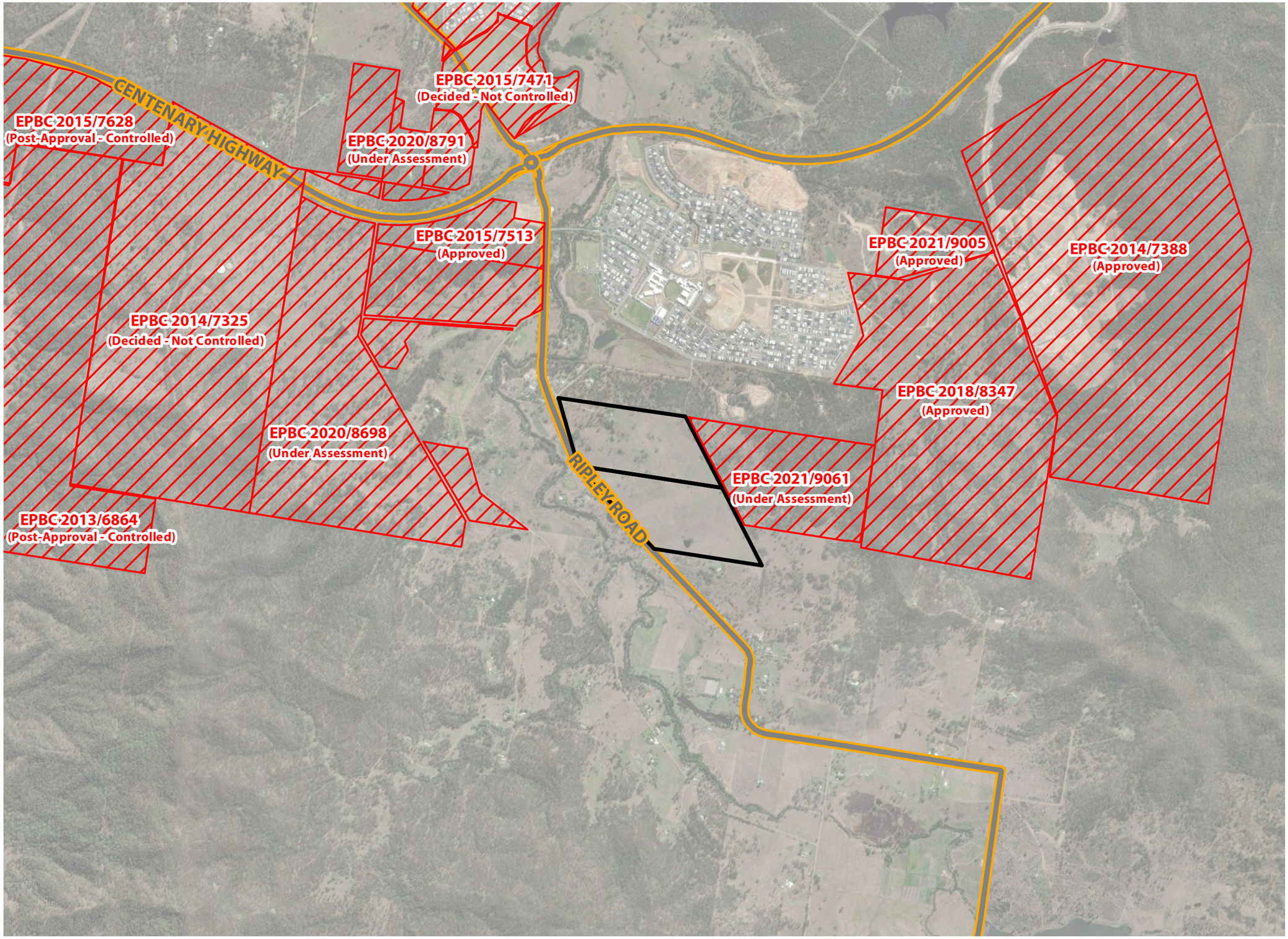
Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

1/09/2023 | 11081 E 02 Fragmentation A

3 Context Analysis



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Legend

- Site DCDB
- EPBC Referral Areas
- Major Roads

Issue	Date	Description	Drawn	Checked
A	1/09/2023	Preliminary	TF	LB

0 200 400 600 800 1,000 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:25,000 @ A3

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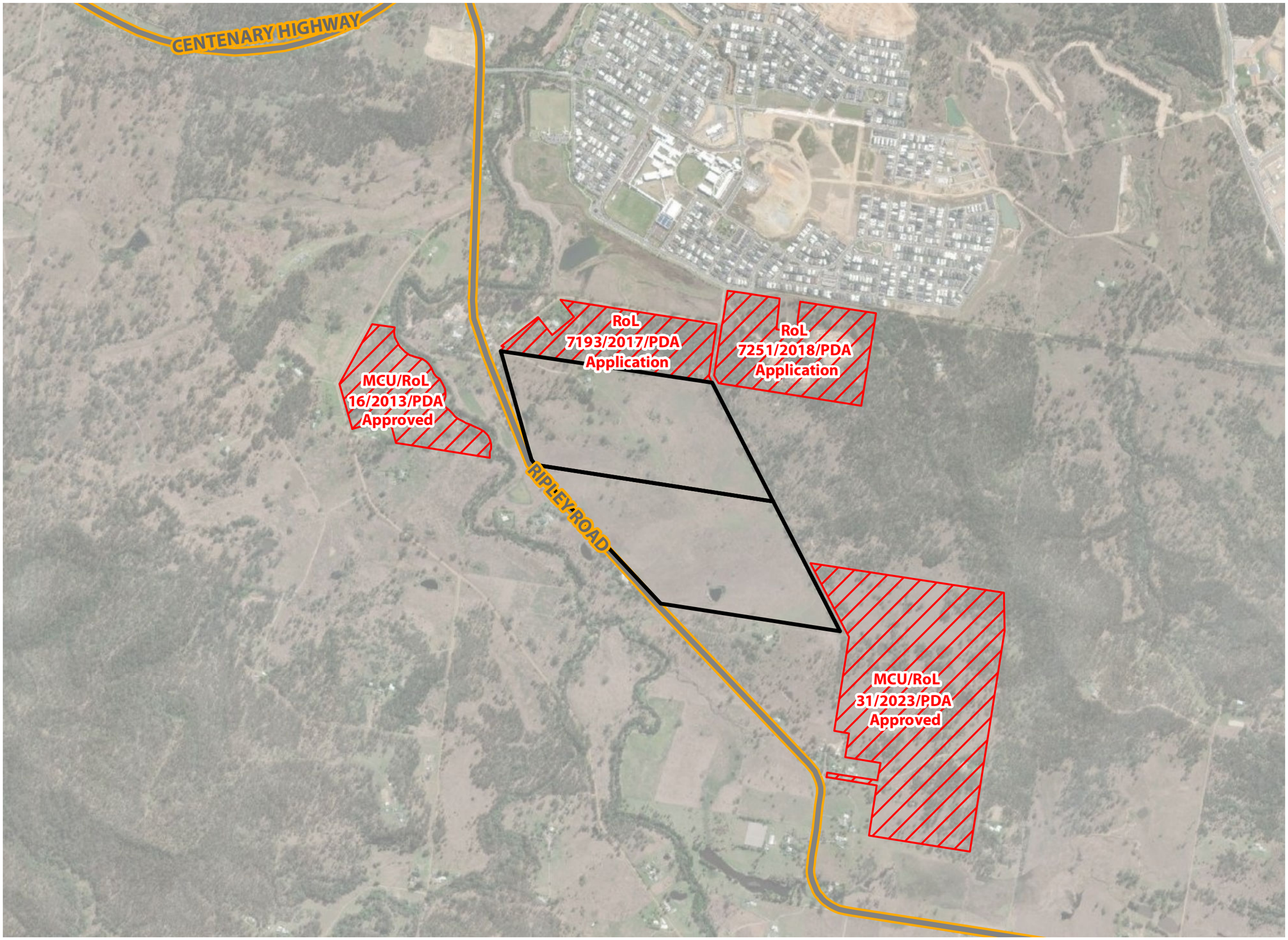
Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

1/09/2023 | 11081 E 03_1 Context Analysis A

4 Context Analysis (continued)



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Legend

- Site DCDB
- Ipswich City Council Development Applications
- Major Roads

Issue	Date	Description	Drawn	Checked
A	1/09/2023	Preliminary	TF	LB

0 100 200 300 400 500 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:15,000 @ A3

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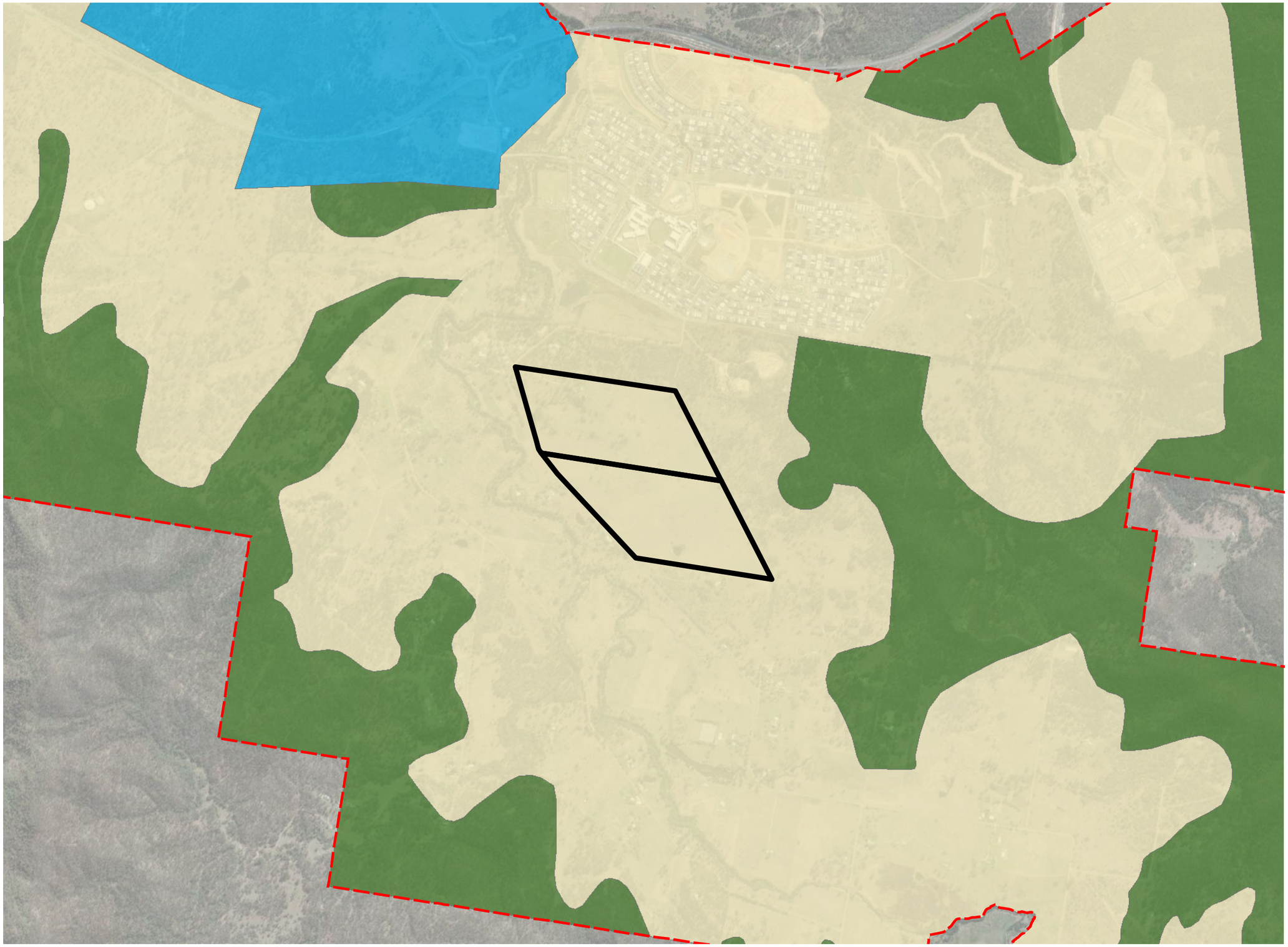
Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

1/09/2023 | 11081 E 03_2 Context Analysis A

5. Ripley Valley PD



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Legend

- Site DCDB
- Ripley Valley PDA Boundary

PDA Zoning

- Urban Core
- Urban Living
- Environmental Protection

Issue	Date	Description	Drawn	Checked
A	1/09/2023	Preliminary	TF	LB

0 100 200 300 400 500 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:20,000 @ A3

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Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

1/09/2023 | 11081 E 04 Ripley PDA A

4.1.2 Matters of National Environmental Significance

Based upon the database searches and the findings of the desktop assessment, MNES identified as being of potential relevance to the project include threatened flora and fauna species and migratory fauna species.

4.1.3 EPBC Act Threatened Ecological Communities

The Protected Matters Search Tool (PMST) (refer **Appendix A)** returned the following seven (7) threatened ecological communities (TEC), listed under the EPBC Act as having potential to occur within 5 km of the referral area:

- Coastal Swamp Oak (*Casuarina glauca)* Forest of New South Wales and South East Queensland ecological community
- Grey box-grey gum wet forest of subtropical eastern Australia
- Lowland Rainforest of Subtropical Australia
- Poplar Box Grassy Woodland on Alluvial Plains
- Subtropical eucalypt floodplain forest and woodland of the New South Wales and South East Queensland Bioregions
- Swamp Tea-tree (*Melaleuca irbyana*) Forest of South-east Queensland
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

The likelihood of occurrence for each TEC within the referral area, as presented in **Table 4**, referred to State Government Regional Ecosystem mapping within the locality and known distributions of the TECs, to identify those TECs with potential to occur in the referral area or recorded during field surveys. All TECs were identified as having low potential to occur based on site characteristics and vegetation mapping.

Table 3: Potential for the proposed action to impact MNES

MNES	Description	Relevance to Site	Assessment
World Heritage Properties	A 'declared World Heritage property' is an area that has been included in the World Heritage list or declared by the minister to be a World Heritage property. World Heritage properties are places with natural or cultural heritage values which are recognised to have outstanding universal value.	The closest World Heritage Site is the Gondwanan Rainforests of Australia of which is more than 120 km south of the site.	There is no potential for the proposed action to impact on a World Heritage Property. **Further assessment is not required.**
National Heritage Places	The National Heritage List contains places or groups of places with outstanding heritage value to Australia – whether natural, Indigenous or historic or a combination of these.	The closest National Heritage Place is Glass House Mountains National Landscape of which is approximately 90 km to the north of the site.	There is no potential for the proposed action to impact on a National Heritage Place. **Further assessment is not required.**
Wetlands of international importance (Ramsar)	A 'declared Ramsar wetland' is an area that has been designated under Article 2 of the Ramsar Convention or declared by the minister to be a declared Ramsar wetland under section 16 of the EPBC Act.	Moreton Bay is approximately 50 km east of the site.	There is no potential for the proposed action to impact on a Wetland of International Importance (Ramsar). **Further assessment is not required.**
Nationally threatened species and ecological communities	An action will require approval if the action has, will have, or is likely to have a significant impact on a species listed in any of the following categories: ▪ extinct in the wild ▪ critically endangered ▪ endangered, or	The PMR identified 69 listed threatened species and three (3) TECs with the potential to occur in the development area or within 5 km of the proposed action.	Based on the survey results, the following species are discussed in this assessment to ascertain if there will be a significant impact resulting from the action: 1. Koala 2. Grey-Headed Flying Fox 3. White-throated Needletail

MNES	Description	Relevance to Site	Assessment
	▪ vulnerable. An action will also require approval if the action has, will have, or is likely to have a significant impact on an ecological community listed in any of the following categories: ▪ critically endangered, or ▪ endangered.		**Further assessment against the significant impact criteria is required for these MNES. All other nationally threatened species and ecological communities were considered and concluded as unlikely to undergo a significant impact as a result of the proposed development – where required, this has been discussed in Section 7. Further assessment for those listed above is provided within the following sections.**
Migratory species	An action will require approval if the action has, will have, or is likely to have a significant impact on a listed migratory species.	The PMR identified 37 listed migratory species with the potential to occur in the development area or within 5 km of the proposed action.	It is considered unlikely that the development area has habitat critical for any migratory species. The nearest known habitat for migratory species is located approximately 3.3 km south in association with Bundamba Lagoon. Bundamba Lagoon contains Category B (remnant) RE 12.3.8 vegetation. RE 12.3.8 is described as a swamp community with characteristic species including Cyperus spp., Schoenoplectus pp. and Philydrum spp., with a wide range of sedges, grasses and forbs. The referral area does not contain habitat consistent with that found at Bundamba Lagoon. While the Latham's Snipe (*Gallinago hardwickii*) has been recorded within the local area and has been recorded utilising constructed dams, it is considered unlikely the species would utilise the referral area followed field surveys. **Further assessment against the significant impact criteria is not required – justification is detailed in Sections 4.2.9 and 4.2.4.**
Commonwealth marine areas	Marine protected areas are marine areas which are recognised to have high conservation value. Actions in or near	The action is not being undertaken in or adjacent to a Commonwealth marine area.	There is no potential for the proposed action to impact on Commonwealth Marine Areas

MNES	Description	Relevance to Site	Assessment
	marine protected areas, or other areas with high conservation value, have a greater likelihood of significant impacts on the Commonwealth marine environment.	The proposed action development area is located 50km, from the nearest Commonwealth marine area.	**Further assessment is not required.**
The Great Barrier Reef Marine Park	The Great Barrier Reef Marine Park is established under the *Great Barrier Reef Marine Park Act 1975*. The GBRMP is an area recognised to have high conservation value and an action will require approval if it is likely to impact the environment.	The GBRMP is more than 340 km north of the site	There is no potential for the proposed action to impact on the GBRMP. **Further assessment is not required.**
Nuclear actions	A nuclear action (including uranium mining) will require approval if it has, will have, or is likely to have a significant impact on the environment.	The proposed action does not comprise a nuclear action.	**This MNES does not apply.**
A water resource, in relation to coal seam gas development and large coal mining development	Under the EPBC Act, an action which involves a CSG development or a large coal mining development requires approval from the Australian Government if the action has, will have, or is likely to have a significant impact on a water resource.	The proposed action does not comprise a CSG development or large coal mine.	**This MNES does not apply.**

Table 4: Likelihood of occurrence of TECs within referral area

TEC	EPBC Act status	Desktop Potential of Occurrence
Coastal Swamp Oak (*Casuarina glauca)* Forest of New South Wales and South East Queensland ecological community	Endangered	**Low** The site is not mapped as containing any regional ecosystems associated with this threatened ecological community.
Grey box-grey gum wet forest of subtropical eastern Australia	Endangered	**Low** The site is not mapped as containing any regional ecosystems associated with this threatened ecological community.
Lowland Rainforest of Subtropical Australia	Critically Endangered	**Low** The site is not mapped as containing any regional ecosystems associated with this threatened ecological community.
Poplar Box Grassy Woodland on Alluvial Plains	Critically Endangered	**Low** The site is not mapped as containing any regional ecosystems associated with this threatened ecological community.
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	**Low** The site is not mapped as containing any regional ecosystems associated with this threatened ecological community.
Swamp Tea-tree (*Melaleuca irbyana*) Forest of South-east Queensland	Critically Endangered	**Low** The site is not mapped as containing any regional ecosystems associated with this threatened ecological community.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	**Low** The site is not mapped as containing any regional ecosystems associated with this threatened ecological community.

4.1.4 Threatened Flora Species

Database searches returned twenty-four (24) flora species, listed as threatened under the EPBC Act and/or NCA, as having been previously recorded or predicted to occur within 5 km of the referral area, as presented in **Appendix A** and **Appendix B.**

Based on the presence of species records within the locality and the habitats within the referral area, an assessment was conducted to determine those threatened flora species with potential to occur within the referral area. The desktop assessment identified two (2) threatened flora species had a 'moderate' potential to

occur on the referral area (refer **Table 5**). The detailed likelihood of occurrence assessment is presented in **Appendix C**.

Table 5: Likelihood of occurrence of flora species within referral area

Scientific Name	EPBC Act	NC Act	Desktop Potential of Occurrence
Notelaea ipsviciensis (Cooneana Olive)	Critically Endangered	Endangered	**Moderate** The referral area is mapped as containing entirely Category X (non-remnant) vegetation under the Queensland *Vegetation Management Act 1999* as a result of an approved PMAV (ref: 2006/010563). The site itself is largely cleared as a result of historical modification with the exception of a patch of scattered and isolated native trees in the north-west of the site. There have been no records of the species within 5km of the site with all records approximately 10km north. Regardless of limited records of this species in the area, a small area of potentially suitable habitat in the form open woodland communities with open canopy is likely present within the small cluster of vegetation in the north of the referral area, therefore the likelihood of the species to be present on-site has been assigned 'moderate.'
Plectranthus habrophyllus (Shaggy-leaved Plectranthus)	Endangered	Endangered	**Moderate** The referral area is mapped as containing entirely Category X (non-remnant) vegetation under the Queensland *Vegetation Management Act 1999* as a result of an approved PMAV (ref: 2006/010563). The site itself is largely cleared as a result of historical modification with the exception of a patch of scattered and isolated native trees in the north-west of the site. There are records of the species within 5km of the site, however a known population exists within White Rock Conservation Area, approximately 5km to the east. Suitable habitat in the form open woodland is likely present within the small, vegetated portion of the referral area, albeit limited, therefore the likelihood of the species to be present on-site has been assigned 'moderate.'

4.1.5 Threatened Fauna Species

Database searches returned twenty-six (26) fauna species listened as threatened under the EPBC Act and/or NCA as having been previously recorded or predicted to occur within 5 km of the referral area.

Based on the presence of species records within the locality and mapped habitats identified within the referral area, a likelihood of occurrence assessment was conducted to determine those threatened species with potential to occur within the assessment area. This assessment determined six (6) threatened fauna species

listed under the EPBC Act and/or NCA as having 'moderate' or higher potential to occur on or near the referral area. These species are outlined in **Table 6**below. All other threatened and/or migratory fauna species were assessed as having a 'low' potential to occur.

Table 6: Likelihood of occurrence of fauna species within referral area

Scientific Name	EPBC Act	NC Act	Desktop Potential of Occurrence
Anthochaera phrygia (Regent Honeyeater)	Critically Endangered	Endangered	**Moderate** The referral area is mapped as containing entirely Category X (non-remnant) vegetation under the Queensland *Vegetation Management Act 1999* as a result of an approved PMAV (ref: 2006/010563). Areas of mapped Category C (regrowth) vegetation are present adjacent to the northern and eastern borders. The site itself is largely cleared as a result of historical modification with the exception of a patch of scattered and isolated trees in the north-west of the site. There is only one (1) confirmed record of the Regent Honeyeater in 2019 within 5km of the site according to Atlas of Living Australia (ALA). However, as this species is listed as Critically Endangered the record is assigned a spatial uncertainty of 10km, therefore the exact location is not known. Queensland Wildnet does not record any sightings of this species within 5 km of the site. Regardless of limited records of this species in the area, potentially suitable habitat in the form of a small area potentially classed as a Eucalypt Woodland is likely present within the referral area, therefore the likelihood of the species to utilise the site opportunistically or as fly-over has been assigned 'moderate.'
Grantiella picta (Painted Honeyeater)	Vulnerable	Vulnerable	**Moderate** The referral area is mapped as containing entirely Category X (non-remnant) vegetation under the Queensland *Vegetation Management Act 1999* as a result of an approved PMAV (ref: 2006/010563). Areas of mapped Category C (regrowth) vegetation are present along the adjacent northern and eastern borders. The site itself is largely cleared as a result of historical modification with exception of an area of isolated and scattered trees in the north-west of the site. There have been no records of the species within 5km of the site with the majority of records to the west of Toowoomba. Regardless of limited records of this species in the area, potential suitable habitat in the form of Eucalypt Woodland is likely present within the referral area, therefore the likelihood of the species to utilise the site

Scientific Name	EPBC Act	NC Act	Desktop Potential of Occurrence
			opportunistically or as fly-over has been assigned 'moderate.'
Hirundapus caudacutus (White-throated Needletail)	Vulnerable	Vulnerable	**Moderate** The referral area contains largely treeless paddocks and a small patch of scattered and isolated trees in the north-west of the site. According to ALA there are several records of this species within 5km radius of the site. However, a review of these records indicate that the majority of these sightings are historical records (> 20 years old) from White Rock Conservation Area. Notable sightings include two records adjacent to the northern boundary of the site from 2020 and 2021. The species is highly mobile and recorded across a variety of habitat types. Nevertheless, it is considered that White Rock Conservation Area, approximately 5km to the east, provides more suitable habitat due to containing mature intact bushland. As the species has been recorded in the area the likelihood of the species to utilise the site or as fly-over has been assigned 'moderate.'
Lathamus discolor (Swift Parrot)	Critically Endangered	Endangered	**Moderate** Despite the site being mapped completely as Category X (non-remnant) vegetation and mostly cleared, pre-clear RE mapping indicates a Eucalypt dominated RE, with preferred foraging species *Eucalyptus tereticornis* (Forest Red Gum). There are no records of this species in the immediate area (5km), however, this species was sighted in 2019 in the Springfield Lakes area, approximately 11 km east of the site. There is some potential that this species could opportunistically forage within the referral area.
Phascolarctos cinereus (Koala)	Endangered	Endangered	**Moderate** The referral area is mapped as Category X (non-remnant) vegetation as the result of an approved PMAV. Pre-clear mapping of the area indicates RE12.9-10.7 across the majority of the referral area. Regional ecosystem 12.9-10.7 is comprised of species known as Koala habitat trees such as *Eucalyptus crebra* (Narrow-leaved Ironbark), and *Eucalyptus tereticornis* (Forest Red Gum). According to Queensland Wildnet Data, which dates back to the 1980s, fourteen (14) Koalas have been recorded within a 5 km radius of the site. A review of ALA and Biomaps indicated that these records vary from relatively recent (2019) to historical (1987). The closest recorded sighting of Koala to the referral area is from 2007 adjacent to Ripley Road. More recent records of Koala (within 7 years) are located

Scientific Name	EPBC Act	NC Act	Desktop Potential of Occurrence
			in White Rock Conservation Area 4.8 km east of the site; Deebing Heights 4km west and Goolman, forming part of Goolman Conservation Estate to the south. As the species is known to occur within the broader landscape as well as the presence of potential habitat within the referral area, the likelihood of occurrence has been assigned 'moderate.'
Pteropus poliocephalus (Grey-headed Flying-fox)	Vulnerable	-	**Moderate** The referral area is mapped as Category X (non-remnant) vegetation as the result of an approved PMAV. Pre-clear mapping of the area indicates RE12.9-10.7 across the majority of the referral area. RE12.9-10.7 indicates potential foraging habitat may be present within the referral area. The nearest roost is located 8.5 km north-west of the site in Yamanto, (479), with recent surveys in 2020 confirming GHFF present at the camp. The nearest roost of national significance is Inala (1219) approximately 20.2km north-east. As the species is known to forage in a variety of habitats, including open woodland areas present on-site, a desktop assessment of the likelihood of occurrence has been assigned 'moderate.'
Stagonopleura guttata (Diamond Firetail)	Vulnerable	Vulnerable	**Moderate** The referral area is mapped as Category X (non-remnant) vegetation as the result of an approved PMAV. Aerial imagery indicates the sites consists of scattered trees and dominated by grasses associated with pasture activities which may provide potential suitable foraging habitat for the species. There are no recorded sightings with 20km of the site and very few records of the species in Queensland. The majority of sightings are recorded within inland SEQ around Toowoomba/Warwick.

The detailed likelihood of occurrence assessment is presented in **Appendix C**.

4.1.6 Migratory Species

Database searches returned thirteen (13) migratory fauna species listened as threatened under the EPBC Act and/or NCA as having been previously recorded or predicted to occur within 5 km of the Referral area.

Based on the presence of species records within the locality and the habitats identified within the referral area, an assessment was conducted to determine those threatened species with potential to occur within the referral area. The assessment determined that only the Latham's snip had a 'moderate' liklihhof of occurrence based on desktop assessment (refer **Table 7**). No other threatened migratory fauna species listed under the EPBC Act and/or NCA were identified as having moderate or greater potential to occur in the referral area.

Table 7: Likelihood of occurrence of migratory fauna species within referral area

Scientific Name	Category	Desktop Potential of Occurrence
Latham's Snipe (Gallinago hardwickii)	Migratory Wetland Species	**Moderate** The species has been recorded within the locality of the referral area, most notably to the north and south-east. The species favours freshwater wetlands with areas of dense ground vegetation. The referral area contains several constructed dams and relatively recent, local records. The likelihood of occurrence assessments based on the desktop assessment has been assigned moderate.

The detailed likelihood of occurrence assessment is presented in Appendix C.

4.2. Ecological Survey Results

The results of the flora and fauna surveys, and the potential of occurrence, enables an understanding of the ecological constraints and potential impacts to MNES associated with the Project.

The results of the targeted vegetation, flora and fauna surveys is presented within the following sections. Refer to **Plan 6** for the field survey effort undertaken across the referral area and surrounding locality.

4.2.1 Ecological context of referral area

The referral area is located within Ripley Valley Priority Development Area (RVPDA), a landscape that has been subject to rapid landscape changes for industry and overall urbanisation within the past 10 years. The referral area has been subject to historical clearing for agricultural activities resulting in completely cleared paddocks over the entire land holding with the exception of a small area of scattered trees and juvenile regrowth in the north. Vegetation in the north-west contains a higher density of native trees species, however, aerial imagery and site surveys indicate this vegetation has also been subjected to historical modification, thus resulting in weeds and minimal native shrub cover. The existing area of trees coincides and is integrated with the original farm house, cattle yards, sheds, landscape and exotic species along with other farming infrastructure.

Despite the north-western portion of the site containing isolated and scattered ancillary and locally important Koala habitat trees (as defined in the Australian National University Koala habitat assessment criteria and methods report 2022), this area offers little opportunity for fauna movement given west of the site is largely cleared and immediately flanked by Ripley Road. Vegetation on-site does not provide, enhance or contribute to connectivity values within the broader South Ripley area (refer **Plan 2**) with the allotment clearly standing out as devoid of vegetation within aerial photos. Neighbouring properties to the south consist of regrowth vegetation of primarily juvenile specimens mixed with paddocks, houses and other farming infrastructure. Vegetation to the east consists of a mixture of Category X (non-remnant) and Category C (high-value regrowth) vegetation including areas of sparse vegetation and juvenile specimens, consistent with a small-scale rural setting. The majority of the properties surrounding the referral area hold approved PMAV applications for Category X (non-remnant) vegetation. In addition, the neighbouring property to the east proposes a residential development with a current EPBC referral (2021/9061). Thin linear strips of vegetation

are present along Bundamba Creek, approximately 150m to the west. To the north, a single rural property is present containing large patches of Category C (high-value regrowth) vegetation and PMAV Category X (non-remnant) vegetation. An active development application for residential allotments occurs on this allotment. Large developments are present further north including Ripley Valley State Secondary School.

4.2.2 EPBC Act Threatened Ecological Communities

As outlined in **Section 4.1.3**, The Protected Matters Search Tool (PMST) (refer **Appendix A**) returned the following seven (7) threatened ecological communities (TECs), listed under the EPBC Act, as having potential to occur within 5 km of the Referral area:

- Coastal Swamp Oak (*Casuarina glauca)* Forest of New South Wales and South East Queensland ecological community
- Grey box-grey gum wet forest of subtropical eastern Australia
- Lowland Rainforest of Subtropical Australia
- Poplar Box Grassy Woodland on Alluvial Plains
- Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions
- Swamp Tea-tree (Melaleuca irbyana) Forest of South East Queensland bioregions
- White Box-Yellow Box-Blakley's Red Gum Grassy Woodland and Derived Native Grassland

The potential of occurrence for each TEC within the referral area, as presented in **Appendix C**, referred to State Government Regional Ecosystem mapping within the locality and known distributions of the TECs to identify those TECs with potential to occur in the referral area or recorded during field surveys. The results of the likelihood of occurrence assessment determined that no TECs listed above have the potential to occur within the referral area.

Field verification surveys confirmed that no TECs are present in or adjoining the referral area.

4.2.3 Habitat Assessment and Vegetation Communities

The following section discusses the results of the field verification surveys of vegetation communities within the referral area.

As the entire referral area is mapped as Category X (non-remnant) vegetation as a result of an approved PMAV (ref:2006/010563), on-ground vegetation characteristics were utilised to delineate vegetation communities. Field surveys identified three (3) vegetation communities within the referral area defined as: (refer **Plan 7**).

1. Isolated and scattered ancillary koala habitat trees
2. Isolated trees and paddocks
3. Dams and waterbodies

The site is mapped as Category X (non-remnant) vegetation under the PMAV. The site is confirmed to be predominantly cleared with scattered isolated trees and tree clusters in limited areas, acacia regrowth and open paddocks. The exception to the cleared areas is an isolated patch of native trees in the north-west. Pre-clear RE mapping indicates the site was historically comprised of predominantly Of Concern RE12.9-10.7 as well as a small section of Endangered RE12.3.3 associated with Bundamba Creek in the north-west described below:

- RE12.9-10.7: *Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora leiocarpa, E. melanophloia woodland. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 13c) Vegetation communities in this regional ecosystem include: 12.9-10.7a: Eucalyptus siderophloia, Corymbia intermedia +/- E. tereticornis and Lophostemon confertus open forest. Occurs on Cainozoic and Mesozoic sediments in near coastal areas. Not a Wetland (BVG1M: 12a)*
- RE12.3.3: *Eucalyptus tereticornis +/- E. siderophloia and Corymbia intermedia open forest to woodland. Corymbia tessellaris, Lophostemon suaveolens and Melaleuca quinquenervia frequently occur and often form a low tree layer. Other species present in scattered patches or low densities include Angophora leiocarpa, E. exserta, E. grandis, E. latisinensis, E. tindaliae, E. racemosa and Melaleuca sieberi. Corymbia trachyphloia and/or C. citriodora subsp. Variegata may dominate on areas of Pleistocene alluvia. Eucalyptus seeana may be present south of Landsborough and Livistona decora may occur in scattered patches or low densities in the Glenbar SF and Wongi SF areas. Occurs on Quaternary alluvial plains and drainage lines along coastal lowlands. Rainfall usually exceeds 1000mm/y. (BVG1M: 16c)*

Where vegetation occurred within the referral area, species were generally consistent with pre-clear RE mapping 12.9-10.7 consisting of indicator species *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) with scattered *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus melanophloia* (Silver Leaf Ironbark) (refer **Photo set 2**). Trees on-site are generally confined to a cluster in the north-west which contained a sparse canopy. Following field surveys, vegetation within this area has been classified as 'Isolated and scattered ancillary koala habitat trees' providing the highest ecological value on-site. Vegetation within this area is consistent with historical and contemporary land-uses being a largely cleared subcanopy and shrub layer with disturbance leading to weeds present, predominantly *Lantana camara* (Lantana) and *Senecio madagascariensis* (Fireweed). A single residential dwelling is present in this area including several planted ornamental species including Ficus sp. and Jacaranda (refer **Photo set 3**). The trees in this location are interspersed with cattle yards, fencing, sheds, stables, driveways etc. The historical retention of isolated trees is associated with amenity and shade for the homestead area. Some regrowth species have seeded of the mature trees retained in this location.

A minor drainage feature was observed in the north-west of the site where the convergence of contours form into a narrow and incised gully running from east to west leading to a small, constructed dam on the western boundary of the site. No riparian vegetation was observed along the gully line and where tree species occurred they were consistent with the balance of the treed area in the north of the site, however in small areas mesic variations in the pasture grass cover suggested pockets of the gully line created a slightly moisture soil condition. In limited locations rock areas were observed in the north-west of the site where steeper contours grade down to Ripley Road. These areas were minimal and reflected by patches of small boulders rather than a rocky subgrade. No outcrop, caves or even crevices were observed and the feature was not assessed as

providing any unique ecological habitat value. Where vegetation in the form of scattered trees does occur on-site it directly correlates to areas dominated or at least supporting weeds such as *Lantana montevidensis* (Creeping Lantana).

Historical and ongoing land-uses have resulted in the majority of the site consisting of cleared open paddocks with either no trees or extremely isolated individuals. Evidence of regrowth vegetation was generally absent with the majority of the area consisting of a mixture of exotic and native pasture grasses including *Heteropogon contortus* (Black Spear Grass) and *Melinis repens* (Red Natal Grass) (refer **Photo set 4**). Following field surveys, vegetation within this area has been classified as 'Isolated trees and paddocks'

Several constructed dams were observed across the site with most at least partially filled with water (refer **Photo set 5**). However, water dependant macrophytes were limited to larger dams in the south and west of the site. No riparian vegetation was observed adjacent to any of the dams on-site.

The site contains isolated and scattered mature and semi-mature native trees within paddocks. Detailed site surveys recorded individual tree specifications across the referral area, including identifying and recording hollows. During the site survey 6 trees were identified with defined hollows. These are scattered around the property and along the cadastral boundary lines. One of these 6 trees is a completely dead stag centrally isolated within the paddock. There were a further 9 trees considered as having the potential to form hollows in the future due to very small observed crevices, residual broken limbs and round knotty growths, lightning strikes, cracking, fungi and other insect habitation. One of these 9 trees was also a dead stag. At the same time as surveying and recording the trees the area around the hollow was observed for rubbing or chewing evidence and the ground below each tree was investigated for splash marks, droppings, feeding debris, etc. No evidence of usage, even by common species was recorded during site surveys.

As shown in **Plan 6**, hollow-bearing trees are sparsely distributed across the referral area with no areas containing a high density of hollow-bearing trees. Furthermore, an area in the north-west of the referral area containing a marginally higher density of native trees and recognised as providing the highest ecological value on-site, relative to the balance of the site, contained no hollow-bearing trees. It is recognised that many threatened fauna species that utilise hollows (i.e Greater Glider and Yellow-bellied Glider) require an abundance of hollows for denning which are not present within the referral area, nor is there any available foraging or movement habitat. Given the extremely degraded nature of the site and the lack of suitable habitat for all species combined with the absence of active usage evidence through detailed daytime surveys it was considered redundant to carry out nocturnal spotlighting over the 6 trees sporadically located over the site containing hollows. It is likely that hollow-bearing trees within the referral are only utilised by common, highly mobile, avifauna, if at all.

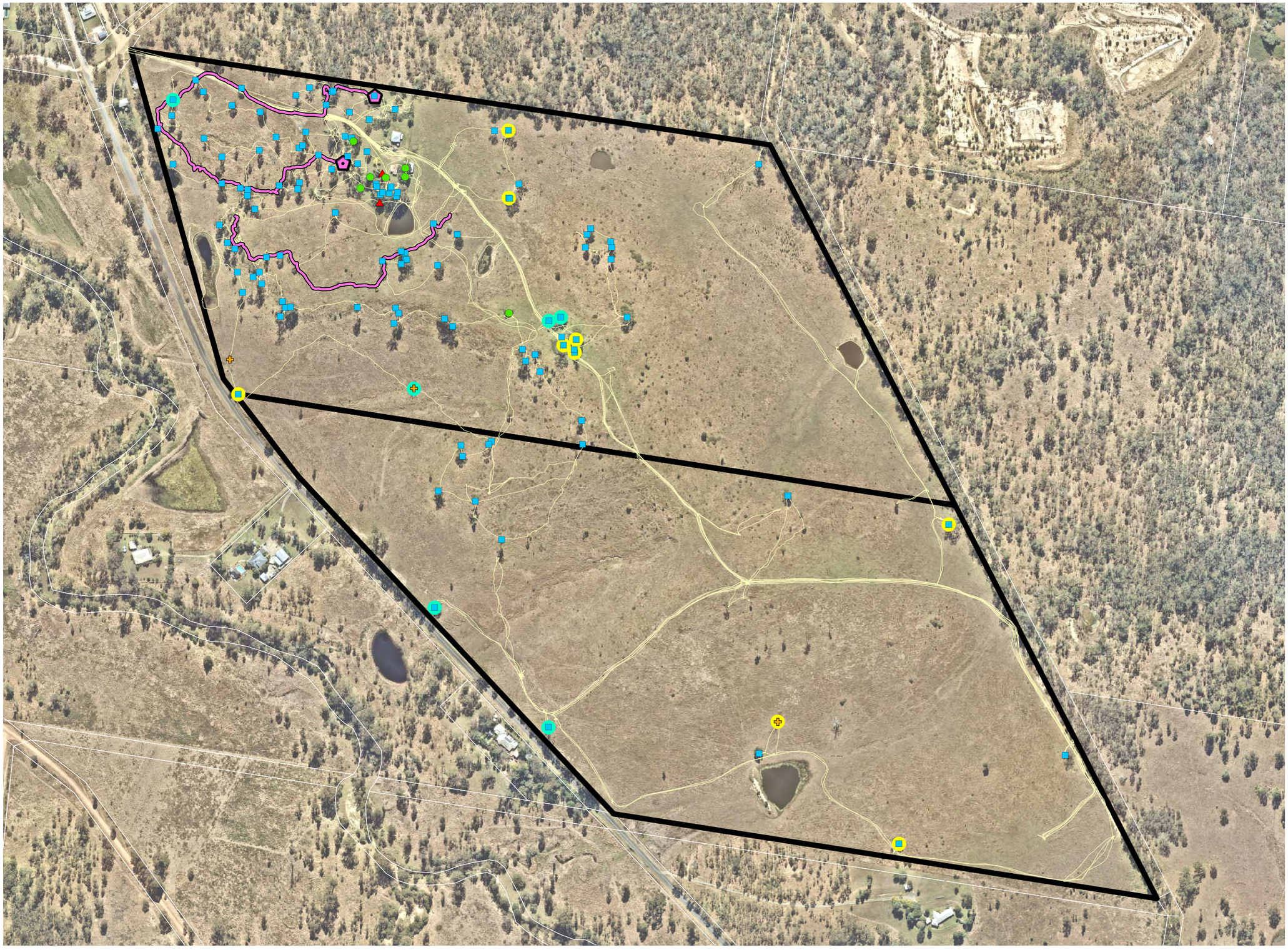
Photo set 2: 'Isolated and scattered ancillary koala habitat trees' in the north-west of the site.

Photo set 3: Ornamental species associated with a residential dwelling and farm infrastructure.

Photo set 4: 'Isolated trees and paddocks' across the vast majority of the site.

Photo set 5: Several constructed dams across the site.

6. Field Survey Effort



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

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Legend

- Site DCDB
- Qld DCDB
- SAT survey
- Scat Meander
- GPS Track Log

GPS Tree Plot (DBH > 300mm)

- Semi-mature/mature Koala habitat tree
- Native tree
- Dead/stag tree
- Introduced species/environmental weed
- Hollow
- Forming hollow

Issue	Date	Description	Drawn	Checked
A	28/09/2023	Preliminary	TF	LB

0 50 100 150 200 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:5,000 @ A3

saunders havill group

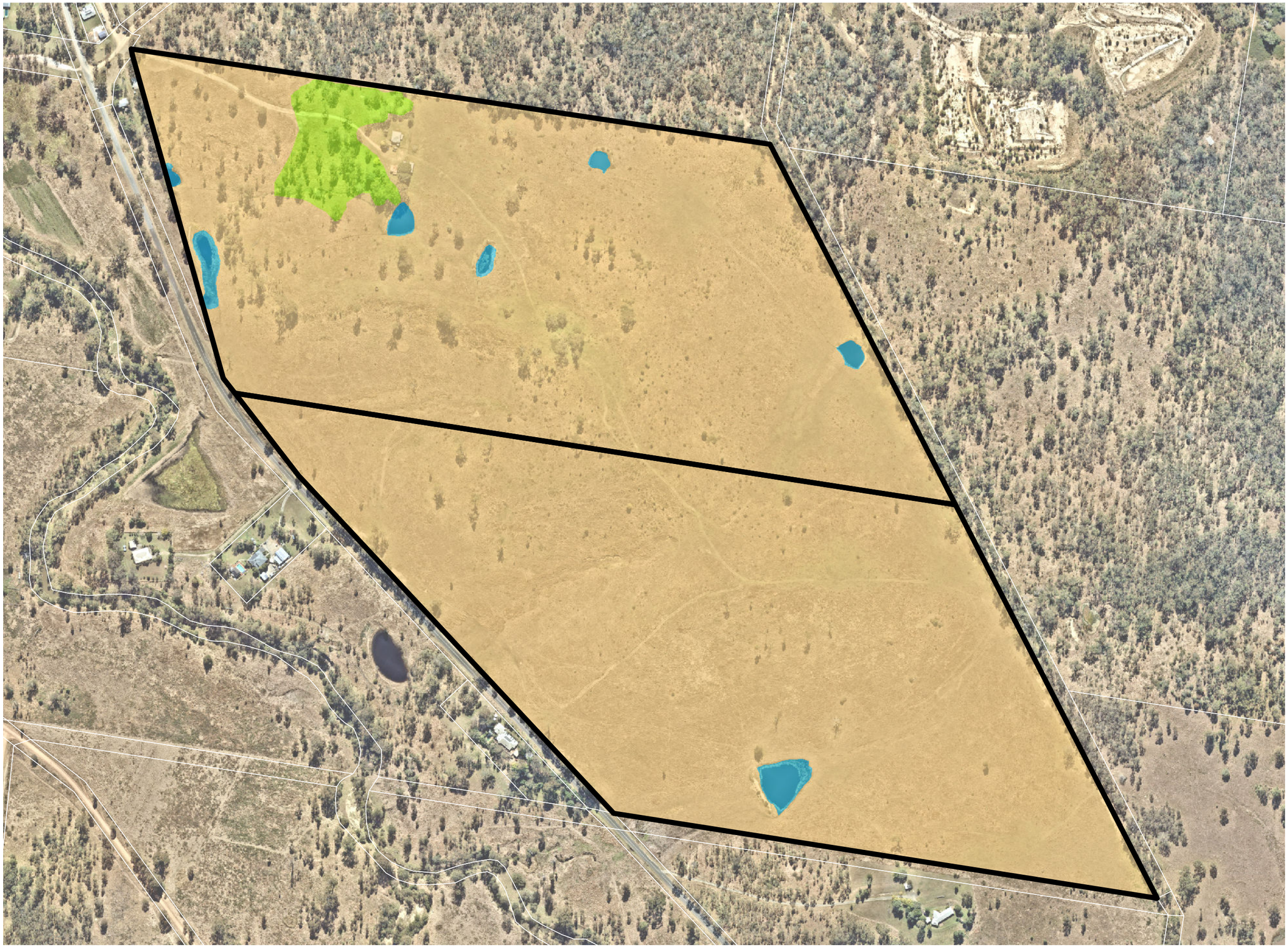
Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

*28/09/2023 | 11081 E 06 Field Survey Effort A_*

7. Vegetation Communities



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

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Legend

- Site DCDB
- Qld DCDB

Vegetation Communities

- **Isolated** trees and paddocks - 74.9 ha
- Isolated and scattered ancillary Koala habitat trees - 2 ha
- Dams - 0.9 ha

Issue	Date	Description	Drawn	Checked
A	1/09/2023	Preliminary	TF	LB

0 50 100 150 200 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:5,000 @ A3

saunders havill group

Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

1/09/2023 | 11081 E 06 Vege Communities A

4.2.4 Connectivity

The referral area generally lacks vegetation and is dominated by paddocks with scattered native trees. Connectivity value to the west and south is largely absent due to roads and low habitat value in the form of paddocks and scattered trees which are isolated from areas of intact bushland. Vegetation is present to the north and east of the referral area (refer **Plan 2**) although field surveys and vegetation mapping identified this area as predominantly regrowth specimens. In addition, the property to the east of the referral area is undergoing a current EPBC determination for a residential development (2021/9061) with several other applications within the Ripley Valley Priority Development Area (refer **Plan 3**).

At present, vegetation cover within the broader area of the site is moderate to high, particularly to the west. However, the site is bordered to the west by Ripley Road and largely a treeless environment with an area of isolated and scattered ancillary koala habitat trees in the north-west of the site. As a result, it is not considered that this vegetation on-site contributes to the overall connectivity value of the area or provides any strategic opportunities for ecological linkages. This outcome is reflected in the Queensland Government's absence of Matters of State Environmental Matters mapping and the Ripley Vally Priority Development Area Scheme mapping which assigns no environmental outcomes for the allotment.

4.2.5 SAT Surveys

Two (2) SAT surveys to assess Koala activity within the referral area were completed in accordance with Philips and Callaghan (2011) as well as two (2) scat meanders. Targeted surveys were located within an area of higher tree density identified as providing the highest ecological value on-site (refer to **Plan 6** for locations). Both SAT surveys scored a 0 out of 30 with no scats detected during scat meanders (refer to **Appendix D** for full SAT results). No evidence of Koala in the form of direct sightings or scats and scratch marks was detected within the site during these targeted surveys nor via incidental searches during tree plot or habitat surveys. Because of the relatively small area containing actual environmental values all trees were searched for evidence of fauna usage, specifically scat activity. No evidence was located during these surveys.

4.2.6 Flora Results

A total of sixty-seven (67) flora species were recorded within the vegetation communities within the referral area during field surveys, as listed in **Appendix E.** Of the sixty-seven (67) flora species recorded, thirty-seven (37) are native and thirty (30) species are considered to be non-native / introduced species.

Refer to **Appendix E** for the complete flora list and native / non-native designation.

No flora species listed under the EPBC Act nor NCA were recorded in or adjoining the referral area.

4.2.7 Fauna Results

A total of thirty-three (33) fauna species were recorded during field surveys, including thirty (30) birds, two (2) amphibians and one (1) mammal. No conservation significant fauna species or evidence of their activity were recorded during the field surveys.

A complete fauna species list is provided in **Appendix E.**

4.2.8 Threatened Fauna Assessment

Database searches returned twenty-seven (27) fauna species listened as threatened under the EPBC Act and/or NCA as having been previously recorded or predicted to occur within 5 km of the referral area. The desktop assessment determined six (6) threatened fauna species listed under the EPBC Act and/or NCA as having moderate or higher potential to occur on or near the referral area. A summary of targeted field assessments is found below.

Koala (*Phascolarctos cinereus*)

The Koala occurs in a range of environments containing eucalypt forest or woodland. While the referral area does contain Koala habitat trees within a small area, on-ground assessments delineated vegetation communities into 'Isolated Trees and Paddocks' across the majority of the site and 'isolated and scattered ancillary Koala habitat trees' within marginally denser patch of native trees in the north-west. SAT assessments and Scat meander surveys were utilised to detect evidence of Koala activity across the referral area, with a focus on the treed area in the north-west, and to determine the likelihood of occurrence on-site. Scat meander is a technique involving walking a winding transect and searching the base of Koala food trees for Koala scats, the trunk for scratch marks and the crown of the tree for Koala specimens. In addition, two (2) Spot Assessment Techniques (SAT's) were carried out which involves searching the base of the nearest 30 trees to a central point for scats. In addition to these methods every tree was searched during a full site tree survey. No evidence of Koala activity in the form of scats, scratch marks and direct observations were recorded within the referral area. The evidence suggests that the referral area is not currently utilised by Koalas which is reflected of the area containing large areas (74.9ha) of no habitat and only a small area (2ha) of marginal habitat for the species.

The majority of the referral area is not considered to contain habitat critical to the survival of the species. The exception to this is the small area of isolated and clustered trees in the north portion of the property. As noted some mature trees, including koala species have historically been retained in this location in conjunction with some landscape and exotic tree species providing shade and amenity around the house, sheds, cattle yards, stables and other localised farming infrastructure. Trees located in this part of the property could be argued as being connected to vegetation occurring on the land holding to the north. This land holding is both zoned fully for residential development and contains an active development application for this outcome. No trees are proposed for retention on this allotment. Within the northern patch of trees mapped as Isolated and Scattered Koala trees the mature specimens have been retained primarily as part of the landscape amenity around the house and supported by non-native plantings. The trees occur amongst other infrastructure which during more intensive agricultural phases would have been actively utilised by cattle, horses and other farm activities generally making these trees less attractive to threatened species when compared to the more vegetated communities to the north.

No sightings of Koala, nor evidence of Koala, was recorded within the referral area. A small area (2ha) has been mapped as providing trees which are consistent with koala habitat.

Grey-headed Flying-fox (*Pteropus poliocephalus*)

Pteropus poliocephalus (Grey-headed Flying-fox) requires foraging resources and roosting sites to persist. The species is known to use a wide variety of habitats including subtropical and temperate rainforests, tall sclerophyll forest and woodlands, heaths, swamps and also urban and agricultural areas where food trees have been cultivated.

The species is highly adaptive with its diverse native diet, which it can supplement with introduced species. It is known to forage within a variety of habitat areas as each resource does not produce food throughout the entire year. There are no observed roosts on-site, with the nearest roost located 8.5 km north-west of the site in Yamanto (479).

The nearest recorded sighting of the species is within the Yamanto camp with no records within 8km of the site. Despite the site containing potential foraging species, the general lack of vegetation across the referral area indicates it would be highly unlikely for the species to utilise vegetation on-site, particularly given the availability of large areas of suitable habitat within White Rock Conservation Area to the east.

The Isolated and Scattered Tree zone around the existing house and farm infrastructure is dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) which are both species listed as providing winter and spring flowering and fruiting phases and thus technically could be available to GHFF. The landscape plantings within the same zone also contain two large exotic fig trees which additionally could provide a forging resource. The small size, fragmented context and absence of supporting habitat attributes align these available foraging resources with the equivalence of a large rural residential back yard which is generally not considered to be habitat critical to the survival of the species.

No Grey-headed Flying-fox individuals were recorded during field surveys.

Regent honeyeater (*Anthochaera phrygia*)

The Regent Honeyeater mostly inhabits slopes of the Great Dividing Range, in areas of low to moderate relief with moist, fertile soils. It is most commonly associated with box-ironbark eucalypt woodland and dry sclerophyll forest, but also inhabits riparian vegetation such as She-oak (Casuarina spp.) where it feeds on needle-leaved mistletoe and sometimes breeds. Principally a canopy bird, it is reliant on select species of eucalypt and mistletoe which provide rich nectar flows. It sometimes utilises lowland coastal forest which may act as refuge when its usual habitat is affected by drought. It also uses a range of other habitats including remnant patches in farmland and urban areas, roadside reserves and travelling stock routes.

The site was confirmed to contain several winter flowering tree species which were flowering at the time of survey, including *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark). However, the site is highly modified and continually maintained as grazing paddocks with few native trees remaining. The site is mapped entirely as Category X (non-remnant) vegetation within only a small patch of isolated and fragmented native trees within the north-west of the site. As a result, the site lacks significantly large numbers of mature trees, high canopy cover and abundance of mistletoes.

During surveys, aggressive honeyeater species *Philemon corniculatus* (Noisy Friarbird) were recorded which further reduces the overall suitability of the site. Given the lack of suitable habitat on-site, it is considered

unlikely that the species would utilise scattered native trees within the north-west, therefore a further response to the significant impact guidelines for the species is not required.

No Regent Honeyeater individuals were recorded during field surveys

Swift Parrot (*Lathamus discolor*)

Swift Parrots are usually seen in small parties of up to 30 birds, or occasionally in flagger flocks (of several hundred birds) around sources of abundant food. They feed preferentially in the largest trees available due to their greater nectar reserves and on psyllid lerps, seeds and fruit. Commonly used lerp infested trees include Inland Grey Box (*Eucalyptus macrocarpa*), Grey-topped Box (Eucalyptus moluccana), Blackbutt (*Eucalyptus pilularis*), and Yellow Box (*Eucalyptus melliodora*). Favoured feed trees include winter flowering species such as Swamp Mahogany (*Eucalyptus robusta*), Spotted Gum (*Corymbia maculata*), Red Bloodwood (*Corymbia gummifera*), Forest Red Gum (*Eucalyptus tereticornis*), Mugga Ironbark (*Eucalyptus sideroxylon*), and White Box (*Eucalyptus albens*). In Queensland, winter flowering eucalypt species form a critical component of foraging habitat for the species.

The site was confirmed to contain winter flowering tree species which were flowering at the time of survey, predominantly *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark). However, the site is highly modified and continually maintained as grazing paddocks with few native trees remaining. The site is mapped entirely as Category X (non-remnant) vegetation within only a small patch of isolated and fragmented native trees within the north-west of the site. During surveys, aggressive honeyeater species *Philemon corniculatus* (Noisy Friarbird) were recorded which further reduces the overall suitability of the site. It is noted that there are no records of the Swift Parrot within a 5km radius of the site.

Given the general lack of vegetation on-site, the abundance of foraging habitat within White Rock Conservation Area and lack of sightings surrounding the site, it's considered unlikely that this species would utilise the site, therefore a further response to the significant impact guidelines for the species is not required.

No Swift Parrot individuals were recorded during field surveys

Painted Honeyeater (*Grantiella picta*)

The species inhabits mistletoes in eucalypt forests/woodlands, riparian woodlands of black box and river red gum, box-ironbark-yellow gum woodlands, acacia-dominated woodlands, paperbarks, casuarinas, callitris, and trees on farmland or gardens. The species prefers woodlands which contain a higher number of mature trees, as these host more mistletoes. It is more common in wider blocks of remnant woodland than in narrower strips.

The site is mapped entirely as Category X (non-remnant) vegetation with the vast majority of the site consisting of open treeless paddocks within only a small area of isolated and fragmented native trees in the north-west. As a result, the site lacks significantly large numbers of mature trees, high canopy cover and abundance of mistletoes associated with the preferred habitat for the species.

Field surveys did not identify the species on-site and there have been no records within 5km of the site. It is considered highly unlikely that the species would utilise the site given lack of suitable habitat, therefore a further response to the significant impact guidelines for the species is not required.

No Painted Honeyeater individuals were recorded during field surveys

White-throated Needletail (*Hirundapus caudacutus*)

The White-throated Needletail is a migratory species and is almost exclusively aerial which affects the ease of conventional habitat descriptions. Although they occur over most types of habitats, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. They also commonly occur over heathland, but less often over treeless areas, such as grassland or swamps. White-throated Needletails almost always forage aerially, primarily on insects, at heights up to 'cloud level', above a wide variety of habitats ranging from heavily treed forests to open habitats, such as farmland, heathland or mudflats. White-throated Needletails are known to roost in woodland and forest habitat, amongst canopy or in hollows. The species breeds in the northern hemisphere in wooded lowlands and sparsely vegetated hills, as well as mountains covered with coniferous forests.

The vast majority of the site consists of open treeless paddocks which is considered the least suitable habitat for the species with a portion of isolated fragmented native trees in the north-west. There are several records of the species within 5km of the site. Given the species is highly mobile and found across a range of habitat types the potential for significant impacts on the White-throated Needletail is considered in **Section 7.4**

No White-throated Needletail individuals were recorded during field surveys

4.2.9 Migratory Species Assessment

Database searches returned thirteen (13) migratory fauna species listed as threatened under the EPBC Act and/or NC Act, as having been previously recorded or predicted to occur within 5 km of the referral area. Following field surveys and the likelihood of occurrence assessment, no species were identified as having a moderate or greater likelihood of occurring on-site.

Latham's Snipe (*Gallinago hardwickii*)

The Latham's Snipe is migratory wetland bird that occurs in permanent and ephemeral wetlands. They usually inhabit open, freshwater wetlands with low, dense vegetation. Latham's snipe does not commonly aggregate in large flocks or use the same habitats as other migratory shorebird species.

The referral area does not contain true wetland environments favoured by the species with potentially suitable habitat confined to a series of constructed farm dams. These dams were dominated by pasture grasses as a result of historic and contemporary cattle grazing. While the species has been observed utilising constructed dams in the local area, it is more frequently observed within the vicinity of Bundamba Lagoon, a large waterbody with dense native wetland vegetation, providing suitable habitat approximately 3km south-east of the referral area. Following detailed field surveys over multiple days, the Latham's Snipe was not observed utilising dams on-site. It is considered unlikely that the species would utilise dams on-site given the

suitability of habitat associated with Bundamaba Lagoon to the south-east. The removal of low-value habitat within the referral areal is not considered to significantly reduce the availability of habitat within the local area as the size of Bundamba lagoon is capable of supporting a high number of individuals.

No migratory fauna species of conservation significance were recorded during the field survey.

A complete fauna species list is provided in **Appendix E.**

4.3. Risk of Impact

A potential of occurrence assessment was initially conducted prior to conducting field surveys to identify the MNES (threatened ecological communities and threatened and/or migratory species) of potential relevance to the referral area. The identified MNES were then the focus of the field survey program and effort.

After completing the field survey, a likelihood of occurrence (*i.e.,* a revised version of the potential of occurrence assessment) was undertaken based on field survey results and the confirmed vegetation communities and associated habitats contained with the referral area. The outcome of this two-staged likelihood of occurrence is presented in the following sections.

Those matters with a moderate or high likelihood of occurrence proceed to the impact assessment presented in **Section 5.**

Based upon the database searches and the findings of the desktop assessment, the only MNES identified as being of potential relevance to the project include threatened ecological communities, threatened flora and fauna species, and migratory fauna species.

4.3.1 EPBC Act Threatened Ecological Communities

The likelihood of occurrence for each TEC within the referral area, as presented in **Appendix C**, referred to State Government Regional Ecosystem mapping within the locality and known distributions of the TECs, to identify those TEC's with potential to occur in the referral area or recorded during field surveys.

The Protected Matters Search Tool (PMST) (refer **Appendix A**) returned the following seven (7) threatened ecological communities (TEC), listed under the EPBC Act, as having potential to occur within 5 km of the referral area:

- Coastal Swamp Oak (*Casuarina glauca)* Forest of New South Wales and South East Queensland ecological community
- Grey box-grey gum wet forest of subtropical eastern Australia
- Lowland Rainforest of Subtropical Australia
- Poplar Box Grassy Woodland on Alluvial Plains
- Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

The results of the likelihood of occurrence assessment determined that none of the above-mentioned TECs were likely to occur due to the absence of indicative Regional Ecosystems and species or habitat values on site typically associated with these TECs.

Field surveys confirmed no TECs were present within the referral area.

4.3.2 Threatened Flora Species

Database searches returned twenty-one (21) flora species, listed as threatened under the EPBC Act and/or NCA as having been previously recorded or potential to occur within 5 km of the referral area, as presented in **Appendices A & B**.

Based on the presence of species records within the locality and field surveys within the referral area, a revised likelihood of occurrence assessment was conducted to determine those threatened flora species with potential to occur within the referral area. The only species to be given a 'moderate' likelihood of occurrence, *Notelaea ipsviciensis* (Cooneana Olive) *and Plectranthus habrophyllus* (Shaggy-leaved Plectranthus), based on a desktop assessment was revised as 'low' risk of occurrence within the referral area following field assessments (refer **Table 8**).

Field surveys confirmed that no EPBC or NCA listed flora species were present within the referral area.

Table 8: Field Assessment Confirmed Likelihood of Occurrence – Threatened Flora

Scientific Name (common name)	EPBC	NCA	Desktop (Preliminary) Likelihood of Occurrence	Field Assessment Confirmed (Revised) Likelihood of Occurrence
Notelaea ipsviciensis (Cooneana Olive)	Critically Endangered	Endangered	**Moderate** The referral area is mapped as containing entirely Category X (non-remnant) vegetation under the Queensland *Vegetation Management Act 1999* as a result of an approved PMAV (ref: 2006/010563). The site itself is largely cleared as a result of historical modification with the exception of a patch of scattered and isolated trees in the north-west of the site. There have been no records of the species within 5km of the site with all records approximately 10km north. Regardless of limited records of this species in the area, suitable habitat in the form of open woodland communities with open canopies is likely present within the referral area, therefore the likelihood of the species to be present on-site has been assigned 'moderate.'	**Low** On-ground surveys confirmed the site to be predominantly cleared open paddocks dominated by pasture grasses, primarily *Heteropogon contortus* (Black Spear Grass). The north-western extent of the site includes an area of isolated and scattered native trees at a higher density when compared with the balance of the site. The canopy cover in this area would still be considered open. *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) were observed to be dominating this area with scattered *Eucalyptus tereticornis* (Forest Red Gum) proximal to a drainage line. Exotic weed species were observed in this area which has likely seen continued modification and disturbance for historical and on-going land-uses. The shrub layer was largely absent with weeds *Melinis repens* (Red Natal Grass) and *Lantana camara* (Lantana) present. There have been no records of the species within 5km of the site with all records approximately 10km to the north. The species was not recorded on-site during site surveys. Given the lack of sightings within the local area and comprehensive field surveys confirming limited suitable habitat there is a 'low' likelihood this species would occur within the site.
Plectranthus habrophyllus (Shaggy-leaved Plectranthus)	Endangered	Endangered	**Moderate** The referral area is mapped as containing entirely Category X (non-remnant) vegetation under the Queensland Vegetation Management Act 1999 as a	**Low** Field surveys confirmed on-ground habitat features to be confined to an area of isolated and scattered native trees in the north-west of the site with the majority of the site being

result of an approved PMAV (ref: 2006/010563). The site itself is largely cleared as a result of historical modification with the exception of a patch of scattered and isolated trees in the north-west of the site. There are records of the species within 5km of the site, being a known population within White Rock Conservation Area to the east. Suitable habitat in the form open woodland is likely present within the referral area, albeit limited, therefore the likelihood of the species to be present on-site has been assigned 'moderate.'

cleared open paddocks and scattered trees dominated by pasture grasses. Suitable habitat for this species is recognised as sandstone outcrops in open woodlands in shaded situations near vine forest. Field surveys identified a partially exposed rocky hill side and elements of open woodlands however no evidence of vine forest was observed and no sandstone outcrops. The site generally lacks flora diversity confined to scattered native trees and pasture grasses. Given the site has been extensively modified for rural uses, it is considered unlikely the species would be present on-site. In addition, records of this species are only present approximately 5km north-east of the site forming known populations within White Rock Conservation Area. The species was not recorded during field surveys.

Given the lack of sightings within the local area and comprehensive field surveys confirming limited suitable habitat there is a 'low' likelihood this species would occur within the site.

The complete likelihood of occurrence is provided in **Appendix C**.

4.3.3 Threatened Fauna Species

Database searches returned twenty-seven (27) fauna species, listed as threatened under the EPBC Act and / or NCA, as having been previously recorded or predicted to occur within 5 km of the referral area, as presented in **Appendices A & B**.

Based on the presence of species records within the locality and field surveys within the referral area, a revised likelihood of occurrence assessment was conducted to determine those threatened fauna species with potential to occur within the referral area (refer **Appendix C**). The assessment identified that only one fauna species, Koala, as having a 'moderate' likelihood of occurrence following field surveys. All other threatened fauna species have a revised 'low' likelihood of occurrence (refer **Table 9**).

No fauna species listed under the EPBC Act and NCA, or evidence of their activity was recorded during field surveys.

Table 9: Field Assessment Confirmed Likelihood of Occurrence – Threatened Fauna

Scientific Name (common name)	EPBC	NCA	Desktop (Preliminary) Likelihood of Occurrence	Field Assessment Confirmed (Revised) Likelihood of Occurrence
Anthochaera phrygia (Regent Honeyeater)	Critically Endangered	Endangered	**Moderate** Th The referral area is mapped as containing entirely Category X (non-remnant) vegetation under the Queensland *Vegetation Management Act 1999* as a result of an approved PMAV (ref: 2006/010563). Areas of mapped Category C (regrowth) vegetation are present adjacent to the northern and eastern borders. The site itself is largely cleared as a result of historical modification with the exception of a patch of scattered and isolated trees in the north-west of the site. There is only one (1) confirmed record of the Regent Honeyeater in 2019 within 5km of the site according to Atlas of Living Australia (ALA). However, as this species is listed as Critically Endangered the record is assigned spatial uncertainty of 10km, therefore the exact location is not known. Queensland Wildnet does not record any sightings of this species within 5 km of the site. Regardless of limited records of this species in the area, suitable habitat in the form of Eucalypt Woodland is likely present within the referral area, therefore the likelihood of the species to utilise the site opportunistically or as fly-over has been assigned 'moderate.'	**Low** Field surveys confirmed vegetation values on-ground being largely cleared open paddocks with scattered native trees remaining. Vegetation in the north-west of the site consist of native trees of a marginally higher density dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) with scattered *Eucalyptus tereticornis* (Forest Red Gum). Regent Honeyeaters are known to be outcompeted by aggressive bird species such as *Manorina melanocephala* (Noisy Miner) and Noisy Friarbird (*Philemon corniculatus)*. Field surveys observed Noisy Friarbirds to be utilising the vegetation on-site which may reduce potential for Regent Honeyeaters to opportunistically forage on-site. Vegetation on-site is considered to provide limited suitable habitat and foraging value for the species given the proximity of the site to an abundance of suitable habitat with a diversity of species within White Rock Conservation Area (approx. 5 km north-east). Overall, there is considered to be low potential that the Regent Honeyeater would utilise the vegetation on-site due to the limited foraging habitat, lack of eucalypt diversity, competition from other species and the presence of more suitable foraging habitat in the surrounding landscape. The species was not

				recorded on-site and is considered a 'low' likelihood of occurrence.
Grantiella picta (Painted Honeyeater)	Vulnerable	Vulnerable	**Moderate** The referral area is mapped as containing entirely Category X (non-remnant) vegetation under the Queensland *Vegetation Management Act 1999* as a result of an approved PMAV (ref: 2006/010563). Areas of mapped Category C (regrowth) vegetation are present along the adjacent northern and eastern borders. The site itself is largely cleared as a result of historical modification with the exception of a patch of scattered and isolated trees in the north-west of the site. There have been no records of the species within 5km of the site with the majority records to the west of Toowoomba. Regardless of limited records of this species in the area, suitable habitat in the form of Eucalypt Woodland is likely present within the referral area, therefore the likelihood of the species to utilise the site opportunistically or as fly-over has been assigned 'moderate.'	Field surveys confirmed vegetation values on-ground being largely cleared open paddocks with scattered native trees remaining. Vegetation in the north-west of the site consist of native trees of a higher density dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) with scattered *Eucalyptus tereticornis* (Forest Red Gum). The Painted Honeyeater inhabits mature trees with an abundance of mistletoes and in larger remnant blocks. While mistletoe was observed, this was extremely limited and sporadic across scattered trees. It is considered that vegetation on-site provides limited habitat for the species. In addition, there have been no records of the species within 5km of the site with very few records east of Toowoomba. Overall, there is considered to be low potential that the Painted Honeyeater would utilise the vegetation on-site due to the presence of limited foraging habitat, lack of recorded sightings and the presence of more suitable foraging habitat in the surrounding landscape, such as White Rock Conservation Area. The species was not recorded on-site and is considered a 'low' likelihood of occurrence.
Hirundapus caudacutus (White-throated Needletail)	Vulnerable	-	**Moderate** The referral area contains wooded areas including open forests and clearings. According to ALA there are several records of this species within 5km radius of the site. However, a review of these records indicate that the	**Moderate-Low** Field surveys confirmed vegetation values on-ground being largely cleared open paddocks with scattered native trees remaining. Vegetation in the north-west of the site consist of native trees of a higher density dominated by *Eucalyptus crebra*

			majority of these sightings are historical records (> 20 years old) from White Rock Conservation Area. Notable sightings include two records adjacent to the northern boundary of the site from 2020 and 2021. It is considered that White Rock Conservation Area to the east provides more suitable habitat due to containing mature intact bushland. As the species has been recorded over a variety of habitat types the likelihood of the species to utilise the site or as fly-over has been assigned 'moderate.'	(Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) with scattered *Eucalyptus tereticornis* (Forest Red Gum). The species is highly mobile and has been recorded above a variety of habitats. However, this species is less likely to be seen above treeless or cleared areas which the site primarily consists of. Vegetation on-site is considered low-value given lack of species diversity and fragmentation. It is anticipated that more suitable habitat is present in the broader landscape associated with White Rock Conservation Area. The lack of recent records in close proximity to the referral area indicates this species is unlikely to occur within the referral area during roosting periods due to absence of mature wooded areas. There is a moderate-low likelihood for it to be found in airspace foraging given the species high mobility and recorded presence within the area. The species was not observed on-site and considered a 'moderate-low' likelihood of occurrence.
Lathamus discolor (Swift Parrot)	Critically Endangered	Endangered	**Moderate** Despite the site being mapped completely as Category X (non-remnant) vegetation and mostly cleared, pre-clear RE mapping indicates a Eucalypt dominated RE, with preferred foraging species *Eucalyptus tereticornis* (Forest Red Gum). There are no records of this species in the immediate area (5km), however, this species was sighted in 2019 in the Springfield Lakes area, approximately 11 km east of the site. There is limited potential that this species could opportunistically forage within the referral area.	**Low** Field surveys confirmed the site as largely treeless with the exception of an isolated patch of scattered *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark) in the north-west of the site. These species are winter flowering species and therefore are considered the preferred foraging species. However, given the general lack of vegetation on-site, the abundance of foraging habitat within White Rock Conservation Area and lack of sightings surrounding the site, it's considered unlikely that this species would utilise the site for foraging requirements.

Phascolarctos cinereus (Koala)	Endangered	Endangered	**Moderate** The referral area is mapped as Category X (non-remnant) vegetation as the result of an approved PMAV. Pre-clear mapping of the area indicates RE12.9-10.7 across the majority of the referral area. Regional ecosystem 12.9-10.7 is comprised of species known as Koala habitat trees such as *Eucalyptus crebra* (Narrow-leaved Ironbark), and *Eucalyptus tereticornis* (Forest Red Gum). According to Queensland Wildnet Data, which dates back to the 1980s, fourteen (14) Koalas have been recorded within a 5 km radius of the site. A review of ALA and Biomaps indicate additional records varying from relatively recent (2019) to historical (1987). The closest recorded sighting of Koala to the referral area is from 2007 adjacent to Ripley Road. More recent records of Koala (within 7 years) are located in White Rock Conservation Area 4.8 km east of the site, Deebing Heights 4km west and Goolman 4.5k south-west, forming part of Goolman Conservation Estate. As the species is known to occur within the broader landscape as well as the presence of potential habitat within the referral area, the likelihood of occurrence has been assigned 'moderate.'	**Moderate-Low** Field surveys confirmed the presence of Koala habitat on-site of Non-juvenile Koala Habitat Trees (NJKHTs), *Eucalyptus crebra* (Narrow-leaved Ironbark), *Eucalyptus tereticornis* (Forest Red Gum) and *Corymbia citriodora* (Spotted Gum). Koala habitat trees are generally confined to the north-west with scattered specimens across the balance of the site. The vast majority of the site consists of cleared paddocks offering extremely limited habitat or connectivity value for koala. Field surveys indicated the site as containing fragmented ecological values with large portions subject to on-going maintenance for pastoral activities. Connectivity to vegetation in the north-west is limited by Ripley Road and cleared paddocks to the west. To the north, vegetation is present within a rural property which contains Category X (non-remnant) and Category C (high-value regrowth) under a PMAV. Further north exists significant developments including Ripley Valley State School. Vegetation to the east of the site is relatively intact albeit mapped predominantly as Category X (non-remnant) vegetation. Vegetation to the east is essential disconnected from an area of isolated and scattered native trees on-site by vast areas of cleared paddocks. South of the site consist of more regrowth/semi-cleared vegetation which again is disconnected by open cleared paddocks on-site.

				No evidence of Koala in the form of scats, scratch marks or direct observations was recorded during field surveys, suggesting Koalas are not utilising the site. It is considered that vegetation on-site (north-west) provides isolated and fragmented ancillary habitat trees with limited connectivity to surrounding vegetation as a result of vast open cleared paddocks. It is considered unlikely that koala would utilise the site. The lack of suitable habitat and dated historical Koala records close to the site suggests a 'moderate-low' likelihood of occurrence on-site.
Pteropus poliocephalus (Grey-headed Flying-fox)	Vulnerable	-	**Moderate** The referral area is mapped as Category X (non-remnant) vegetation as the result of an approved PMAV. Pre-clear mapping of the area indicates RE12.9-10.7 across the majority of the referral area. RE12.9-10.7 indicates potential foraging habitat may be present within the referral area. The nearest roost is located 8.5 km north-west of the site in Yamanto, (479), with recent surveys in 2020 confirming GHFF present at the camp. The nearest roost of national significance is Inala (1219) approximately 20.2km north-east. As the species is known to forage in a variety of habitats, including open woodland areas present on-site, a desktop assessment of the likelihood of occurrence has been assigned 'moderate.'	**Low** Field surveys confirmed the presence of potential foraging habitat for the GHFF on-site in the form of fragmented eucalypt woodland within the north-west of the site and scattered trees across the balance of the site, which contains *Eucalyptus crebra* (Narrow-leaved Ironbark), *Corymbia citriodora* (Spotted Gum) *and Eucalyptus tereticornis (*Forest Red Gum). Corymbia citriodora in particular is recognised as an important winter flowering species for GHFF. The nearest record of the species is associated with an active roost at Yamanto (479) approximately 8.5 km north-west of the site. No flying fox roosts were observed on, or adjacent to, the site during site surveys. The site lacks large patches of vegetation as the majority of the area is cleared open paddocks. Large intact patches of bushland are available to the east of the site which forms part of the White

				Rock Conservation Area. These areas offer higher value foraging environment for Grey-headed Flying-fox and are likely to be preferred to the small patch of marginal habitat found on-site. Due to the lack of recorded sightings in the area and availability of higher quality habitat for this highly mobile species adjacent the site, there is 'moderate-low' likelihood that the species may opportunistically forage on-site.
Stagonopleura guttata (Diamond Firetail)	Vulnerable	Vulnerable	**Moderate** The referral area is mapped as Category X (non-remnant) vegetation as the result of an approved PMAV. Aerial imagery indicates the sites consists of scattered trees and dominated by grasses associated with pasture activities which may provide potential suitable foraging habitat for the species. There are no recorded sightings with 20km of the site and very few records of the species in Queensland. The majority of sightings are recorded within inland SEQ around Toowoomba/Warwick.	**Low** Field surveys identified the site to consist of predominantly open paddocks with grasses and sparsely treed areas. The species is known to favour open forests or grassland paddocks. Native grasses are present across the site including Imperata cylindrica (Blady Grass) and *Heteropogon contortus* (Black Spear Grass), however the site has undergone a significant amount of historical and on-going maintenance to promote agricultural activities resulting in large areas of invasive weed incursion including *Lantana camara* (Lantana) and *Senecio madagascariensis* (Fireweed). The species is rarely recorded in Queensland with most of the recorded sightings inland around Toowoomba/Warwick region. There are no recorded sightings of the species with 20km of the site indicating a low likelihood that the species would utilise the site.

The complete likelihood of occurrence is provided in **Appendix C.**

4.3.4 Migratory Species Assessment

Database searches returned thirteen (13) migratory fauna species listed as threatened under the EPBC Act and/or NC Act, as having been previously recorded or predicted to occur within 5 km of the referral area, as presented in **Appendices A & B**.

Based on the presence of species records within the locality and field surveys within the referral area, a revised likelihood of occurrence assessment was conducted to determine those threatened fauna species with potential to occur within the referral area (refer **Appendix C**). The assessment identified that all migratory species had a low likelihood of occurrence within the referral area (refer **Table 10**).

No EPBC listed migratory species were observed within the referral area.

Table 10: Field Assessment Confirmed Likelihood of Occurrence – Migratory Fauna species

Scientific Name (common name)	EPBC	Desktop (Preliminary) Likelihood of Occurrence	Field Assessment Confirmed (Revised) Likelihood of Occurrence
Latham's Snipe (Gallinago hardwickii)	Migratory Wetland Species	**Moderate** The species has been recorded within the locality of the referral area, most notably to the north and south-east. The species favours freshwater wetlands with areas of dense ground vegetation. The referral area contains several constructed dams and relatively recent, local records. The likelihood of occurrence assessments based on the desktop assessment has been assigned moderate.	**Low** The referral area does not contain true wetland environments favoured by the species with potentially suitable habitat confined to a series of constructed farm dams. These dams were dominated by pasture grasses as a result of historic and contemporary cattle grazing. While the species has been observed utilising constructed dams in the local area, it is more frequently observed within the vicinity of Bundamba Lagoon, a large waterbody with dense native wetland vegetation, providing suitable habitat approximately 3km south-east of the referral area. Following detailed field surveys over multiple days, the Latham's Snipe was not observed utilising dams on-site. It is considered unlikely that the species would utilise dams on-site given the suitability of habitat associated with Bundamaba Lagoon to the south-east. The removal of low-value habitat within the referral areal is not considered to significantly reduce the availability of habitat within the local area as the size of Bundamba lagoon is capable of supporting a high number of individuals. The likelihood the species would utilise the site has been assigned 'low.'

5. Impact Assessment

5.1. Potential Project Related Impacts

The proposed development involves the establishment of an urban development across the referral area in line with the zoning intent of the Queensland Government's Priority Development Area. This will involve removal of all remaining vegetation on the site, earthworks and the creation of new local infrastructure in support of land for housing. Stockland will not be constructing houses at the project site, rather developing land available for housing in accordance with the specifications of the Queensland Government's development Scheme.

5.1.1 Impact Avoidance

As noted in this referral, the site has historically been cleared and maintained as predominantly treeless for decades. The lack of environmental features has contributed the land being centrally earmarked within the Greater Ripley Priority Development Area and zoned 100% for housing. The greater volume of housing achieved on this allotment the less pressure placed on vegetated areas surrounding the PDA and other areas of the South East Queensland Regional Plan to take up defrayed housing stock. The land is gentle to moderately graded with topography and serviced via the existing Ripley Road along the entire western boundary. The Ripley Road corridor also provides immediate access to other critical services and infrastructure. North, South and East of the allotment are all zoned and proposed for development with many of the land holdings already holding approvals or active applications.

The site was marketed nationwide to the development industry and Stockland entered into this campaign and successfully acquired the land holding. Stockland invested a significantly higher cost per ha into this acquisition when compared with all other transactions made with the Ripley Valley because of the lack of environmental impacts associated with developing the parcel. Stockland hold a number of other approvals and live applications with the Federal Department in the western corridor and are aware of the increased scrutiny to deliver greater nature positive outcomes through the EPBC Act. A number of land holdings have transacted prior to and since the Stockland acquisition of the site at lower acquisition rates, in some cases because the need to undertake a greater level of environmental impact to achieve the land zoning intent. Stockland has sought to apply the avoidance process of the mitigation hierarchy to the acquisition of this highly unconstrained land. The site directly reflects the type of land holding which should be targeted for development and Stockland should be supported in their objective to acquire development sites which minimise impacts to the environment.

Aerial photos, desktop searches, data base records and field assessments identified the site to be highly modified as a result of historical and contemporary land clearing including periodic maintenance to for the ongoing agistment of cattle. A small patch of isolated and clustered native trees are present in the north-west of the site which contains predominantly *Corymbia citriodora* (Spotted Gum). This 2ha area, although containing native trees mixed with some landscape and exotic species, is of relatively low ecological value given the lack of supporting vegetation and its integrated location with housing and farming infrastructure.

The area that has been defined as 'Isolated and scattered ancillary koala habitat trees' represents about 1.5% of the total referral area or 2ha. The vegetation unit is located at the top of a local ridge where it provided a landscape setting for the original homestead and farm infrastructure area. These existing facilities will be demolished, and significant earthworks are required at this point of the site to provide the grades required to achieve local road and housing requirements as specified in the Queensland Government's Development Scheme. These works make it extremely difficult to retain any meaningful area of vegetation at this location. Additionally, no areas adjoining this northern patch of trees is zoned or proposed through adjoining developments to provide any future linkage should a design be developed, which could achieve any tree retention at this location.

Any additional avoidance achieved at this location would have no meaningful role for threatened species in the future developed scenario of this and adjoining sites. Thus any additional avoidance at this would be at the expense of housing supply forced to be located elsewhere without any benefit to MNES habitat for species.

5.1.2 Potential Direct Impacts

Vegetation Clearing

The project is predicted to directly impact all 77.9ha if the referral area inclusive of 2ha of 'Isolated and scattered ancillary Koala habitat trees' and 74.9ha of 'Isolated trees and paddocks' with remaining 0.9ha made up a series of small constructed dams.

Habitat Loss

The project will result in the removal of the 2ha area of canopy trees and remaining isolated trees through the large open paddock zones. This removes a small volume of trees qualifying as koala food trees and with selected species aligning with GHFF foraging diagnostics. The volume of the loss is extremely minor in the scheme of the project and impacts already approved with the Ripley Valley.

Development will flank the western boundary which adjoins the existing Ripley Road corridor. Development will also adjoin the northern and eastern boundaries. All properties sharing and boundary with this land holding along the north and east have current development applications which do not proposed to retain any vegetation adjacent to the referral site. No application occurs on the land to the south which is separated from the project area via an existing Queensland Government road reserve. The land to the south is predominantly farming paddocks with very juvenile regrowth vegetation. **Plan 5** shows the allotment to the south is also 100% zoned and proposed for future development.

While in a theoretical review, arguments could be made that the establishment of housing over the allotment would form a barrier to koala dispersal, the absence of on-site vegetation, off-site areas warranting connectivity, slope, grade and context suggest dispersal is not currently occurring and would be extremely unlikely even if no development was to occur.

The MNES identified as having a moderate and higher likelihood of occurrence based on a desktop and field assessments include Koala and Grey-headed Flying-fox. Subsequently, these species, with the addition of White-throated Needletail have been further assessed in terms of the risk of potential project related impacts

upon each matter, to determine the need or otherwise for EPBC Act significant impact assessments to be completed, as presented in **Table 12, 13 and 14)**.

The risk of impact assessment is qualitative and based upon the potential extent of habitat loss resulting from the construction phase of the project and to a lesser degree the operational phase of the project. It considered, but was not limited to the following:

- The value of the impacted habitat to each respective matter;
- The amount of habitat to be directly impacted (lost) against that to be retained;
- Potential indirect impacts (e.g. dust, noise and soil erosion);
- Potential fragmentation of a population into two or more populations;
- Increased fragmentation of wildlife corridors in the Referral area;
- Risk of operational impacts (e.g. noise); and
- Each species ability (e.g. fauna) or inability (e.g. flora) to move away from areas of direct impact into retained habitat.

5.1.3 Potential Indirect Impacts

Indirect impacts occur when project related activities affect vegetation or habitats in a manner other than a direct loss or clearing. Examples of indirect impacts include; promotion of soil erosion, sedimentation of waterways, dust inhibiting plant pollination, provision of suitable seed bed for invasive plants, or increased noise activity within of directly adjacent to sensitive habitat areas.

The potential indirect impacts that may result from construction activities and/or the operational phase of the project have been identified below.

Weeds

Increased vehicle movement during the construction phase has the potential to increase the spread of weeds in the area, particularly during the vegetation clearing phase, however, weeds are already present across much of the site, most notably exotic grasses, *Melinis repens* (Red Natal Grass), *Lantana camara* (Lantana) and *Senecio madagascariensis* (Fireweed). With implementation of standard mitigation measures, the project is likely to result in a negligible impact to ecological values due to the potential introduction/spread of weeds.

Vehicle Movement

During construction, a number of vehicles will be required on the referral area. Direct impacts from vehicle movements on threatened species and vegetation communities could include:

- damage or destruction of vegetation or fauna habitat by vehicles traversing these areas; and
- fauna strike.

Indirect impacts include:

- interference of fauna through visual and noise impacts. This in turn can affect feeding, roosting, breeding or nesting behaviour;
- introducing and/or spreading weeds or feral animals carried on or in vehicles, resulting in deterioration or loss of vegetation and important fauna habitat; and
- damage or destruction of vegetation and fauna habitat through smothering by dust generated by vehicles traversing the project area.

Given there is no evidence of MNES species occurring at the site and very minor and acute locations with any attributes that could be defined as providing even potential habitat, these impacts are considered highly unlikely and easily mitigated with standard construction management protocols required by both State and Local Governments. With implementation of standard mitigation measures, such as exclusions fencing, the project is likely to result in a temporary and minor impact to ecological values due to vehicular movements. Further, ecological field survey confirmed only common and highly mobile fauna are present on the site.

Earthworks

Construction activities have the potential to generate dust emissions. Dust emissions during construction will be temporary. The main sources of dust will be generated via:

- wheel-generated dust from the haul roads created for the construction phase;
- dust lift-off from exposed surfaces (e.g. construction roads and pads);

- earthworks, including construction of the embankments, and moving, dumping and shaping material; and
- vegetation and soil clearing of the land.

Excessive deposition of dust on leaves of plants can suppress their growth and photosynthesis, resulting in reduced habitat quality for fauna. High levels of airborne dust can irritate the respiratory systems of fauna and potentially result in ingestion of dust-coated seeds and other foods. Excessive deposition of dust on open water bodies may also degrade water quality and overall habitat quality for fauna. Notably the referral area exists within a highly urbanised environment with surrounding areas utilised for industry. Presence of heavy vehicle movement already incurs dust emissions within the locality. Regardless, with implementation of standard mitigation measures, the project is likely to result in a temporary and minor impact to ecological values due to the generation of dust.

Light Emissions During Construction

Artificial light can affect both nocturnal and diurnal animals by disrupting behavioural patterns, with quality of light (e.g. wavelength, colour), intensity and duration potentially evoking different faunal responses. Impacts from increased light levels include disorientation from, or attraction toward, artificial sources of light; mortality from collisions with structures, and effects on light-sensitive cycles of species (e.g. breeding and migration for fauna and flowering in plants). An artificial increase in lighting can also affect abundance of predators.

Presence and intensity of artificial light in the project area will temporarily increase during the construction phase; however, night works will not be common. Lighting will be directed to construction areas within the project site. Some light spillage will be inevitable and is likely to be contained. Potential impacts associated with light emissions will be temporary and are unlikely to be significant.

Noise and Vibration

Noise levels greater than existing ambient noise levels are expected during the construction within the project area. Sources of noise are likely to consist of short, intense pulses from mobile plant equipment, and more prolonged noise, with consistent vibration, pitch and volume from generators, excavators and pumps, in addition from noise from vehicles.

Both steady continuous and single noise events have the potential to lead to ecological impacts. Construction noise is expected to elicit some avoidance response from fauna using the surrounding vegetation though, with consideration of the extent of habitat available in and adjoining the referral area and species mobility, this is likely to be a temporary and negligible to minor impact. It's noted that the already well used Ripley Road flanks the entire western boundary of the referral area.

Waste Disposal

Inappropriate disposal of non-hazardous wastes can attract vermin and other wildlife to site. This may exacerbate potential impacts (e.g. road mortality). Litter may also enter surrounding environments. With implementation of standard mitigation measures, the project is likely to result in a negligible impact to ecological values due to the generation and handling of waste.

Hazardous and Dangerous Goods

Spills and leaks from transfers (e.g. fuel and/or chemicals) and inadequate storage of dangerous goods and hazardous wastes could result in point-source contamination of surrounding land. Direct adverse impacts could include toxic impacts on vegetation (resulting in degradation or loss of vegetation and habitats), direct toxic impacts on fauna (from contact, inhalation or ingestion) or indirect impacts on threatened and migratory species from habitat loss. Direct adverse impacts on surface and groundwater quality are also possible.

With the application of standard mitigation and management measures, impacts from liquid and solid waste disposal will be avoided or localised and small in scale. Further to this, the likelihood of significant spillages is considered extremely low. Therefore, the project is likely to result in a negligible impact to ecological values due to potential spills and leaks.

Increased Human Presence

Increased human activity during construction has the potential to disturb fauna within adjacent habitat areas. Resulting impacts to fauna include heightened vigilance and predator avoidance, which can disrupt foraging and roosting efficiency or deter wildlife from using particular areas. Impacts essentially represent a reduction in habitat availability due to edge effects. The project is likely to result in a temporary and minor impact to ecological values due to increased human presence on site during the construction and operational period.

5.2. Potential Impacts to Matters of National Environmental Significance

As detailed in the previous sections, field surveys confirmed that, with the exception of Koala, the following are unlikely to occur or have a low likelihood of occurrence on the referral area.

- EPBC Act listed TECs;
- EPBC Act and NC Act listed flora species;
- EPBC Act and NC Act listed fauna species;
- EPBC Act Migratory fauna species.

6. Avoidance, Mitigation and Management Measures

6.1. Construction Phase

General mitigation measures to be implemented during the construction phase of the Project are outlined below. It is understood that the impact area will be securely fenced for security purposes and to mitigate potential threats to fauna within the retained rehabilitation area at operation.

6.1.1 Vegetation Clearing and Management Plan

A Vegetation Clearing and Management Plan (VC&MP) should form part of the broader management document submitted as part of the operational works application for the development site. The VC&MP should cover clearing of all vegetation listed in this report and include details on:

- Clearly show trees to be removed
- All civil works likely to impact on existing vegetation
- Temporary and permanent exclusion and protection fencing
- Roles and responsibilities for site contractors, the developer and the consultant group
- Stockpiling and site access locations
- A clearing sequence plan showing the commencement of clearing and direction of removal (this should be in conjunction with the Fauna Management Plan to allow for the appropriate flushing of fauna towards safe havens and/or the application of an appropriate relocation program)
- Links to weed management and revegetation proposals
- The stock piling and reuse of cleared vegetation

6.1.2 Fauna Management Plan

A Fauna Management Plan (FMP) should be prepared for potential impacts of the construction phase covering the loss of vegetated areas, isolated trees and likely barriers and impediments to local dispersal.

The FMP should link closely with the VC&MP and include details on:

- Species surveyed as using the site with a focus on those most likely impacted by development works
- A list of relevant State and Commonwealth legislation constraints and controls for the above listed fauna
- A plan showing existing habitat opportunities and locations
- Details of the threats to existing fauna species
- Clearing sequence plan from the VC&MP
- Management and mitigation measures i.e. temporary use of fauna exclusion fencing

- Fauna spotter role, contacts and certification
- Specific fauna management procedures for potential or known habitat trees

6.1.3 Fauna Spotter Catcher

A registered and suitability qualified fauna spotter catcher/ecologist will need to be employed for the construction phase of the project to implement a protocol of best management practises. Significant habitat features, should any be identified on site, will be flagged prior to clearing events and these areas supervised by an appropriately experienced Ecologist. Identified within the clearing supervision protocol should be flagging of hollow bearing trees, if present, followed by the removal of vegetation surrounding them. After 24 to 72 hours, these trees should then be removed. Trees must be directionally felled into open or already cleared areas.

The objective of this is to enable hollow dependant fauna an opportunity to move on their own accord as many species utilise multiple den/roost sites within a given home range should they occur. Certain areas could be identified and flagged as significant, such as old-growth trees with hollow resources and on-site identification to construction personnel will help reduce/avoid clearing. Where required, native fauna situated within areas to be cleared will be relocated to a secure area of similar habitat prior to the commencement of vegetation clearance works by a registered fauna spotter/catcher. Should any removal and relocation of nests be required, it is to be undertaken by a suitably qualified and experienced person and advice sought where necessary.

7. Significant Impact Assessment

7.1. Significant Impact Assessment Definitions

The Significant Impact Guidelines 1.1 provides specific definitions for '*a population of a species*' and '*habitat critical to the survival of a species or ecological community*'. This definition is a key consideration when conducting significant impact assessments for a threatened species or ecological community listed under the EPBC Act. The definitions are presented below.

Table 11: Significant Impact Guidelines 1.1 definitions

Definition	Species applicable for this assessment
Vulnerable Species 'Important population': An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and / or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range.	• Grey-headed Flying -fox • White-throated Needletail
Endangered Species 'Population of a species': A 'population of a species' is defined under the EPBC Act as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable threatened species, occurrences include but are not limited to: • a geographically distinct regional population, or collection of local populations, or • a population, or collection of local populations, that occurs within a particular bioregion.	• Koala
Habitat Critical to the survival of a species or ecological community The Significant Impact Guidelines provide the following definition for '*habitat critical to the survival of a species*' *"Habitat critical to the survival of a species or ecological community"* refers to areas that are necessary: • For activities such as foraging, breeding, roosting or dispersal • For the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)	• Koala • Grey-headed Flying-fox • White-throated Needletail

- To maintain genetic diversity and long-term evolutionary development
- For the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be, but is not limited to:

- Habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community
- Habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

7.2. *Phascolarctos cinereus* (Koala)

7.2.1 Conservation Status

The Koala is listed as Endangered under the EPBC Act.

7.2.2 Description

Koalas (*Phascolarctos cinereus*) are native Australian tree-dwelling marsupials with predominantly grey coloured fur.

7.2.3 Distribution

The Koala is found from north-east Queensland to the south-east corner of South Australia. As a consequence of translocations, the Koala are found outside their historic range, for example, Kangaroo Island. The distribution of the Koala is influenced by altitude, temperature and leaf moisture. The density of the Koala population in coastal regions is generally greater than inland areas. Koalas are known to naturally inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by *Eucalyptus* sp.

7.2.4 Habitat

Koala habitat can be broadly defined as any forest or woodland containing species that are known Koala food trees, or shrubland and emergent food trees. Preferred food and shelter trees are naturally abundant on fertile clay soils. Along the Great Dividing Range and the coastal belt throughout the species' range, Koalas inhabit moist forests and woodlands mostly dominated by *Eucalyptus* sp.

Koalas are highly territorial, and individuals maintain their own home range which may overlap with other individuals. Home ranges are variable depending on the location, with those in "poorer" habitats being larger than in higher quality habitats. There is little evidence for longer movements in most cases, though dispersing individuals, mostly young males, may occasionally cover distances of several kilometres over land with little vegetation. In SEQ, the average distance between natal and breeding home ranges was similar for males and females, at approximately 3.5 km. Maximum dispersal distances were up to approximately 10 km for males and females. Other studies have reported movement of up to 16 km in rural SEQ.

7.2.5 Threats

Habitat loss and fragmentation, vehicle strike and predation by domestic or feral dogs are the main threats to the Koala. Extreme environmental events, such as drought, can also cause significant mortality.

7.2.6 Significant Impact Assessment

As of 12 February 2022, the EPBC Act referral guidelines for the vulnerable Koala have been redacted following the elevation of the Koala listing status under the EPBC Act to Endangered. As such, the Federal Significant Impact Guidelines are to be utilised in the interim to determine if a significant impact on Koala may occur as a result of the proposed action. The assessment methodology included site surveys and consideration of Commonwealth, State and Local Government environmental database searches.

To determine whether the proposed action is likely to have a significant impact on the Koala, an assessment against the *EPBC Significant Impact Guidelines 1.1* is provided in **Table 12**

Table 12: EPBC Significant impact criteria for critically endangered and endangered species - Koala

Significant Impact Criteria	Assessment	Impact
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1. Lead to a long-term decrease in the size of a population	Despite the referral area being completely mapped as Category X (non-remnant) vegetation as a result of a PMAV (ref: 2006/010563), Non-juvenile Koala Habitat Trees (NJKHTs) are present within the referral area. The site itself has been historically cleared for rural uses, with the vast majority of the area subject to on-going maintenance for pastoral activities having only scattered trees remaining and dominated by pasture grasses. The north-western extent of the site consists of higher tree density dominated by *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark) with scattered *Eucalyptus tereticornis* (Forest Red Gum) on the lower slopes. This area has also been subjected to historic and contemporary modification resulting in a largely cleared understory with moderate weed density at the ground and shrub layer. Several planted ornamental species were observed in this area with the entire setting established for landscape amenity around the driveway, homestead, sheds, stables and cattle yards. Field assessments focussed on treed areas in the north-west, no evidence of Koala was observed either directly or indirectly. This included a search under every tree as part of the broader tree survey. According to Queensland Wildnet Data, which dates back to the 1980s, fourteen (14) Koalas have been recorded within a 5 km radius of the site. A review of ALA and Biomaps indicated that these records vary from relatively recent (2019) to historical (1987). The closest recorded sighting of Koala to the referral area is from 2007 adjacent to Ripley Road. More recent records of Koala (within 7 years) are located in White Rock Conservation Area 4.8 km east of the site; Deebing Heights 4km west and Goolman, forming part of Goolman Conservation Estate to the south. A number of referrals have been made within the vicinity of the project site and koala scats, typically of a low level activity, are noted in the local context. Connectivity value to the south and west of the site is extremely limited by low quality regrowth vegetation, cleared areas and the already well-established Ripley Road. The north and east boundary's adjoin allotments with mixed vegetation values predominantly of a regrowth nature.	**A significant impact is not likely**

	The majority of the adjoining allotments are 'locked in' as Category X (non-remnant) vegetation under approved PMAV. They also contain active development applications for residential development and do not propose any tree retention adjoining this referral allotment. The site itself offers very little connectivity value or viable ecological linkages due to predominantly being a largely treeless environment with vast areas of cleared paddocks approximately 0.8km wide and 1.1km long. There are no State or Local Government values mapped at the site for either local features or strategic ecological corridors or connectivity. Given the minimal amount of actual vegetation clearing to undertake this development, its historical intensive grazing uses and central location within a major Priority Development Area, combined with the field survey results it is considered highly unlikely the project will lead to a long term decrease in the South East Queensland Koala population.	
2. Reduce the area of occupancy of the species	Detailed studies utilising both direct and indirect survey methods did not detect any evidence of Koala within the referral area, suggesting the vegetation on-site is not presently or recently utilised by Koalas. In addition, recorded sightings of the species in the local area are all relatively dated (over ten years) with contemporary records (within 7 years) located in White Rock Conservation Area 4.8 km east of the site; Deebing Heights 4km west and Goolman, forming part of Goolman Conservation Estate to the south. While the proposed action will remove 'isolated and scattered ancillary koala habitat trees', the impact area will occupy highly modified, predominantly cleared areas present over the majority of the referral area. These areas contain only scattered mature species and juvenile regrowth which provides extremely limited connectivity value to adjacent vegetation to the east. Connectivity value within the referral area and broader region at present is extremely limited, therefore it is considered unlikely that the proposed development will significantly reduce connectivity value within the area (refer **Plan 8**). The impact area lacks suitable habitat and connectivity value, and Koala activity was not detected within the referral area, therefore it is anticipated that the removal of vegetation on-site is not considered to reduce the area of occupancy for Koalas.	**A significant impact is not likely**

3. Fragment an existing population into two or more populations	There is limited data or definition on the 'important' koala populations within South-East Queensland. Detailed studies utilising both direct and indirect survey methods did not detect any evidence of Koala within the referral area, suggesting the vegetation on-site is not utilised by Koalas. Koalas in the Greater Ripley area are highly unlikely to rely on this site for breeding, foraging or even dispersal when considering the available options for this in the broader area. The proposed development will utilise and existing major road system and will not preclude any existing movement around the project area within, or adjoining, the broader Ripley Valley area. As shown in **Plan 5** the Ripley Valley Priority Development Scheme includes a strategic volume of land within the Environmental protection zoning which builds on and supports the large areas of National Park surrounding the Priority Development Area. This development will not influence the operational and function of these existing and proposed conservation areas. It is considered unlikely that a population of Koala utilise the site, therefore unlikely to fragment an existing population of the species.	**A significant impact is not likely**
4. Adversely affect habitat critical to the survival of a species	The proposed action results in the removal of tree species known to be used by the Koala such as *Corymbia citriodora* (Spotted Gum), *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Eucalyptus tereticornis* (Forest Red Gum). A portion of this land achieves the definition of Habitat Critical to the Survival of the species and will be removed by the development. Habitat attributes for the Koala include places that contain the resources necessary for individual foraging, survival (including predator avoidance), growth, reproduction and movement. Crucial habitat elements also include patches and corridors to continue gene flow. The site is not considered to contain these attributes of Critical Habitat. While the site does contain Koala habitat trees, the referral area consists of a highly modified environment, primarily 'Isolated Trees and Paddocks' equating to 74.9 ha. Marginally higher value vegetation is present in the north-west of the site where tree density is higher, this includes 2ha of vegetation identified as 'isolated and scattered ancillary koala habitat trees.' It should be noted that vegetated areas are disturbed by invasive species at the ground and shrub layer. The trees also occur within a historically active setting retained for amenity reasons around houses, sheds, stables and cattle yards.	**A significant impact is not likely**

	Impacts of the project include the removal of 2ha of land containing habitat with attributes suitable to support foraging, breeding, shelter and dispersal only in conjunction with off-site areas presently not proposed for retention. While achieving the tree and woodland diagnostics of the definition, the vegetation contained no evidence of current or recent usage and when considered within the broader degraded nature of the property is not considered to result in a significant impact of a measurable scale for the koala.	
5. Disrupt the breeding cycle of a population	Detailed studies utilising both direct and indirect survey methods did not detect any evidence of Koala within the referral area, suggesting the vegetation on-site is not utilised by Koalas. In addition, recorded sightings of the species in the local area are all relatively dated (over 10 years) with relatively contemporary records (past 7 years) greater than 3.5 km from the referral area. As a result, it is not considered that the proposed action would disrupt the breeding cycle of a population of Koala as there is a lack of indication of breeding population on-site.	
6. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will impact a portion of the site containing Koala habitat trees with the 2ha area no longer being available for future koala usage. No evidence of Koala in the form of direct sightings or indirectly through scratch marks or scats was detected on-site during targeted surveys nor incidental surveys. As a local Koala population does not utilise the site presently, it is not considered that removal of the remaining isolated koala trees will result in species decline.	**A significant impact is not likely**
7. Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	The proposed development will add marginally to a surrounding environment known to support a number of major threats to the Koala species including roads and vehicle traffic. The project will not introduce these threats as they already occur within proximity of the referral area and broader landscape. **<u>Vehicles / Roads</u>** The site is accessed via the existing Ripley Road which flanks the entire western boundary and is the most utilised road within this area of the Ripley Valley. The Road is also proposed for upgrade by the Queensland Government in complete isolation to this project.	**A significant impact is not likely**

		Domestic Dogs Creation of land for future house construction will result in an increase in pet ownership over the property. This is occurring over every site under construction with the Ripley Valley. Dog ownership was already occurring at high rates on the rural and rural residential land uses occurring through the valley. This project retains no direct interfaces within any environmental zoned land with adjacent properties all proposing, or zoned for, housing on the adjoining boundaries of this project. Dogs which escape backyards within residential developments are more readily observed and reported when compared with rural areas. While the volume of dogs in the region would be predicted to increase within the context of this project it is not occurring within or adjoining any areas of threatened species habitat. In addition, invasive flora species that may impact the quality of suitable Koala habitat are currently present within the referral area. The proposed development will not result in the introduction or increase of invasive species that are harmful to the Koala being established within any areas of Koala habitat.	
8.	**Introduce disease that may cause the species to decline, or**	Diseases including chlamydial disease and Koala retrovirus (KoRV) are prevalent among Koala populations in South East Queensland. It is unlikely that the proposed action will introduce or increase the prevalence of disease in Koalas particularly as the action is not considered to impact a local population.	
9.	**Interfere substantially with the recovery of the species.**	Detailed studies utilising both direct and indirect survey methods did not detect any evidence of Koala within the referral area, suggesting the vegetation on-site is not currently or recently utilised by Koalas. In addition, recorded sightings of the species in the local area are all relatively dated (over 10 years) with relatively contemporary records (past 7 years) greater than 3.5 km from the referral area. The Action is unlikely to interfere substantially with the recovery of the Koala. The removal of vegetation in the north-west will reduce an area of isolated and scattered ancillary koala habitat trees. The vast majority of the site consists of cleared paddocks with scattered trees unlikely to provide any habitat value of connectivity value within the broader area. The land is 100% zoned	**A significant impact is not likely**

for development and centrally located within one of the largest development areas of South East Queensland with Queensland Government funding and support to create housing supply.

Refer below for an assessment against the EPBC Act Recovery Plan for the Koala.

The EPBC Act National Recovery Plan for the Koala was published in March 2022. This recovery plan for the listed Koala replaces the National Koala Conservation and Management Strategy (2009-2014) (NRM Ministerial Council 2009). It has been developed with relevant State and Territory Governments to provide an overarching national conservation framework for the listed Koala that aligns with local, state and territory government plans, programs and strategies. However, it does not replace Local, State and Territory Government plans, programs and strategies. It is the first recovery plan for the nationally listed Koala.

The overall goal of the National Recovery Plan is 'to stop the trend of decline in population size of the listed Koala, by having resilient, connected, and genetically healthy metapopulations across its range, and to increase the extent, quality and connectivity of habitat occupied'.

Three (3) key objectives of the Draft National Recovery Plan are provided below with responses relevant to the proposed action:

- **The area of occupancy and estimated size of populations that are declining, suspected to be declining, or predicted to decline are instead stabilised and then increased. The area of occupancy and estimated size of populations that are suspected and predicted to be stable are maintained or increased.**

The referral area comprises of entirely no-remnant and highly modified vegetation and mostly described as large, cleared pasture grass paddocks. Historical land uses including broadscale clearing have resulted in a largely treeless environment consisting of paddocks and scattered isolated trees on-site. No Koalas were identified during survey efforts, and no evidence of use was recorded within the referral area despite the ability for every tree to be observed for evidence.

The proposed action will reduce a small area of vegetation defined as 'isolated and scattered ancillary koala habitat trees' as a potential future area of occupancy. However, it is considered highly unlikely that the referral area would be utilised or relied upon by Koala given the property is mot cleared land holding with the Greater Ripley Priority Development Area.

The proposed action will not influence the size of any current koala populations or sub populations.

- **Metapopulation processes are maintained of improved**

No evidence of Koala activity was recorded on-site, and there are limited contemporary records in the immediate area.

The referral area is surrounded by small farming and rural residential properties on all sides with Ripley Road running the length of the western boundary. Surrounding vegetation consists of a mixture of cleared open areas and regrowth vegetation. At present, it is considered unlikely that vegetation on-site contributes to the connectivity value of the area, therefore the proposed action is unlikely to fragment any population of Koala.

- **Partners, communities and individuals have a greater role and capability in listed Koala monitoring, conservation and management**

No evidence of Koala activity was recorded on-site, and there are limited contemporary records in the local area.

Low vehicle speeds and slow points are inherent in residential developments, minimising the risk of vehicle strike. Although the proposed action will involve the removal of an area identified as 'isolated and scattered ancillary koala habitat trees', this area only equates to 2ha. The vast majority of the site is treeless resulting in unsuitable Koala habitat. Additionally through the Queensland Government's Greater Ripley Priority Development Area Development Scheme, residential housing is proposed on all boundaries surround this allotment. The busy Ripley Road already flanks the entire western boundary and active development applications and approvals occur on the land to the north and east, none of which preserve any trees adjacent to this land or ecological corridors to connect this land to the broader conservation areas surrounding the Ripley Valley.

8. Koala Habitat and Records

Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

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Legend

- Site DCDB
- 5KM Site Buffer
- 10KM Site Buffer
- Koala Records within 10KM of site [ALA, 2023]
- Potential and Known Koala Habitat within 10KM of site - 47.35%

Issue	Date	Description	Drawn	Checked
A	1/09/2023	Preliminary	TF	LB

0 1 2 3 4 km

Transverse Mercator | GDA 2020 | Zone 56 | 1:100,000 @ A3

saunders havill group

Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

1/09/2023 | 11081 E 07 Koala Habitat and Records A

7.3. *Pteropus poliocephalus* (Grey-headed Flying-fox)

7.3.1 Conservation Status

The GHFF is listed as Vulnerable under the EPBC Act.

7.3.2 Description

The GHFF is the largest Australian bat with a wingspan of up to one metre. It has dark-grey body fur, a grey head, and a distinctive reddish-brown collar. It is also the only flying-fox with hairy legs right down to its ankles.

7.3.3 Distribution

The GHFF occurs along the south-east coast of Australia, from Rockhampton in central Queensland through New South Wales to western Victoria. During the last few years, the GHFF has also been recorded from Adelaide.

7.3.4 Habitat

The GHFF is heavily dependent on the availability of foraging resources and roost sites. As canopy feeding frugivores and nectarivores, GHFFs frequent fruiting and flowering trees in rainforests, open eucalypt forests, woodlands, *Melaleuca sp.* swamps and Banksia woodlands (Duncan *et al*. 1999). The GHFF is also known to forage in fruit crops and introduced tree species within urban environments. Roost sites for the GHFF are commonly within dense vegetation close to water, primarily rainforest patches, stands of *Melaleuca sp.*, mangroves or riparian vegetation.

7.3.5 Recovery Actions

There is now an adopted Recovery Plan for this species at the federal level. It focuses mainly on managing adverse impacts to roosting sites, culling controls, fenced entanglement and public awareness, with reference to foraging habitat. From the recovery guidelines:

Where the existence of important winter and spring flowering vegetation communities is verified in the field, they are considered habitat critical to the survival of the Grey-headed Flying-fox. Back yard fruit trees, orchards or non-native trees that may be used for foraging are not considered to be habitat critical to the survival of the Grey-Headed Flying-Fox. Habitat critical to the survival of the Grey-headed Flying-fox may also be vegetation communities which:

- contain native species that are known to be productive as foraging habitat during the final weeks of gestation, and during the weeks of birth, lactation and conception (August to May)
- contain native species used for foraging and occur within 20 km of a nationally important camp as identified on the Department's interactive flying-fox web viewer, or
- contain native and or exotic species used for roosting at the site of a nationally important Grey-Headed Flying-Fox camp as identified on the Department's interactive flying-fox web viewer.

Habitat critical to the survival of the Grey-headed Flying-fox should be the focus for protection and any revegetation initiatives aimed to support the species.

Notably, the recovery plan lists habitat loss as a key threat to the Grey-headed Flying-fox. It is understood that mapping of habitat critical to the survival of the grey-headed Flying-fox is an initiative of the recovery plan. The site is not considered to maintain important foraging habitat for the Grey-headed Flying-fox (refer below).

The Queensland Government identifies the following recovery actions:

- Identify and map important foraging and roosting habitats
- Prevent the destruction and degradation of important forested habitat, through: identifying guidelines to protect habitat; appropriate zoning; identifying development alternatives and incentives to retain habitat and educating communities.
- Encourage community partnerships and initiatives that protect important habitats, and where possible re-vegetate with foraging trees for GHFF
- Work with orchardists to improve the image of GHFF, and to identify and implement non-destructive methods to protect fruit crops, such as: appropriate netting (not monofilament netting) that is not hung loose over trees (which can entangle bats and birds)
- Reduce negative public attitudes and conflict with humans
- Develop accurate methods for monitoring population size

7.3.6 Significant Impact Assessment

EPBC Act, Grey-headed Flying-fox populations are listed as Vulnerable. The species is not specifically listed under Queensland's *Nature Conservation Act 1992* (Qld) (NCA), however, retains a Least Concern status for the purposes of the Act. The *Referral guideline for management actions in grey-headed and spectacled flying-fox camps* summarise the decision process in considering the likelihood of a significant impact on the Grey-headed Flying-fox or Spectacled Flying-fox schematically. The Guidelines are specifically for the assessment of impacts on Flying-fox camps.

GHFFs are heavily dependent on the availability of foraging resources and roost sites. As canopy feeding frugivores and nectivores, GHFFs frequent fruiting and flowering trees in rainforests, open eucalypt forests, woodlands, Melaleuca sp. swamps and Banksia woodlands (Duncan et al. 1999). The GHFF is also known to forage in fruit crops and introduced tree species within urban environments. Roost sites for the GHFF are commonly within dense vegetation close to water, primarily rainforest patches, stands of Melaleuca sp., mangroves or riparian vegetation. The value of vegetation to the grey-headed flying fox is difficult to assess due to the high mobility of the species in conjunction with timing of flowering of tree species within the assessment area. The maximum nightly foraging distance of GHFF is estimated at 50 kilometres, while most forage within a 15 km radius of daytime roost sites (Tidemann 1998).

Grey-headed Flying-foxes were not observed foraging or roosting within the assessment area at Ripley Road, Ripley during field survey efforts, nor were they observed as fly-over species. Suitable individual foraging trees exists within a small area in the north of the referral, therefore the GHFF has the potential to utilise the investigation area for foraging purposes.

The Referral guideline for management actions in grey-headed and spectacled flying-fox camps states that the guideline does not apply to the following relevant points:

- Actions in the vicinity of camps, such as development actions, firework displays or concerts, which may indirectly affect camps of EPBC Act-listed flying-fox species.
- Actions which may impact on the foraging habitat of EPBC Act-listed flying-fox species. Proponents of actions of this kind should refer to the significant impact guideline 1.1. (4.1.5).

To determine whether the proposed action is likely to have a significant impact on the Grey-headed Flying-fox, an assessment against the *EPBC Significant Impact Guidelines 1.1* is provided in **Table 13**.

Table 13: GHFF significant impact assessment

Significant Impact Criteria	Description	Impact
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1. Lead to a long-term decrease in the size of an important population of a species	Field surveys identified the majority of the site as treeless paddocks with a portion of isolated and scattered native species in the north-west, including *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark). A review of the National Flying-fox monitoring viewer identified a GHFF roost approximately 8.5km north-west of the site (Yamanto (851)), while the nearest roost of national significance is Inala (1219) approximately 20.2km north-east. A small area (2ha) in the north of the property contains sporadic clusters and individual trees which include species of an age, size and type which qualifies as potential foraging trees. As noted in the referral, these predominantly align with a mix of native and exotic trees maintained around the house, shed, stables, cattle yard area. While it is plausible that from time to time these trees maybe foraged by GHFF, in line with smaller acreage or larger lot residential areas, removal of these trees would result in an immeasurably low reduction of available habitat within the immediate area and an imperceptible reduction in the local region. Given the small number of qualifying foraging tree species, their historical homestead locality and distance from known roost sites, the site is not considered to provide critical habitat supporting an important population of the species. The proposed action is unlikely to lead to a long-term decrease in the size of any local GHFF populations. No roosts were observed within, or adjacent to, the referral area, nor have they been reported in the ecological reporting for any adjoining land holdings.	**A significant impact is not likely**
2. Reduce the area of occupancy of an important population	No roosts are present on/or adjacent to the site. The site retains minimal ecological value, confined to a small area of isolated and fragmented native trees in the north-west of the site. The proposed action will not reduce the area of occupancy of an important population of GHFF as no roost was observed on-site and no roost of national significance is present	**A significant impact is not likely**

Significant Impact Criteria	Description	Impact
	within 20km of the site. Furthermore, there is an abundance of suitable habitat associated with White Rock Conservation Area	
3. Fragment an existing important population into two or more	The SPRAT species profile outlines that while there are spatially structured colonies of GHFF, there are no separate or distinct populations due to the constant genetic exchange and movement between camps throughout the species' geographic range. In addition, given the high mobility of the species, and lack of areas containing suitable roosting or foraging habitat on-site, the proposed action is unlikely to fragment a population into two or more populations.	**A significant impact is not likely**
4. Adversely affect habitat critical to the survival of a species	No roosts are present on/or adjacent to the site. Vegetation on-site consists of predominantly cleared open paddocks dominated by grasses with only scattered, isolated trees in the north-west of the site. Furthermore, due to the location of the site proximal to White Rock Conservation Area, and the GHFF's high mobility, the habitat on-site is not considered of a size which could contribute to habitat critical to the survival of this species.	**A significant impact is not likely**
5. Disrupt the breeding cycle of an important population	Mating normally occurs within autumn, and females generally give birth in October, where they carry their young to feeding sites for four to five weeks after giving birth. No roosting camps were observed on or near the site, and it is considered unlikely that the proposed development will adversely affect habitat critical to the survival of the species.	**A significant impact is not likely**
6. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	While the site does contain a small area of scattered and isolated trees which could be utilised for foraging, its removal is unlikely to have a significant impact on the availability of habitat in the landscape as White Rock Conservation Area to the east would be available to this highly mobile species.	**A significant impact is not likely**
7. Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	The site shows high levels of disturbance and modification as a result of long term and current rural uses with several invasive plants and pest rural animal species observed. The proposed action is unlikely to result in the introduction of further invasive species for the GHFF.	**A significant impact is not likely**

Significant Impact Criteria	Description	Impact
8. Introduce disease that may cause the species to decline	The project is unlikely to introduce disease into the area.	**A significant impact is not likely**
9. Interfere substantially with the recovery of the species	Recovery of the species has specifically targeted the broad scale culling of the species. In addition, conservation efforts have led to the protection of known roosting sites and important habitat. The site has not been identified as an important habitat nor roost site and the action is unlikely to interfere with the recovery of the species.	**A significant impact is not likely**

The purpose of the National Recovery Plan for the Grey-headed Flying-fox is to set out the management and research actions necessary to stop the decline of, and support the recovery of the Grey-headed Flying-fox over the next 10 years. The overall objectives of this Grey-headed Flying-fox recovery plan are:

- to improve the Grey-headed Flying-foxes national population trend by reducing the impact of the threats outlined in this plan on Grey-headed Flying-foxes through habitat identification, protection, restoration and monitoring, and
- to assist communities and Grey-headed Flying-foxes to coexist through better education, stakeholder engagement, research, policy and continued support to fruit growers.

The plan addresses the key threats facing the Grey-headed Flying-fox and recovery objectives which are provided below with responses relevant to the proposed action:

Identify, protect and increase native foraging habitat that is critical to the survival of the Grey-headed Flying-fox

Although no roosts were identified on-site, the referral area is located in proximity to a known Grey-headed Flying-fox roost, 8.5km north-west of the site (Yamanto (479)). The nearest roost of national significance (Inala (1219)) is located approximately 20.2 km north-east of the site. Habitat critical to the survival of the species is considered important winter and spring flowering vegetation communities. Important winter and spring vegetation communities are those that contain *Eucalyptus tereticornis, E. albens, E. crebra, E. fibrosa, E. melliodora, E. paniculata, E. pilularis, E. robusta, E. seeana, E. sideroxylon, E. siderophloia, Banksia integrifolia, Castanospermum australe, Corymbia citriodora citriodora, C. eximia, C. maculata, Grevillea robusta, Melaleuca quinquenervia or Syncarpia glomulifer*a (Eby and Law 2008; Eby 2016; Eby *et al.* 2019).

Of the species listed above, *Corymbia citriodora* (Spotted Gum), *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Eucalyptus tereticornis* (Forest Red Gum) were recorded within the referral area. A small area (2ha) in the north of the property contains sporadic clusters and individual trees which include species of an age, size and type which qualifies as potential foraging trees. As noted in the referral these predominantly align with a mix of native and exotic trees maintained around the house, shed, stables, cattle yard and driveway areas. While it is plausible that from time to time these trees maybe foraged by GHFF, in line with smaller acreage or larger lot residential areas, removal of these trees would result in an immeasurably low reduction of available habitat within the immediate area and an imperceptible reduction in the local region.

Identify, protect and increase roosting habitat of Grey-headed Flying-fox camps.

No roosts were identified during surveys of the referral area in 2022 and the nearest known active roost site located approximately, 8.5km north-west of the site. No roost sites have been observed within the locality or identified on surrounding land holdings. Preferred roosting habitat for the Grey-headed Flying-fox is poorly understood, therefore it is difficult to preserve potential roosting habitat for the species. Additionally, given the absence of intact habitat, the centrally located infill development nature of the land holding strategically this location would not suite any attempts for roost establishment.

Determine trends in the Grey-headed Flying-fox population so as to monitor the species' national distribution, habitat use and conservation status.
Not applicable. Mitigation measures will be implemented during construction and operation of the proposed action to reduce threats.

Build community capacity to coexist with flying-foxes and minimise the impacts on urban settlements from new and existing camps while avoiding interventions to move on or relocate entire camps.
Not applicable. There are no observed roosts on-site, with the nearest known roost site located approximately 8.5km north-west of the site.

Increase public awareness and understanding of Grey-headed Flying-foxes and the recovery program, and involve the community in the recovery program where appropriate.
Not applicable.

Improve the management of Grey-headed Flying-fox camps in areas where interaction with humans is likely.
Not Applicable. There are no observed roosts on-site, with the nearest known active roost site located approximately 8.5km north-west of the site.

Significantly reduce levels of licenced harm to Grey-headed Flying-foxes associated with commercial horticulture.
Not applicable.

Support research activities that will improve the conservation status and management of Grey-headed Flying-foxes.
Not applicable.

Reduce the impact on Grey-headed Flying-foxes of electrocution on power lines, and entanglement in netting and on barbed-wire.
No roosts were identified on-site and the nearest known roost site located approximately 8.5km north-west of the site. The vegetation on-site contains three (3) of the nineteen (19) important winter and spring foraging species for the Grey-headed Flying-fox. As such, it is considered that the referral area vegetation provides potential foraging habitat for this species.

The proposed action will involve the removal of a small number of potential foraging trees from within the referral area. Entanglement in netting and on barbed wire is considered highly unlikely to be located on-site during construction and operation of the proposed action and can be managed through the implementation of mitigation measures and procedures outlined within future management documents including the VC&MP and FMP. New power infrastructure within the project will be located underground. As such, the proposed action is not considered likely to impact the recovery of this species.

9. Grey-headed Flying Fox Habitat and Records

Notes:
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Legend

- Site DCDB
- 5KM Site Buffer
- 10KM Site Buffer
- Grey-headed Flying Fox Records within 10KM of site [ALA, 2023]
- Potential and Known Grey-headed Flying Fox Habitat within 10KM of site - 47.35%

Federal Government Grey-headed Flying Fox Monitoring Program (2023)

- Grey-headed Flying-fox Roost/ Camp Active within Recent Surveys [1 within 20km]
- Nationally Important Grey-headed Flying-fox Roost/ Camp Active within Recent Surveys [0 within 20km]
- Grey-headed Flying-fox Roost/ Camp Active within Recent Surveys with a Population Level of 3 or Above [2 within 20km]
- Nationally Significant Grey-headed Flying-fox Roost/ Camp Active within Recent Surveys with a Population Level of 3 or Above [0 within 20km]

Issue	Date	Description	Drawn	Checked
A	1/09/2023	Preliminary	TF	LB

0 1 2 3 4 km

Transverse Mercator | GDA 2020 | Zone 56 | 1:100,000 @ A3

saunders havill group

Stockland

Ripley Road, South Ripley

Address / RPD: Lots 241 and 242 on SL10253

1/09/2023 | 11081 E 08 GHFF Habitat and Records A

7.4. *Hirundapus caudacutus* (White-throated Needletail)

7.4.1 Conservation Status

The White-throated Needletail is listed as Vulnerable under the EPBC Act and NCA.

7.4.2 Description

The White-throated Needletail is a large swift with a thickset, cigar-shaped body, stubby tail and long pointed wings (20 cm in length and approximately 115–120 g in weight). Sexes are alike, with no seasonal variation in plumage. The adults have a dark-olive head and neck, with an iridescent gloss on the crown; the mantle and the back are paler, greyish; and the upperwings are blackish, sometimes with a greenish gloss, with a contrasting white patch at the base of the trailing edge; the uppertail is black with a greenish gloss.

7.4.3 Distribution

The White-throated Needletail is widespread in eastern and south-eastern Australia. In eastern Australia, the species is recorded in all coastal regions of Queensland and New South Wales, extending inland to the western slopes of the Great Dividing Range and occasionally onto the adjacent inland plains. Further south on the mainland, it is widespread in Victoria, though more so on and south of the Great Dividing Range, and there are few records in western Victoria. The species occurs in adjacent areas of south-eastern South Australia, where it extends west to the Yorke Peninsula and the Mount Lofty Ranges. It is widespread in Tasmania.

7.4.4 Habitat

The White-throated Needletail is almost exclusively aerial which affects the ease of conventional habitat descriptions. Although they occur over most types of habitats, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. They also commonly occur over heathland, but less often over treeless areas, such as grassland or swamps. White-throated Needletails almost always forage aerially, feeding primarily on insects, at heights up to 'cloud level', above a wide variety of habitats ranging from heavily treed forests to open habitats, such as farmland, heathland or mudflats. White-throated Needletails are known to roost in woodland and forest habitat, amongst canopy or in hollows. Being a migratory species, breeding habitat is located in the northern hemisphere.

7.4.5 Threats

In Australia, threats to the species include loss of invertebrate prey attributed to insecticide use and removal of woodland habitats that support prey species. Other potential threats include collision with infrastructure such as wind turbines, overhead wires, windows and lighthouses.

7.4.6 Recovery Actions

There is no recovery plan in place for the species. Conservation actions for the White-throated Needletail include international coordination with countries in East Asia to protect key breeding habitats and at a national scale, protecting important habitats in Australia.

7.4.7 Significant Impact Assessment

Refer to **Table 14** for assessment against the significant impact criteria. The project is not considered likely to have a significant impact on the White-throated Needletail.

Table 14: EPBC Significant impact criteria for vulnerable species – White-throated Needletail

Significant Impact Criteria	Assessment	Impact
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1. Lead to a long-term decrease in the size of an important population	The site is entirely mapped as Category X (non-remnant) vegetation with the majority of the areas consisting of treeless open paddocks. Small areas of isolated and fragmented native trees are present in the north-west of the site. White-throated Needletails, being highly mobile and being predominantly aerial including while foraging, are unlikely to focus solely on one area of habitat. According to the Conservation Advice they are most often recorded above wooded areas, which this site does not contain. Within a farming context they have been recorded above scattered vegetated and on the edge of paddocks. The species roosts amongst dense foliage in canopy or in hollows which this site is almost completely absent for. The broader area contains large areas of potential foraging and roosting habitat, predominantly located to the east of the site associated with White Rock Conservation Area. Furthermore, the species was not observed on-site during field surveys. The proposed development is unlikely to have a significant impact on the ability of White-throated Needletails to forage or roost in the landscape therefore is not anticipated to lead to a long-term decrease in the size of an important population.	**A significant impact is not likely**
2. Reduce the area of occupancy of an important population of the species	White-throated Needletails are predominantly aerial, however, require dense eucalypt woodland or hollows for roosting. Dense woodland is not present on-site within only isolated and scattered native trees in the north-west of the site which is otherwise predominantly treeless. There are several records of the species within 5km of the site including relatively recent sightings to the north (2020/2021) and to the south at Bundamba Lagoon (2022) with ahigh proportion of sightings at White Rock Conservation Area. The species was not recorded on-site during field surveys. It is considered more likely that the large areas of available habitat in the broader area such as White Rock Conservation Area would be used preferentially to the relatively low-quality/absence of vegetation on-site.	**A significant impact is not likely**

Significant Impact Criteria	Assessment	Impact
	It is considered unlikely that the proposed development would reduce the area of occupancy for the species given lack of suitable habitat/vegetation and availability of larger areas of intact suitable habitat within the greater locality	
3. Fragment an existing important population into two or more populations	White-throated Needletails are highly mobile and therefore do not require connected vegetation for dispersal. The proposed development will not fragment an existing important population.	**A significant impact is not likely**
4. Adversely affect habitat critical to the survival of a species	The proposed development will remove predominantly cleared open paddocks and a small area of isolated and fragmented native trees of relatively low ecological value. White-throated Needletail are less frequently observed utilising paddock or grassland, with a preference for wooded areas which are absent from the site. Given the proposed development will impact only low value or absent habitat values and the presence of large areas of more suitable habitat in the broader area such as White Rock Conservation Area, it is not considered that the proposal will adversely affect habitat that is considered critical to the survival of the species.	**A significant impact is not likely**
5. Disrupt the breeding cycle of an important population	The White-throated Needletail breeds in East Asia. Therefore, the proposed development will not affect the breeding cycle of the White-throated Needletail.	**A significant impact is not likely**
6. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The White-throated Needletail is highly mobile and is able to forage over large expanses, thus reducing the individual importance of selected habitat fragments. The surrounding area provides more substantial habitat including large contiguous vegetation areas which would adequately fulfil the foraging requirements of the species. As the development proposes impacts to predominantly cleared open paddocks and low value habitat only, it is unlikely that the species would decline as a result of the proposed development.	**A significant impact is not likely**
7. Result in invasive species that are harmful to a vulnerable species becoming established	It is unlikely the proposed development would introduce an invasive species that would harm or displace the White-throated Needletail.	**A significant impact is not likely**

Significant Impact Criteria	Assessment	Impact
in the vulnerable species' habitat		
8. Introduce disease that may cause the species to decline	It is unlikely the proposed development would introduce disease that would harm the White-throated Needletail.	**A significant impact is not likely**
9. Interfere substantially with the recovery of the species	According to the *Hirundapus caudacutus* Conservation Advice, recovery actions within Australia focus on identifying areas of vegetation to protect that may provide important foraging and roosting habitat. The proposed development will remove predominantly cleared open paddocks and a small areas of isolated and scattered native trees. Therefore, it is unlikely to form important foraging and roosting habitat. Due to the highly mobile nature of the species and the presence of large areas of potential habitat in the locality, it is not considered that the proposal will interfere substantially with the recovery of the species.	**A significant impact is not likely**

8. Conclusion / Determination Advice

The Referral Area considered for this project is moderately sized, unconstrained bare grazing land that retains almost no native vegetation values over 95% of the area being maintained as large open paddocks with some small constructed ephemeral dams for localised cattle water supply. The land holding adjoins the existing Ripley Road along the entire western boundary which already supports the majority of the traffic in the southern part of Ripley and is progressively being upgraded by the Queensland Government. All land to the north and east contains active development applications which propose residential housing and associated infrastructure to the boundary of this referral area. A mix of cleared areas, juvenile saplings and regrowth vegetation occurs on the adjoining land. No Remnant scale vegetation occurs adjoining any part of the project site. Adjoining land on all boundary's, including the southern area, are zoned to supply residential housing and no mapped areas of potential greenspace or environmental protection under the Greater Ripley Valley Priority Development Area Development Scheme occur on or near the land. The referral area is not connected to any areas of conservation.

The property includes a small area of scattered clusters and isolated trees of both a mature and semi mature age along the northern boundary. The area contains native trees [predominantly *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark)] in conjunction with some landscape and exotic tree species retained and planted to provide amenity around the house, sheds, stables, cattle yards, driveway and other farming infrastructure. An area of 2ha has been mapped as containing trees which achieve the critical habitat definition diagnostics for Koala and Grey-headed Flying-fox. This canopy covered tree zone includes the house and listed infrastructure.

The land holding is completely proposed for development and all remaining areas, including isolated paddock trees and the 2ha scattered vegetation area will be removed to facilitate the supply of new housing in accordance with the Queensland Government requirements for the Ripley Valley Priority Development Area. As part of considering the impacts of this action surveys were completed and detailed Significant Impact Criteria Assessments have been completed for the:

- Koala (*Phascolarctos cinereus*) – Endangered under the EPBC Act
- Grey-headed Flying-fox (*Pteropus poliocephalus)* – Vulnerable under the EPBC Act
- White-throated Needletail (*Hirundapus caudacutus)* – Vulnerable / Migratory under the EPBC Act

Upon further review the White-throated Needletail is not considered relevant for the site impacts. Up to 2ha of land containing habitat features for the Koala and Grey-headed Flying-fox will be removed through the project. No direct sightings of the species were made and indirect evidence in the form of searching every remaining site tree failed to locate evidence of Koala usage. A minor localised impact will occur at the action site with removal of these tree species, however the small, fragmented and homestead setting of the trees will not result in any important, notable or consequential impact on MNES.

Overall, this report concludes that the proposed development, has **low potential to cause a significant impact on MNES as defined under significant impact guidelines** and therefore the proposed Action is recommended as a Not a Controlled Action.

9. References

DAWE 2021, National Recovery Plan for the Grey-headed Flying-fox 'Pteropus poliocephalus', Department of Agriculture, Water and the Environment, Canberra, March.

Department of Sustainability, Environment, Water, Population and Communities, 2011, 'Survey guidelines for Australia's threatened reptiles'.

Department of Sustainability, Environment, Water, Population and Communities, 2011, 'Draft Referral guidelines for the nationally listed Brigalow Belt reptiles'.

Eby, P. and Law, B. 2008. Ranking the feeding habitats of grey-headed flying foxes for conservation management. NSW Department of Environment and Climate Change and Commonwealth Department of Environment, Water, Heritage and the Arts.

Ferguson, D. and Mathieson, M. 2014. Yakka skink, Egernia rugosa. Targeted species survey guidelines. Queensland Herbarium, Department of Environment and Science, Brisbane.

Phillips, S & Callaghan, J 2011, 'The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koala Phascolarctos cinereus', Australian Zoologist, 35:3.

10. Appendices

Appendix A

EPBC Protected Matters Report

Appendix B

NCA Wildlife Online Search Results

Appendix C

Likelihood of Occurrence Assessment -
Matters of National Environmental Significance (MNES)

Appendix D

SAT results

Appendix E

Flora and Fauna species list

Appendix A

EPBC Protected Matters Report

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: 25-Sep-2023

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	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	50
Listed Migratory Species:	16

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:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	22
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:	3
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	39
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
Moreton bay	30 - 40km 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
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Grey box-grey gum wet forest of subtropical eastern Australia	Endangered	Community likely to occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area	In feature area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	Community likely to occur within area	In buffer area only
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may 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			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	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
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 may occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Lathamus discolor](#)			
Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Numenius madagascariensis](#)			
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Rostratula australis](#)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
[Stagonopleura guttata](#)			
Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
[Turnix melanogaster](#)			
Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
INSECT			
[Argynnis hyperbius inconstans](#)			
Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
[Chalinolobus dwyeri](#)			
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area	In feature area
[Dasyurus hallucatus](#)			
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area	In buffer area only
[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
[Macroderma gigas](#)			
Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
[Petauroides volans](#)			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Petaurus australis australis](#)			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Petrogale penicillata](#)			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In feature area
[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
[Potorous tridactylus tridactylus](#)			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Pseudomys novaehollandiae](#)			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Pteropus poliocephalus](#)			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
[Arthraxon hispidus](#)			
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Bosistoa transversa](#)			
Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Cryptostylis hunteriana](#)			
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Cupaniopsis shirleyana](#)			
Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area	In feature area
[Cupaniopsis tomentella](#)			
Boonah Tuckeroo [3322]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Dichanthium setosum](#) bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Fontainea venosa](#) [24040]	Vulnerable	Species or species habitat may occur within area	In feature area
[Macadamia integrifolia](#) Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Macadamia tetraphylla](#) Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Notelaea ipsviciensis](#) Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Notelaea lloydii](#) Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Picris evae](#) Hawkweed [10839]	Vulnerable	Species or species habitat may occur within area	In feature area
[Planchonella eerwah](#) Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat likely to occur within area	In feature area
[Plectranthus habrophyllus](#) [64589]	Endangered	Species or species habitat known to occur within area	In feature area
[Rhaponticum australe](#) Austral Cornflower, Native Thistle [22647]	Vulnerable	Species or species habitat may occur within area	In feature area
[Rhodamnia rubescens](#) Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat may occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area	In feature area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		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]		Species or species habitat likely to 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]		Species or species habitat known to occur within area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Pandion haliaetus](#) Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia			
Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Defence		
Defence - AMBERLEY - AP90 SMALL ARMS RANGE (PURGA) [31817]	QLD	In buffer area only

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
Anseranas semipalmata			
Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
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]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[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
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
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 known 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 known to occur within area overfly marine area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Mount Perry	Conservation Park	QLD	In buffer area only
Stewartdale	Nature Refuge	QLD	In buffer area only
White Rock	Conservation Park	QLD	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Barrams Road Residential Development	2021/9005		Post-Approval	In buffer area only
Bryants Road Residential Development	2023/09484		Assessment	In buffer area only
Ripley Valley PDA Providence East and South	2018/8347		Post-Approval	In buffer area only
Controlled action				
AV JENNINGS PTY LTD - Coleman Road, South Ripley - Residential Development	2021/9061	Controlled Action	Assessment Approach	In feature area
Casino Ipswich Pipeline	2007/3877	Controlled Action	Completed	In feature area
CROCODILE 03 Military Training Exercise	2002/888	Controlled Action	Post-Approval	In buffer area only
Cumner Road mixed use subdivision, Whiterock,Ripley Valley,Qld	2014/7388	Controlled Action	Post-Approval	In buffer area only
ECCO Ripley Residential Development, Ipswich, QLD	2015/7513	Controlled Action	Post-Approval	In buffer area only
Grampian Drive Deebing Heights Residential Development, Qld	2015/7628	Controlled Action	Post-Approval	In buffer area only
Hayfield School Site	2021/9070	Controlled Action	Assessment Approach	In buffer area only
Paradise Waters Residential Estate, Gampian Drive, Deebing Heights	2013/6864	Controlled Action	Post-Approval	In buffer area only
Providence West Residential Development	2020/8698	Controlled Action	Further Information Request	In feature area
Residential Development, Ripley	2020/8791	Controlled Action	Assessment Approach	In buffer area only
Ripley Road Residential Development	2019/8539	Controlled Action	Post-Approval	In buffer area only
Ripley Road residential development, Ripley Valley, Qld	2017/8095	Controlled Action	Post-Approval	In buffer area only
Ripley View Residential Subdivision	2020/8615	Controlled Action	Further Information Request	In buffer area only
Southern Regional Water Pipeline	2006/2593	Controlled Action	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Blackstone Power Station	2012/6252	Not Controlled Action	Completed	In buffer area only
Daleys Road Residential Development	2010/5638	Not Controlled Action	Completed	In buffer area only
Fernbrooke Ridge residential estate development - Balance Land, Redbank Plains, Qld	2013/6818	Not Controlled Action	Completed	In buffer area only
Grampian Drive residential development, Deebing Heights, Qld	2016/7634	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Inland Rail Gowrie to Kagaru Geotechnical Project, QLD	2018/8263	Not Controlled Action	Completed	In feature area
Master planned residential community, Ripley Valley, QLD	2014/7325	Not Controlled Action	Completed	In buffer area only
Northern Link Parallel Road Tunnels Project	2007/3824	Not Controlled Action	Completed	In buffer area only
REMONDIS Waste to Energy Facility	2020/8806	Not Controlled Action	Completed	In buffer area only
Removal of Grey-headed Flying-fox Habitat	2005/2137	Not Controlled Action	Completed	In buffer area only
Residential/Commercial development Binnies Road, Ripley, Qld	2016/7669	Not Controlled Action	Completed	In buffer area only
Residential Subdivision on Monterea Road, Ripley	2012/6644	Not Controlled Action	Completed	In buffer area only
Ripley Town Centre,Ipswich, QLD	2015/7471	Not Controlled Action	Completed	In buffer area only
South West Transport Corridor	2006/2547	Not Controlled Action	Completed	In feature area
Swanbank Gas Fired Combined Cycle Plant	2008/4087	Not Controlled Action	Completed	In buffer area only
Swanbank Waste Management Facility Stage 1B extension Area, Qld	2015/7581	Not Controlled Action	Completed	In buffer area only
To develop the Paradise Heights residential subdivision, QLD	2014/7310	Not Controlled Action	Completed	In buffer area only
Underground Bus and Train Project, Brisbane	2013/7106	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Not controlled action (particular manner)				
168 Lot Residential and Commercial Development at Deebing Heights	2009/4818	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Construction & Operation 275/330kV Transmission Line	2006/2820	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Cross River Rail	2010/5427	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Paper Mill	2003/915	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

Bioregional Assessments			
SubRegion	BioRegion	Website	Buffer Status
Clarence-Moreton	Clarence-Moreton	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 are 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

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

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

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
- 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 B

NCA Wildlife Online Search Results

Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: Rare and threatened species
Records: Confirmed
Date: Since 1980
Latitude: -27.7072
Longitude: 152.8104
Distance: 5
Email: liambrzezinski@saundershavill.com
Date submitted: Monday 25 Sep 2023 09:33:13
Date extracted: Monday 25 Sep 2023 09:40:02

The number of records retrieved = 9

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Rostratulidae	*Rostratula australis*	Australian painted-snipe		E	E	1
animals	birds	Strigidae	*Ninox strenua*	powerful owl		V		6
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		E	E	15
plants	land plants	Apocynaceae	*Leichhardtia coronata*			V		2/2
plants	land plants	Cupressaceae	*Callitris baileyi*	Bailey's cypress		NT		1/1
plants	land plants	Lamiaceae	*Coleus habrophyllus*			E	E	4/4
plants	land plants	Myrtaceae	*Eucalyptus curtisii*	Plunkett mallee		NT		2/2
plants	land plants	Myrtaceae	*Melaleuca irbyana*			E		9/4
plants	land plants	Poaceae	*Calyptochloa gracillima subsp. ipsviciensis*			CR		2/2

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.*
The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.*
The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).
This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix C

Likelihood of Occurrence Assessment - Matters of National Environmental Significance (MNES)

Likelihood of occurrence assessment

Likelihood of occurrence	Assessment criteria
Unlikely	No previous records of the species within the locality and one or more of the following criteria is met: • Not previously recorded on the referral area and surrounds and the referral area is beyond the current known geographic range; or • Dependent on specific habitat types or resources that are not present on the referral area; or • Considered extinct in the wild.
Low	No previous records of the species within the locality and one or more of the following criteria is met: • Site and local connectivity contains marginal habitat excluding suitable/critical habitat attributes; • Lack of recent records exist in a regional context (use 1980 as a delineation); or • Potential for vagrant or individual of the species to survive short-term;
Moderate	Species previously recorded within the locality and one or more of the following criteria is met: • Previously recorded in proximity to the referral area (*i.e.,* vagrant individuals); or • Potential habitat typologies or resources are present on the referral area.
High	Species previously recorded within the locality and one or more of the following criteria is met: • Previously recorded on the referral area; • Dependent on habitats or habitat resources that are available on the referral area; or • Suitable habitats are available on the referral area that are capable of supporting a resident population or individuals of the species.
Known	Flora species or ecological community positively identified during field surveys within the referral area. Fauna species positively recorded during field surveys within the referral area or adjacent habitats.

Matters of National Environmental Significance						
Name	**Status**	**Type of presence**	**Description of the community/preferred habitat**	**Likelihood of Occurrence Analysis**	**Desktop Likelihood of occurrence (on-site)**	**Field Survey Confirmed Likelihood of occurrence (on-site)**
Wetlands of International Importance (Ramsar)						
Moreton Bay			The site is located approximately 30-40 kilometres upstream of Moreton Bay.	There will be no measurable affect to Moreton Bay.	Unlikely	Unlikely
Threatened Ecological Communities						
Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community	E	Community may occur within area	In Queensland, this ecological community coincides with two regional ecosystem communities including Of Concern RE12.1.1 (*Casuarina glauca* +/- mangroves woodland) as well as areas where the canopy is dominated by *Casuarina glauca* within 12.3.20 (*Melaleuca quinquenervia, Casuarina glauca +/- Eucalyptus tereticornis, Eucalyptus siderophloia* open forest on low coastal alluvial plains).	Desktop analysis and field surveys confirmed that regional ecosystem 12.1.1 and 12.3.20 do not occur on-site.	Unlikely	Unlikely
Grey box-grey gum wet forest of subtropical eastern Australia	E	Community may occur within area	The Grey box-grey gum wet forest at maturity typically has a tall to very tall open canopy dominated by its characteristic Eucalyptus species with or without hoop pine *(Araucaria cunninghammii)*. It can have a simple to structurally complex understorey which typically includes flora with drier vine-forest (rainforest) affliations, with vines often prominent. The canopy of this TEC always contains *Eucalyptus moluccana* (grey box) and/ or a grey gum species (*E. propinqua* (small-fruited grow gum) and/or	Desktop analysis and field surveys confirmed that regional ecosystem 12.9-10.3 and 12.8.14a do not occur on-site	Unlikely	Unlikely

Name	Status	Type of presence	Description of the community/preferred habitat	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
			less commonly *E. punctata* (grey gum)). Other canopy species often present include *E. siderophloia* (grey ironbark) and/or *Araucaria cunninghammii* (hoop pine).			
Lowland rainforest of subtropical Australia	CE	Community may occur within area	This TEC occurs mainly on basalt and alluvial soils and is characteristic of a low abundance of *Eucalyptus, Melaleuca* and *Casuarina* species. Specimens with buttress roots and a diversity of vines are common throughout this TEC. This community is usually associated with REs 12.3.1 (more recently mapped as 12.3.16), 12.5.13, 12.8.3, 12.8.4, 12.8.13, 12.11.1, 12.11.10, 12.12.1, and 12.12.16.	Desktop analysis and field surveys confirmed that regional ecosystem 12.3.1, 12.5.13, 12.8.3, 12.8.4, 12.8.13, 12.11.1, 12.11.10, 12.12.1, and 12.12.1 do not occur on-site.	Unlikely	Unlikely
Poplar Box Grassy Woodland on Alluvial Plains	E	Community may occur within area	The Poplar Box Grassy Woodland on Alluvial Plains ecological community is typically a grassy woodland with a canopy dominated by *Eucalyptus populnea* and understorey mostly of grasses and other herbs. The ecological community mostly occurs in gently undulating to flat landscapes and occasionally on gentle slopes on a wide range of soil types of alluvial and depositional origin. In Queensland, this TEC corresponds with 11.3.2, 11.3.17, 11.3.7, 11.4.12 and 12.3.10.	Desktop analysis and field surveys confirmed that Poplar Box Grassy Woodland on Alluvial Plains do not occur on-site.	Unlikely	Unlikely
Subtropical eucalypt floodplain forest and woodland of the New South Wales	E	Community likely to occur within area	This ecological community is found on alluvial landforms, including floodplains, the riparian zones of parent rivers and other order tributaries, alluvial flats, floodplain/alluvial terraces and periodically flooded depressions. The structure of this TEC varies from tall open forest to woodland. The canopy is dominated by eucalypts and/or other myrtaceous trees, (specifically from Angophora, Corymbia, Lophostemon and Syncarpia genera).	Desktop and field surveys confirmed that no RE's associated with land-zone 3 are present on-site	Unlikely	Unlikely

Name	Status	Type of presence	Description of the community/preferred habitat	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
North Coast and South East Queensland bioregions			A mid-layer or sub-canopy of small trees may be present – with scattered to dense shrubs. For example, Melaleuca, Leptospermum and related genera may form dense thickets beneath the main canopy, or in gaps between canopy trees. Typical examples of tree species include Corymbia intermedia (Pink Bloodwood), Eucalyptus bancroftii (Bancroft's Red Gum), E. moluccana (Grey Box), E. grandis (Flooded Gum), E. siderophloia (Grey Ironbark), and E. tereticornis (Forest Red Gum). In Queensland Syncarpia glomulifera (Turpentine) may also dominate, or co-dominate. Regional Ecosystems generally associated with this TEC where key diagnostic characteristics are met include RE 12.3.2, 12.3.2a, 12.3.3, 12.3.3a, 12.3.3b, 12.3.3d, 12.3.4a, 12.3.7, 12.3.7c, 12.3.7d, 12.3.10, 12.3.11, 12.3.11a, 12.3.11b, 12.3.12, 12.3.14a, 12.3.15, 12.3.19.			
Swamp Tea-tree (*Melaleuca irbyana*) Forest of South-east Queensland	CE	Community likely to occur within area	Low open forest dominated by dense thickets of Swamp Teatree, usually growing to about 8-12 m high. In south-east Queensland, Swamp Tea-tree occurs in monotypic stands uniquely linked to Tea Tree Clay soils which drain slowly after heavy rains, becoming waterlogged and forming temporary ponds. This ecological community comprises Queensland regional ecosystems 12.9-10.11 (Land Zone 9-10) and 12.3.3c (Land Zone 3) which are listed as endangered under the VMA.	Desktop analysis and field surveys confirmed that regional ecosystem 12.9-10.11 and 12.3.3c do not occur on-site.	Unlikely	Unlikely

Name	Status	Type of presence	Description of the community/preferred habitat	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CE	Community may occur within area	Box – Gum Grassy Woodlands and Derived Grasslands are characterised by a species-rich understorey of native tussock grasses, herbs and scattered shrubs, and the dominance, or prior dominance, of White Box, Yellow Box or Blakely's Red Gum trees. In Queensland the ecological community is a primary component of the following Regional Ecosystems: 11.8.2a, 11.8.8, 11.9.9a, 13.3.1, 13.11.8, 13.12.8 and 13.12.9. It can also be a smaller component of the following regional ecosystems: 11.3.23, 12.8.16 (only at the far western edge of the bioregion), 13.3.4, 13.11.3 and 13.11.4. These regional ecosystems range in conservation status from 'not of concern at present' to 'endangered'.	Desktop analysis and field surveys confirmed that regional ecosystems 11.8.2a, 11.8.8, 11.9.9a, 13.3.1, 13.11.8, 13.12.8 and 13.12.9, 11.3.23, 12.8.16, 13.3.4, 13.11.3 and 13.11.4 do not occur on-site.	Unlikely	Unlikely

Scientific name	**Common name**	**Listing Status***		**EPBC code**	**Habitat and Distribution**	**Likelihood of Occurrence Analysis**	**Desktop Likelihood of occurrence (on-site)**	**Field Survey Confirmed Likelihood of occurrence (on-site)**
		EPBC Act	**NC Act**					
Birds								
Anthochaera phrygia	Regent Honeyeater	CE	E	82338	Regent Honeyeaters mostly occur in dry Box-Ironbark Eucalypt woodland and dry sclerophyll forest associations in areas of low to moderate relief, wherein they prefer moister, more fertile sites. These areas are generally associated with creek flats and river valleys and foothills. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. They are a generalist forager, which mainly feed on nectar from a wide range of eucalypts and mistletoes.	The site has been highly modified for historical and contemporary land uses, with scattered vegetation to the north. The site contains scattered *Eucalypts crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum). Mistletoe was noted in a limited number of trees on-site. The species has been recorded within the Ripley/Springfield region with a relatively recent (2019) sighting adjacent to the site. However, given the spatial uncertainty of 10km for this species, the exact location is not known. However, the site contains relatively low value vegetation for the species and lacks significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. It is unlikely the species would utilise the vegetation on-site especially given the abundance	Moderate	Low

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
						of suitable habitat within White Rock Conservation Area to the east.		
Botaurus poiciloptilus	Australasian Bittern	E	-	1001	The Australasian Bittern occurs in terrestrial wetlands and, rarely, estuarine habitats, mainly in the temperate south-east and south-west. It favours wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and / or reeds or cutting grass growing over muddy or peaty substrate. The Australasian Bittern occurs in the far south-east of Queensland; it has been reported North to Baralaba and West to Wyandra, although in most years it is probably confined to a few coastal swamps. It is rarely recorded in Queensland, and possibly survives only in protected areas such as the Cooloola and Fraser regions.	The site does contain several constructed dams although does not contain any terrestrial wetlands or swamps with tall dense vegetation.	Unlikely	Unlikely
Calidris ferruginea	Curlew Sandpiper	CE	E	856	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons	No suitable foraging or breeding habitat occurs on-site.	Unlikely	Unlikely

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
					near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. In Queensland, scattered records occur in the Gulf of Carpentaria, with widespread records along the coast south of Cairns.			
Calyptorhynchus lathami lathami	Southy-eastern Glossy Black-Cockatoo	V	V	67036	This species prefers woodland areas dominated by she-oak Allocasuarina, or open sclerophyll forests and woodlands with a stratum of Allocasuarina beneath Eucalyptus, Corymbia or Angophora. Glossy black-cockatoos have also been observed in mixed Allocasaurina, Casuarina, cypress Callitris and brigalow Acacia harpophylla woodland assemblages. In SEQ west of the Great Dividing Range, they have been observed feeding in remnant belah Casuarina cristata and bulloak Allocasuarina luehmannii forests. This species is also known to utilise appropriate remnant woodlands, and individual or small pockets of Allocasuarina and Casuarina feed trees in urban areas.	The site generally lacks suitable nesting requirements such as large hollow bearing trees as the site is largely treeless open paddocks. Furthermore, Allocasuarina species were absent from the site which lacked subcanopy vegetation as a result of on-going rural land-uses. There are two records of the species within 5km of the site however these are dated records (>20 years old) with the majority records further west associated with White Rock Conservation Park	Low	Unlikely
Climacteris picumnus victoriae	Brown Treecreeper	V	V	67062	The subspecies forages both on the ground and in mature live and dead trees (Bounds 2019),	The site contains scattered native trees species including Corymbia citriodora	Low	Low

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
					feeding on a variety of invertebrate prey including ants, beetles, insect larvae, spiders, moths, flies, cockroaches, termites, and lacewings (Higgins & Peter 2002). Nectar from mugga ironbark (Eucalyptus sideroxylon) and paperbarks, and sap from unidentified eucalypt species are also eaten, along with lizards and food scraps Brown treecreepers (south-eastern) nest and roost in naturally occurring tree cavities in a variety of eucalypt species (Noske 1982b). Hollows in standing dead or live trees and tree stumps are essential for nesting.	(Spotted Gum), Eucalyptus crebra (Narrow-leaved ironbark) and Eucalyptus melanophloia (Silver-leaved Ironbark) however, Eucalyptus sideroxylon is not present. There are very few records of this subspecies in Queensland with the vast majority found in central NSW. The common 'least concern' subspecies *Climacteris picumnus picumnus* is more frequently observed in Queensland.		
Cyclopsitta diophthalma coxeni	Coxen's Fig Parrot	E	E	59714	The Coxen's Fig Parrot occurs in rainforest habitats including subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, and vine forest. Food is mainly taken from figs however other species fruit have been recorded in their diet including *Elaeocarpus grandis, Syzygium corynanthum, Litsea reticulata* and *Grevillea robusta.*	This site does not contain any rainforest habitat, or species represented in this species diet.	Unlikely	Unlikely
Erythrotriorchis radiatus	Red Goshawk	V	V	942	A wide ranging and highly mobile species generally observed over eucalypt habitats. This species prefers forest and woodland with a mosaic of vegetation types, large prey populations (birds) and permanent water. The vegetation types include eucalypt woodland,	The subject site has been subject to historical modification and does not contain the mosaic of vegetation types that this species favours. There is no evidence of permanent residence, and due to the scarcity of this species and	Unlikely	Unlikely

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
					open forest, tall open forest, gallery rainforest, swamp sclerophyll forest and rainforest margins. Habitat has to be open enough for fast attack and manoeuvring in flight, but provide cover for ambushing of prey.	lack of local records, its occurrence is highly unlikely.		
Falco hypoleucos	Grey Falcon	V	V	929	The Grey Falcon usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey. Like other falcons it utilises old nests of other birds of prey and ravens, usually high in a living eucalypt near water or a watercourse; peak laying season is in late winter and early spring. The nests chosen are usually in the tallest trees along watercourses, particularly River Red Gum (*Eucalyptus camaldulensis*) and Coolibah (*E. coolabah*).	The site is highly modified and does not contain the favoured trees for the species. Due to lack of records and preferred habitat it is unlikely the species relies on the subject site.	Unlikely	Unlikely
Geophaps scripta scripta	Squatter Pigeon (southern)	V	V	64440	This species inhabits open grasslands and woodlands typically with a native understorey although may occur in artificial pasture.	While the site contains open paddocks, the species has not been recorded within 5km of the subject site nor are they commonly recorded within the region. The species was not recorded on-site during field surveys.	Low	Unlikely

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Grantiella picta	Painted Honeyeater	V	V	470	The species inhabits mistletoes in eucalypt forests/woodlands, riparian woodlands of black box and river red gum, box-ironbark-yellow gum woodlands, acacia-dominated woodlands, paperbarks, casuarinas, callitris, and trees on farmland or gardens. The species prefers woodlands which contain a higher number of mature trees, as these host more mistletoes. It is more common in wider blocks of remnant woodland than in narrower strips.	The site contains scattered *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) with minimal mistletoe observed. The species has not been recorded within 5km of the site and the species is known to prefer wider blocks of remnant vegetation which are not present on-site.	Moderate	Low
Hirundapus caudacutus	White-throated Needletail	V	V	682	Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. They also commonly occur over heathland, but less often over treeless areas, such as grassland or swamps.	White-throated Needletails are almost exclusively aerial and known to occur over most habitat types. The majority of the site consists of cleared open paddocks where the species is less likely to occur. There are several records of the species within 5km of the referral area including two relatively recent records to the north (2020/2021). However, the majority of records are present within White Rock Conservation Park to the west were large areas of suitable habitat is present.	Moderate	Moderate-Low

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						Given the high mobility of the species and lack of vegetation within the referral area, it is considered unlikely that the species would utilise the site.		
Lathamus discolor	Swift Parrot	CE	E	744	The Swift Parrot breeds in Tasmania during spring to early summer. During autumn and winter the species migrates to the mainland where it follows a nomadic existence linked to the availability and timing of flowering of trees in various locations.	The site does contain suitable foraging habitat in the form of winter flowering species *Corymbia citriodora* (Spotted Gum). The species has not been recorded within 5km of the subject site, however Swift Parrots have been recorded within the Ipswich Local Government Area. Given the general lack of vegetation on-site, the abundance of foraging habitat within White Rock Conservation Area and lack of sightings surrounding the site, it's considered unlikely that this species would utilise the site.	Moderate	Low
Numenius madagascariensis	Eastern Curlew	CE	E	847	The Eastern Curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Occasionally, the species occurs on ocean	No suitable habitat was observed throughout the assessment area.	Unlikely	Unlikely

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					beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. The birds are often recorded among saltmarsh and on mudflats fringed by mangroves, and sometimes use the mangroves. The birds are also found in saltworks and sewage farms.			
Ninox strenua	Powerful Owl	-	Vulnerable	-	Found in open forests and woodlands, as well as along sheltered gullies in wet forests with dense understoreys, especially along watercourses. Will sometimes be found in open areas near forests such as farmland, parks and suburban areas, as well as in remnant bushland patches. Needs old growth trees to nest.	Lack of suitable habitat present. No old growth, remnant vegetation or dense understory. Lack of large hollow-bearing trees.	Low	Unlikely
Rostratula australis	Australian Painted-snipe	E	E	77037	The Australian Painted Snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled. The species has a scattered distribution throughout many parts of Australia, with a single record from Tasmania.	The site contains several, constructed dams. However, vegetation has been highly modified and almost exclusively cleared. There have been two sightings of the species within 5km of the site. One to the north, with a cluster of sightings further north recorded in 1991. A single sighting to the south was within suitable habitat associated with Bundamba Lagoon.	Low	Low

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						The lack of suitable habitat on-site and limited recent sightings of the species indicated it is unlikely the species would utilise the site.		
Stagonopleura guttata	Diamond Firetail	V	V	59398	Diamond firetails occur in eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats, including farmland and grassland with scattered trees. They prefer areas with relatively low tree density, few large logs, and little litter cover but high grass cover	The site does contain suitable habitat for the species being grassland with limited tree density. However, there are no recorded sightings with 20km of the site and few records of the species in Queensland. The majority of sightings are further inland around Toowoomba/Warwick. The species was not observed during field surveys and is considered as having a low likelihood of occurrence.	Low	Low
Turnix melanogaster	Black-breasted Button Quail	V	V	923	Typical habitat occurs in dry rainforest and vegetation immediately adjacent to rainforest. However, the species has also been recorded in a variety of low coastal heathlands around Fraser Island and nearby mainland. Deep leaf litter in which the species can forage appears to be particularly favoured.	The subject site does not contain the species preferred habitat, being dry rainforest, rainforest nor heathlands nor is the vegetation adjoining the site mapped as those habitat types. Historical land uses have resulted in the majority of the site consisting of pasture grasses with no areas of deep leaf litter present. There have been no sightings of the species within 5km of the site with	Unlikely	Unlikely

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						the nearest record being approximately 8km to the west, associated with White Rock Conservation Area. It is considered unlikely that the species would utilise the site.		
Insects								
Argynnis hyperbius inconstans	Australian Fritillary	CE	E	88056	Most specimens have been collected from river estuaries or swampy coastal areas at or near sea level. The Australian fritillary butterfly is restricted to open, swampy, coastal areas where the larval food plant, *Viola betonicifolia*, grows as a small, insignificant ground herb in association with *Lomandra longifolia* (Long Leaved Matrush) and grasses, especially the grass *Imperata cylindrica* (Blady Grass). This habitat is called *Melaleuca* wetlands, although the larval food plant does not occur in all sub-types of this plant community.	The subject site is highly modified and does not contain swampy, coastal areas or Melaleuca vegetation.	Unlikely	Unlikely
Mammals								
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	183	The Large-eared Pied Bat roosts on sandstone cliffs and fertile woodland valley habitat within close proximity of each other. However, in South East Queensland habitat includes	The site does not include rainforest or moist eucalypt forest at high elevations.	Unlikely	Unlikely

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					rainforest and moist eucalypt forest habitats at high elevations.			
Dasyurus hallucatus	Northern Quoll	E	-	331	The Northern Quoll occupies a diversity of habitats across its range which includes rocky areas, eucalypt forests and woodlands, rainforests, sandy lowlands and beaches, shrubland, grassland and desert. Northern Quoll habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal. Eucalypt forest or woodland habitats usually have a high structural diversity containing large diameter trees, termite mounds or hollow logs for denning purposes. Dens are made in rock crevices, tree holes or occasionally termite mounds. Surveys in Queensland suggest that Northern Quolls are more likely to be present in high relief areas that have shallower soils, greater cover of boulders, less fire impact and were closer to permanent water.	The site has been highly modified for rural uses resulting in the majority of the site cleared open paddocks with scattered *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) in the north. While hollows and rocky area were observed, these were generally limited and unlikely to provide suitable denning properties. Furthermore, the site has very limited structural diversity as preferred by the species. There are two recent (2023) sightings within 5km of the site within suitable vegetation at White Rock Conservation Area. Nevertheless, it is considered unlikely that that species would utilise the site given largely treeless environment.	Unlikely	Unlikely
Dasyurus maculatus maculatus	Spot-tailed Quoll	E	E	75184	The Spot-tailed Quoll has a preference for mature wet forest habitat. Unlogged forest or forest that has been less disturbed by timber harvesting is also preferable. This predominantly nocturnal species rests during	As a result of past and on-going land-uses the site has been highly modified resulting in mostly cleared open paddocks devoid of intact vegetation.	Unlikely	Unlikely

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					the day in dens. Habitat requirements include suitable den sites such as hollow logs, tree hollows, rock outcrops or caves. Individuals require an abundance of food such as birds and small mammals, and large areas of relatively intact vegetation through which to forage.	Habitat requirements for the species include suitable den sites such as hollow logs, tree hollows, rock outcrops or caves and large areas of relatively intact vegetation through which to forage. These habitat requirements area generally absent from site. Furthermore, there have been no sightings of the species within 5km of the site.		
Macroderma gigas	Ghost Bat	V	E	174	Ghost bats are known to inhabit large complex caves and old mineshafts.	The subject site has been highly modified consisting primarily of cleared open paddocks. No complex caves are present on-site.	Unlikely	Unlikely
Petauroides volans NCA listed *Petauroides armillatus*	Greater Glider	E	E	254	The Greater Glider is an arboreal nocturnal marsupial that is mostly restricted to eucalypt forests and woodlands, although it occurs in highest abundance in taller, montane, moist eucalypt forests with abundant (large) hollow-bearing trees for shelter and a variety of eucalypt species for feeding. Diet consists of eucalypt leaves, and occasionally flowers. Small home ranges and low dispersibility make this species sensitive to clearing and fragmentation, with low persistence in small forest fragments.	While eucalypts are present on-site as well as Corymbia species to the north, the majority of the site consist of cleared open paddocks. There is a general lack of large hollow-bearing trees. Given the fragmentation of trees on-site and low dispersibility of the species. It is highly unlikely the species is utilising the site at present or in the future.	Low	Unlikely

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Petaurus australis australis	Yellow-bellied Glider	V	V	87600	Occur 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. Den, often in family groups, in hollows of large trees. Very mobile and occupy large home ranges between 20 to 85 ha to encompass dispersed and seasonally variable food resources.	The site is highly modified and contains few scattered Eucalypt trees. The species is known to prefer tall, mature forest with high rainfall. The species has not been recorded within 5km of the subject site and due to the level of modification, is unlikely to occur.	Unlikely	Unlikely
Petrogale penicillata	Brush-tailed Rock Wallaby	V	V	225	This species prefers rocky habitats, including loose boulder-piles, rocky outcrops, steep rocky slopes, cliffs, gorges and isolated rock stacks. It also utilises tree limbs. While it appears that most Brush-tailed Rock-wallaby colonies are on north-facing slopes and cliff lines, colonies have been found on south-facing cliffs in Kangaroo Valley, in the Macleay River Gorge, in the Warrumbungles and at Mt Kaputar, although usually in lower densities.	While rocky areas were observed in the north-western extent of the site, these areas are generally minimal and not likely to provide the preferred habitat for the species. There have been no recorded sightings of the species within 5km of the site. The species has been recorded more frequently approximately 7km to the south associated with Flinders Peak Conservation Park. It is considered highly unlikely that the species would utilise the site	Unlikely	Unlikely

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Phascolarctos cinereus	Koala	E	E	85104	The Koala is found in a range of habitats, from coastal islands and tall eucalypt forests to low woodlands inland.	The site does consist of Koala habitat trees, predominantly *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) with scattered *Eucalyptus tereticornis* (Forest Red Gum). There have been a number of recorded sightings of Koala the within 5km of the site varying from 1987 to 2019 (utilising ALA and Biomaps). Targeted surveys for koala were carried out on-site including two SAT assessments and Scat meanders. In addition, on-going searches for koalas and scats were carried out as part of the tree plot effort. No evidence of scats or direct sightings of koala were recorded on-site. No evidence of the species was recorded on-site despite the site containing koala habitat trees and koala area known to be present in the area. The likelihood of occurrence has been assigned 'moderate'	Moderate	Moderate-Low

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Potorous tridactylus tridactylus	Long-nosed Potoroo	V	V	66645	The Long-nosed Potoroo inhabits coastal heaths and dry and wet sclerophyll forests. Dense understorey with occasional open areas is an essential part of habitat, and may consist of grass-trees, sedges, ferns or heath, or of low shrub of tea-trees or melaleucas. A sandy loam soil is also a common feature.	The site has been subject to high levels of modification and does not contain coastal heaths, dry or wet sclerophyll forests with a dense understorey.	Unlikely	Unlikely
Pseudomys novaehollandiae	New Holland Mouse	V	V	96	Across the species' range the New Holland Mouse is known to inhabit open heathlands, open woodlands with a heathland understorey and vegetated sand dunes. The New Holland Mouse is a social animal, living predominantly in burrows shared with other individuals. The home range of the New Holland Mouse ranges from 0.44 ha to 1.4 ha. The species peaks in abundance during early to mid stages of vegetation succession typically induced by fire.	The preferred habitat for the species including open heathlands and vegetated sand dunes or areas of early to mid-fire succession are not present on-site. Furthermore, there are ver few recorded sightings of the species in Queensland and no sightings within 20km of the site.	Low	Unlikely
Pteropus poliocephalus	Grey-headed Flying-fox	V	-	186	Species generally roosts in camps in trees adjacent to larger permanent watercourse. The Grey-headed flying fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feeds on commercial fruit	The site has been predominantly cleared for historical and contemporary rural uses. However, *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) are present across the northern extent of the site. These species are considered important winter flowering species as identified	Moderate	Moderate-Low

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					crops. The primary food source is blossom from Eucalyptus and related genera.	within the National Recovery Plan for the Grey-headed Flying-fox. No roosts are mapped within the subject site. While the site does potentially provide foraging habitat, limited vegetation on-site in comparison to vast areas of suitable habitat to the east (White Rock Conservation Area) indicates that it is unlikely the species would utilise the site for foraging. The nearest roost is Yamanto (479) approximately 8.5km north-west while the nearest roost of national significance is Inala (1219) approximately 20.2km north-east		
Plants								
Arthraxon hispidus	Hairy-joint Grass	V	V	9338	Hairy-joint grass is found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps, as well as woodland.	No rainforest or wet eucalypt forest habitat is present on, or adjacent to, the site	Unlikely	Unlikely
Bosistoa transversa	Three-leaved Bosistoa	V	-	16091	The Three-leaved Bosistoa is conserved within Mt Warning National Park, Numbinbah Nature Reserve, Limpinwood Nature Reserve and Whian Whian State Forest. While population	Rainforest/wet forest and the species that the Three-leaved Bosistoa is commonly associated with are not present on-site.	Unlikely	Unlikely

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					information is unavailable, it is thought to be common in its range. It generally grows in wet sclerophyll forest, dry sclerophyll forest and rainforest up to 3oo metres in altitude. It is commonly associated with *Argyrodendron trifoliolatum, Syzygium hodgkinsoniae, Endiandra pubens, Dendrocnide photinophylla, Acmena ingens, Diploglottis australis and Diospyros mabacea.*			
Callitris baileyi	Bailey's Cypress	-	NT	-	*Callitris baileyi* grows on rocky slopes, hilly or mountainous areas, in shallow and often clay soils. It is found in eucalypt woodland, commonly associated with ironbark, blue gum and spotted gum. The New South Wales population occurs in an open grassy eucalypt forest near a creek	The preferred habitat for the species is generally absent from the site such as rocky slopes and mountainous areas. While *Euclyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum) are present on-site, comprehensive vegetation surveys did not identify the species on-site	Low	Unlikely
Calyptochloa gracillima subsp. ipsviciensis		-	CR	-	Calyptochloa gracillima subsp. ipsviciensis is endemic to southeast Queensland in the vicinity of Ipswich where it is known from a few small areas. It is an uncommon to dominant species in woodlands dominated by Eucalyptus spp. including E. crebra and E. moluccana and/or Corymbia citriodora subsp. variegate.	The vast majority of the site is cleared and dominated by pasture grasses as a result of historical and on-going rural land-uses. Trees present on-site are almost exclusively *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia citriodora* (Spotted Gum).	Low	Unlikely

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						There has been a single sighting of the species within 5km of the site, adjacent to White Rock Conservation Area in 2012. Field surveys did not record the species on-site which generally shows limited flora diversity.		
Cryptostylis hunteriana	Leafless Tongue-orchid	V	-	19533	Leafless tongue-orchid habitats include wet heath, sedgeland, grasstree plains and in woodland with scribbly gum, silvertop ash, red bloodwood and black she-oak.	No preferred habitat is present on-site	Unlikely	Unlikely
Cupaniopsis shirleyana	Wedge-leaf Tuckeroo	V	V	3205	The Wedge-leaf Tuckeroo occurs in a variety of dry rainforest vegetation types, including vine thicket communities on hillsides, stream beds and along riverbanks at altitudes up to 550 m above sea level. This species is also likely to occur on the margins of native vegetation in scrubby urbanised areas. Predominately found on dark brown sandy loams and sandy clay loams (pH 5-7.5) and rocky scree slopes. Generally, these soils have formed from volcanic parent materials (mainly granites and granodiorites, basalt and andesitic flows, and pyroclastics).	No dry rainforest or vine thicket communities are present on-site	Unlikely	Unlikely

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Cupaniopsis tomentella	Boonah Tuckeroo	V	V	3322	Limited information of Boonah Tuckeroos is available. The species can be described as a small tree to 10m tall that occur in the drier rainforests of the Boonah District.	The species is known to prefer drier rainforest habitat, which is not present on-site. In addition, the site is highly modified and is considered unlikely to occur.	Unlikely	Unlikely
Dichanthium setosum	Bluegrass	V	-	14159	In Queensland, bluegrass has been reported from the Leichhardt, Morton, North Kennedy and Port Curtis regions. *Dichanthium setosum* is associated with heavy basaltic black soils and stony red-brown hardsetting loam with clay. It can be found in moderately disturbed areas such as cleared woodland, grassy roadside remnants, grazed land and highly disturbed pasture. The extent to which this species tolerates disturbance is unknown.	There are no local records of this species within the Queensland Wildlife Online sightings data, with the closest sighting in Toowoomba and surrounds. This species is unlikely to occur on-site due to lack of suitable conditions.	Unlikely	Unlikely
Eucalyptus curtisii	Plunkett mallee	-	NT		*Eucalyptus curtisii* has two growth forms that occur in different habitats. The shorter mallee form is more likely to occur as the only eucalypt species on poorly drained lowland sites in shrubland dominated by banksia, with an understorey of heath plants, and sometimes *E.conglomerata* may also be present. The larger growth form occurs as scattered individuals on better drained soils in the more open areas of mixed eucalypt forests. Commonly associated	The site has been heavily modified for historical and contemporary land-uses resulting in the majority of the site being cleared open paddocks. Comprehensive vegetation surveys did not identify the species on-site	Unlikely	Unlikely

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					species include *Corymbiacitriodora* subsp.*variegata*, *C.trachyphloia* and *Callitris endlicheri*, less commonly associated with *E. fibrosa*, *E.planchoniana* and *E. acmenoides*. *E. curtisii* occurs on sandy podsoils with impeded drainage, shallow stony soils, clay loams and stony clays with a surface layer of loose stones			
Fontainea venosa		V	V	24040	Occurs in notophyll vine forest and vine thicket with a mean annual rainfall of 1000-1100 mm on soils derived from and containing abundant andesitic rocks, often on rocky outcrops or along creeks.	The subject site does not contain vine forest or vine thicket habitat.	Unlikely	Unlikely
Macadamia integrifolia	Macadamia Bush	V	V	7326	The Macadamia Nut grows in remnant rainforest. It prefers to grow in mild frost-free areas with reasonably high rainfall. Vegetation communities range from notophyll mixed forest, extremely tall closed forest, simple notophyll mixed very tall closed forest to simple microphyll-notophyll mixed mid-high closed forest with Araucaria and Argyrodendron emergents.	No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Macadamia tetraphylla	Rough-shelled Bush Nut	V	V	6581	This species generally occurs in subtropical rainforest and complex notophyll vineforest, at the margins of the forests and mixed sclerophyll forest. It occurs in restricted habitat,	No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely

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					growing on moderate to steep hillslopes on alluvial soils at well drained sites.			
Melaleuca irbyana	Swamp Tea-tree	-	E	-	*Melaleuca irbyana* grows in flat areas that are periodically waterlogged, in eucalypt forest, mixed forest and *Melaleuca* woodland with a sparse and grassy understorey. It grows on poorly draining, heavy clay soils.	The entire site is mapped as Category X (non-remnant) vegetation and has been subjected to n-going modification for rural land-uses. Comprehensive vegetation surveys did not identify the species on-site	Low	Unlikely
Notelaea ipsviciensis	Cooneana Olive	CE	E	81858	The Cooneana Olive survives as an understorey plant in degraded, eucalypt dominated dry sclerophyll vegetation communities. Soils in the area are of low fertility, depauperate and sandstone-based. This species prefers open woodland communities with open canopies. The known population is adjacent to subdivided, modified and developed land.	The subject site is highly modified resulting in predominantly cleared open paddocks. Despite the species capacity to survive in degraded environments, field surveys did not identify the species on-site.	Moderate	Low
Notelaea lloydii	Lloyd's Olive	V	V	15002	The species occurs on undulating to hilly terrain either in moist gullies or on gentle to steep dry slopes, but is rarely found on rocky outcrops. Soil types are mostly shallow, well drained and stony to very rocky in texture. Found in the ecotone between eucalypt open forests and vine thickets at 80-480 m above sea level (asl).	The subject site is highly modified, due to the level of modification is it unlikely the site supports the species. Preferred habitat is not present on-site. Field surveys did not record the species on-site.	Low	Low
Leichhardtia coronata	Slender Milkvine	-	V	-	Most commonly found in open eucalypt forest and woodland communities on hillslopes and	Suitable habitat in the form of open eucalypt forest is present on-site albeit	Moderate	Low

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
					ridge tops at altitudes of 40–780 m above sea level. The soils are generally well drained, shallow, vary in texture from sandy, gravelly sand, loam to clay loam and are derived from sandstone or acid volcanic rocks. It has also been found on rocky outcrops along clifflines. Most commonly recorded with Eucalyptus fibrosa (red ironbark), E. carnea (white mahogany), Corymbia citriodora (lemon scented gum), C. henryi (large-leaved spotted gum), Eucalyptus acmenoides (yellow stringybark) and E. propinqua (grey gum) (Halford, 1998)	limited to a small cluster of trees in the north. This are contains predominantly *Corymbia citriodora* (Spotted Gum). The species is known to occur within the South Ripley locality and there are 3 records within 5km of the site. However, these records are all dated (>20 years old). The majority of recorded sightings are within White Rock Conservation Park to the west. The species was not observed on-site during detailed site surveys.		
Picris evae	Hawkweed	V	V	10839	Hawkweed occurs in Eucalyptus open woodland with a grassy understorey composed of Dichanthium spp. Upper stratum species include Eucalyptus melliodora, E. crebra, E. populnea, E. albens, Angophora subvelutina, Allocasuarina torulosa, and Casuarina cunninghamiana	The site does contain elements of open eucalypt woodland confined to the north. However, the vast majority of the site is open paddocks modified through historical and contemporary cattle grazing. There are no records of the species within 20km of the site and the species was not observed during detailed site surveys. Given this species is a ground cover species and the presence of historical	Low	Low

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
						cattle grazing it is considered a low likelihood of occurrence on-site.		
Planchonella eerwah	Shiny-leaved Condoo, Black Plum, Wild Apple	E	E	17340	The species prefers subtropical rainforest, dry rainforest and *Araucaria cunninghamii* vine scrub.	No preferred habitat is located within the subject site.	Unlikely	Unlikely
Plectranthus habrophyllus NCA listed *Coleus habrophyllus*	Shaggy-leaved Plectranthus	E	E	64589	Plants have been recorded growing on chert or sandstone outcrops, in open woodlands often in shaded situations near vine forest. Seven populations are known including: Oxley Creek, Greenbank; Opposum Creek, Springfield; Woogaroo Creek, Goodna; three populations within White Rock Conservation Park, incorporating Six Mile Creek and near Ormeau (south of Beenleigh).	WildNet has recorded the species within 5km of the subject site being known populations within White Rock Conservation Area. Rocky areas were observed in the north west of the site, although these areas were minimal and no *Plectranthus* species were observed.	Moderate	Low
Rhaponticum australe	Austral Cornflower	V	V	22647	Austral Cornflower is known from Mt Moffat to Gatton in Queensland, a distance of 600 km. Austral Cornflower grows in eucalypt open forest with grassy understory on roadsides and on road reserves with Chloris gayana, Cirsium vulgare, Eucalyptus tereticornis and Angophora floribunda on black clay soil.	The site does contain elements of open eucalypt woodland confined to the north. However, the vast majority of the site is open paddocks modified through historical and contemporary cattle grazing. There are no records of the species within 20km of the site with the majority of sightings within the Toowoomba/Warwick region. The	Low	Low

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
						species was not observed during detailed site surveys. Given this species is a ground cover species and the presence of historical cattle grazing it is considered a low likelihood of occurrence on-site.		
Rhodamnia rubescens	Scrub Turpentine	CE	CE	15763	Known to occur from coastal districts of NSW north from Batemans Bay to Bundaberg in Queensland. The distribution occasionally extends inland onto the escarpment up to 600 m ASL in areas with rainfall of 1000-1600 mm. Commonly occurs in all rain forest subforms except cool temperate rainforest. Species occupies a range of volcanically derived and sedimentary soils and is a common pioneer species in Eucalypt forests. Often found in wet sclerophyll associations in rainforest transition zones and Creekside riparian associations. Flowers from late winter through spring, with a peak in October and fruits appear in December in the Sydney region. Habitat is likely to include subtropical rainforests, northern warm temperate rainforests, littoral rainforest, for example.	The subject site does not include rainforest habitat the species is known to prefer.	Unlikely	Unlikely

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
Rhodomyrtus psidioides	Native Guava	CE	CE	19162	Known to occur from coastal districts of NSW north from Gosford to Maryborough in Queensland. Occurrence records are typically restricted to coastal and sub-coastal areas of low elevation however the species does occur up to c. 120 km inland in the Hunter and Clarence River catchments and along the Border Ranges. The species flowers in late spring to early summer, producing fruits in summer. Habitat is likely to include subtropical rainforests, warm temperate rainforests, littoral rainforest, and wet sclerophyll forests.	The subject site does not include rainforest habitat the species is known to prefer.	Unlikely	Unlikely
Samadera bidwillii	Quassia	V	V	29708	Quassia commonly occurs in lowland rainforest or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland. Quassia is commonly found in areas adjacent to both temporary and permanent watercourses in locations up to 510 m altitude. The species occurs on lithosols, skeletal soils, loam soils, sands, silts and sands with clay subsoils.	This species favours lowland rainforest or rainforest margins which are absent from the site, and no local records exist, and thus Quassia is unlikely to be present on site.	Unlikely	Unlikely
Thesium australe	Austral Toadflax	V	V		Austral Toadflax is semi-parasitic on the roots of a range of grass species, notably *Themeda triandra* (Kangaroo Grass). It occurs in shrubland, grassland or woodland, often on damp sites.	Despite Kangaroo Grass being present, the site has been subject to high levels of modification and is unlikely to provide habitat for the species.	Unlikely	Unlikely

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
Reptiles								
Delma torquata	Collared Delma	V	V	1656	In general, the species occurs on rocky hillsides on basalt and lateritic soils supporting open eucalypt and Acacia woodland with a sparse understorey of shrubs and tussocks or semi-evergreen vine thicket.	Potentially suitable habitat in the form of rocky areas were observed on-site in the north-west however these areas are minimal and dominated by *Lantana montevidensis* (Creeping Lantana) which is known to prevent the species from occurring.	Unlikely	Unlikely
Furina dunmalli	Dunmall's Snake	V	V	59254	Dunmall's Snake has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay and clay loams dominated by Brigalow other Wattles, native Cypress or Bull-oak, and various Blue Spotted Gum, Ironbark, White Cypress Pine and Bull oak open forest and woodland associations on sandstone derived soils. Dunmall's Snake occurs primarily in the Brigalow Belt region in the south-eastern interior of Queensland. Records indicate sites at elevations between 200–500 m above sea level. The snake is very rare or secretive with limited records existing. It has been recorded at Archokoora, Oakey, Miles, Glenmorgan, Wallaville, Gladstone, Lake Broadwater, Mount Archer, Exhibition Range National Park, roadside reserves between Inglewood and	No suitable habitat to support this species occurs on-site and no sighting have been recorded east of Toowoomba.	Unlikely	Unlikely

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act					
					Texas, Rosedale, Yeppoon and Lake Broadwater Conservation Park.			
Hemiaspis damelii	Grey Snake	E	E	1179	The grey snake is a relatively small, venomous, front-fanged (proteroglyphous) snake. In Queensland, grey snake habitat is Brigalow *Acacia harpophylla* and Belah *Casuarina cristata* woodlands on heavy, dark brown to black cracking clay soils, particularly in association with water bodies, areas with small gullies and ditches, and floodplain environments where the species shelters beneath logs, rocks and soil cracks.	The preferred habitat of Brigalow *Acacia harpophylla* and Belah *Casuarina cristata* woodlands on heavy, dark brown to black cracking clay soils is not present on-site. There are no records of the species within 10km of the site with the majority of records further west. It is considered a low likihood that the species would occur on-site.	Low	Low

**Status abbreviations are as follows: CE = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened, C = Least Concern, SL = Special Least Concern, - = Not Listed.*

Listed migratory species (not listed above)

Scientific name	**Common name**	**EPBC code**	**Habitat and Distribution**	**Likelihood of Occurrence Analysis**	**Desktop Likelihood of Occurrence (on-site)**	**Field Survey Confirmed Likelihood of Occurrence (on-site)**
Migratory marine birds						
Apus pacificus	Fork-tailed Swift	678	This species is almost exclusively aerial and mostly occur over inland plains but sometimes above foothills or in coastal areas.	The species is considered almost exclusively aerial and is unlikely to rely on the highly modified subject site. In addition, the species has not been recorded within 5km of the subject site.	Unlikely	Unlikely
Migratory terrestrial species						
Cuculus optatus	Oriental Cuckoo	86651	Non-breeding habitat only: monsoonal rainforest, vine thickets, wet sclerophyll forest or open Casuarina, Acacia or Eucalyptus woodlands. Frequently at edges or ecotones between habitat types	While eucalypt species are present. These consists of scattered trees within a modified environment. No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Monarcha melanopsis	Black-faced Monarch	609	The Black-faced Monarch mainly occurs in rainforest ecosystems, including semi-deciduous vine thickets, complex notophyll vine forests, tropical (mesophyll) rainforest, subtropical (notophyll) rainforest, mesophyll (broadleaf) thicket/shrubland, warm temperate rainforest, dry (monsoon) rainforest and occasionally cool temperate rainforest.	No preferred habitat to support this species occurs on-site.	Unlikely	Unlikely
Motacilla flava	Yellow Wagtail	644	This species occupies a range of damp or wet habitats with low vegetation, from damp meadows, marshes, waterside pastures, sewage farms and bogs to damp steppe and grassy tundra.	Preferred habitat for the species is minimal, limited to several constructed dams and surrounding pasture.	Unlikely	Unlikely

Scientific name	Common name	EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of Occurrence (on-site)	Field Survey Confirmed Likelihood of Occurrence (on-site)
Myiagra cyanoleuca	Satin Flycatcher	612	Satin Flycatchers inhabit heavily vegetated gullies in eucalypt dominated forests and taller woodlands, and on migration occur in coastal forests, woodlands, mangroves and drier woodlands and open forests.	No preferred habitat to support this species occurs on-site.	Unlikely	Unlikely
Rhipidura rufifrons	Rufous Fantail	592	The Rufous fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by Eucalypts such as *Eucalyptus microcorys*, *Eucalyptus pilularis*, *Eucalyptus resiniferia* and a number of other Eucalyptus species.	No preferred habitat to support this species occurs on-site.	Unlikely	Unlikely
Symposiachrus trivirgatus as *Monarcha trivirgatus*	Spectacled Monarch	83946	The Spectacled Monarchs natural habitats are subtropical or tropical moist lowland forests, subtropical or tropical mangrove forests, and subtropical or tropical moist montane forests. Its preference is for thick understorey areas.	No preferred habitat to support this species occurs on-site.	Unlikely	Unlikely
Migratory wetland species						
Actitis hypoleucos	Common Sandpiper	59309	The Common Sandpiper utilises a wide range of coastal wetlands and some inland wetlands, including estuaries and deltas of streams, banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and clay pans, and occasionally piers and jetties. They are mostly found in shallow water, around muddy margins or rocky shores and sometimes in muddy areas littered with rocks or snags. The species commonly utilises mangroves for foraging and roosting but is rarely seen on mudflats.	The site contains several constructed dams. However, due to the level of modification and limited habitat the species is unlikely to utilise the site.	Low	Unlikely
Calidris acuminata	Sharp-tailed Sandpiper	874	In Australia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh, and beach	The site contains several constructed dams. However, due to the level of modification and	Low	Unlikely

Scientific name	Common name	EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of Occurrence (on-site)	Field Survey Confirmed Likelihood of Occurrence (on-site)
			cast algae / seaweed or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland. They also occur in salt works and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves.	limited habitat the species is unlikely to utilise the site.		
Calidris melanotos	Pectoral Sandpiper	858	The Pectoral Sandpiper prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. Occasionally found further inland.	The site contains several constructed dams. However, due to the level of modification and limited habitat the species is unlikely to utilise the site.	Unlikely	Unlikely
Gallinago hardwickii	Latham's Snipe	863	Latham's Snipe occurs in permanent and ephemeral wetlands. They usually inhabit open, freshwater wetlands with low, dense vegetation.	The site contains potentially suitable habitat in the form of several constructed dams. However, these dams are void of native trees being cleared cattle grazing paddocks. The Latham's snip has been recorded at constructed dams to the south-east and north of the site as well as Bundamba Lagoon. The high levels of modification within the referral area, no recorded sightings during site surveys and availability of suitable habitat at Bundamba	Moderate	Low

Scientific name	Common name	EPBC code	Habitat and Distribution	Likelihood of Occurrence Analysis	Desktop Likelihood of Occurrence (on-site)	Field Survey Confirmed Likelihood of Occurrence (on-site)
				Lagoon, indicates a low likelihood the species would utilise dams on site is low.		
Pandion haliaetus	Osprey	952	Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers.	The site contains several constructed dams. However, due to the level of modification and limited habitat the species is unlikely to utilise the site.	Unlikely	Unlikely
Tringa nebularia	Common Greenshank	832	The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. The species is known to forage at the edges of wetlands in soft mud or mudflats.	The site contains several constructed dams. However, due to the level of modification and limited habitat the species is unlikely to utilise the site.	Unlikely	Unlikely

Appendix D

SAT results

SAT Survey 1 (02.08.2022)				
Tree Number	**Scientific Name**	**Common Name**	**DBH (mm)**	**Scats**
1	*Corymbia citriodora*	Spotted Gum	260	Nil
2	*Eucalyptus crebra*	Narrow-leaved Ironbark	190	Nil
3	*Corymbia citriodora*	Spotted Gum	250	Nil
4	*Corymbia citriodora*	Spotted Gum	290	Nil
5	*Corymbia citriodora*	Spotted Gum	210	Nil
6	*Corymbia citriodora*	Spotted Gum	230	Nil
7	*Corymbia citriodora*	Spotted Gum	200	Nil
8	*Corymbia citriodora*	Spotted Gum	200	Nil
9	*Corymbia citriodora*	Spotted Gum	180	Nil
10	*Corymbia citriodora*	Spotted Gum	210	Nil
11	*Corymbia citriodora*	Spotted Gum	220	Nil
12	*Corymbia citriodora*	Spotted Gum	210	Nil
13	*Corymbia tessellaris*	Moreton Bay Ash	200	Nil
14	*Corymbia citriodora*	Spotted Gum	300	Nil
15	*Corymbia citriodora*	Spotted Gum	200	Nil
16	*Corymbia citriodora*	Spotted Gum	340	Nil
17	*Corymbia citriodora*	Spotted Gum	270	Nil
18	*Corymbia citriodora*	Spotted Gum	260	Nil
19	*Corymbia citriodora*	Spotted Gum	310	Nil
20	*Corymbia citriodora*	Spotted Gum	200	Nil
21	*Corymbia citriodora*	Spotted Gum	210	Nil
22	*Corymbia citriodora*	Spotted Gum	170	Nil
23	*Corymbia tessellaris*	Moreton Bay Ash	300	Nil
24	*Corymbia citriodora*	Spotted Gum	280	Nil
25	*Corymbia citriodora*	Spotted Gum	170	Nil
26	*Corymbia citriodora*	Spotted Gum	210	Nil
27	*Corymbia citriodora*	Spotted Gum	240	Nil
28	*Corymbia citriodora*	Spotted Gum	190	Nil
29	*Corymbia citriodora*	Spotted Gum	310	Nil
30	*Corymbia citriodora*	Spotted Gum	200	Nil
		Total Trees Recorded with Koala Scats		0
		Total Koala Use (%)		0%
		Total Koala Use (Based on East Coast Low)		Low

SAT Survey 2 (02.08.2022)				
Tree Number	**Scientific Name**	**Common Name**	**DBH (mm)**	**Scats**
1	*Eucalyptus moluccana*	Gum-topped Box	460	Nil
2	*Eucalyptus crebra*	Narrow-leaved Ironbark	210	Nil
3	*Eucalyptus crebra*	Narrow-leaved Ironbark	210	Nil
4	*Eucalyptus crebra*	Narrow-leaved Ironbark	180	Nil
5	*Eucalyptus crebra*	Narrow-leaved Ironbark	100	Nil
6	*Eucalyptus crebra*	Narrow-leaved Ironbark	180	Nil
7	*Eucalyptus crebra*	Narrow-leaved Ironbark	140	Nil
8	*Eucalyptus crebra*	Narrow-leaved Ironbark	160	Nil
9	*Eucalyptus crebra*	Narrow-leaved Ironbark	200	Nil
10	*Eucalyptus crebra*	Narrow-leaved Ironbark	180	Nil
11	*Eucalyptus crebra*	Narrow-leaved Ironbark	180	Nil
12	*Eucalyptus crebra*	Narrow-leaved Ironbark	210	Nil
13	*Petalostigma pubescens*	Quinine Bush	350	Nil
14	*Eucalyptus crebra*	Narrow-leaved Ironbark	220	Nil
15	*Eucalyptus crebra*	Narrow-leaved Ironbark	200	Nil
16	*Corymbia citriodora*	Spotted Gum	250	Nil
17	*Eucalyptus crebra*	Narrow-leaved Ironbark	310	Nil
18	*Eucalyptus moluccana*	Gum-topped Box	520	Nil
19	*Eucalyptus crebra*	Narrow-leaved Ironbark	240	Nil
20	*Eucalyptus crebra*	Narrow-leaved Ironbark	230	Nil
21	*Eucalyptus crebra*	Narrow-leaved Ironbark	140	Nil
22	*Eucalyptus crebra*	Narrow-leaved Ironbark	210	Nil
23	*Eucalyptus crebra*	Narrow-leaved Ironbark	270	Nil
24	*Eucalyptus crebra*	Narrow-leaved Ironbark	210	Nil
25	*Eucalyptus crebra*	Narrow-leaved Ironbark	190	Nil
26	*Eucalyptus crebra*	Narrow-leaved Ironbark	280	Nil
27	*Eucalyptus crebra*	Narrow-leaved Ironbark	150	Nil
28	*Eucalyptus crebra*	Narrow-leaved Ironbark	170	Nil
29	*Eucalyptus crebra*	Narrow-leaved Ironbark	180	Nil
30	*Eucalyptus crebra*	Narrow-leaved Ironbark	170	Nil
Total Trees Recorded with Koala Scats				0
Total Koala Use (%)				0%
Total Koala Use (Based on East Coast Low)				Low

Appendix E

Flora and Fauna species list

Flora Species List (native and introduced)

Scientific Name	Common Name
NATIVE	
Acacia concurrens	Black Wattle
Acacia disparrima	Hickory Wattle
Acacia leiocalyx	Early Flowering Wattle
Amyema bifucata	Bloodwood Mistletoe
Aristida calycina	Dark Wire Grass
Cheilanthes distans	Bristle Cloak Fern
Chrysocephalum apiculatum	Yellow Buttons
Corymbia citriodora	Spotted Gum
Corymbia intermedia	Pink Bloodwood
Corymbia tessellaris	Moreton Bay Ash
Cymbopogon refractus	Barbed Wire Grass
Cynodon dactylon	Green Couch
Dianella caerulea	Blue Flax-lily
Dichondra repens	Kidney Weed
Eleocharis dulcis	Water Chestnut
Eucalyptus crebra	Narrow-leaved Ironbark
Eucalyptus dura	Gum-topped Ironbark
Eucalyptus fibrosa	Broad-leaved Ironbark
Eucalyptus melanophloia	Silver-leaf Ironbark
Eucalyptus moluccana	Gum-topped Box
Eucalyptus tereticornis	Forest Red Gum
Ficus rubiginosa	Rock Fig
Grevillea robusta	Silky Oak
Heteropogon contortus	Black Speargrass
Imperata cylindrica	Blady Grass
Juncus usitatus	Common Rush
Lobelia purpurascens	White Root
Lomandra hystrix	Creek Matrush

Scientific Name	Common Name
Lophostemon suaveolens	Swamp Box
Maclura cochinchinensis	Cockspur Vine
Melaleuca bracteata	Black Tea-tree
Melaleuca viminalis	Weeping Bottlebrush
Murdannia graminea	Slug Herb
Parsonsia straminea	Monkey Rope
Petalostigma pubescens	Quinine Bush
Themeda triandra	Kangaroo Grass
Wahlenbergia queenslandica	Queensland Bluebell
INTRODUCED	
Ageratum houstonianum	Blue Billygoat Weed
Callisia repens	Creeping Inch Plant
Conyza sumatrensis	Tall Fleabane
Corymbia torelliana	Cadaghi
Crotalaria lanceolata	Lance-leaved Rattlepod
Gomphocarpus physocarpus	Balloon Cotton Bush
Heliotropium amplexicaule	Blue Heliotrope
Jacaranda mimosifolia	Jacaranda
Lantana camara	Lantana
Lantana montevidensis	Creeping Lantana
Ludwigia longifolia	Primrose Willow
Mangifera indica	Mango
Megathyrsus maximus	Green Panic
Melinis repens	Red Natal Grass
Nymphaea caerulea	Blue Water Lily
Onopordum acanthium	Scotch Thistle
Opuntia stricta	Common Prickly Pear
Oxalis corniculata	Creeping Oxalis
Paspalum mandiocanum	Broad-leaved Paspalum
Passiflora suberosa	Corky Passion Vine

Scientific Name	Common Name
Senecio madagascariensis	Fireweed
Sida cordifolia	Flannel Weed
Solanum mauritianum	Wild Tobacco
Solanum seaforthianum	Brazillian Nightshade
Solanum torvum	Devil's Fig
Taraxacum officinale	Common Dandelion
Verbena bonariensis	Purple-top Verbena
Murraya paniculata	Mock Orange

Fauna Species List (Native and introduced)

Species Name	Common Name
BIRDS	
Anas superciliosa	Pacific Black Duck
Anthus novaeseelandiae	Australasian pipit
Ardea intermedia	Intermediate Egret
Cacatua sanguinea	Little Corella
Centropus phasianinus	Pheasant Coucal
Chenonetta jubata	Australian Wood Duck
Coracina novaehollandiae	Black-faced Cuckoo-shrike
Corvus orru	Torresian Crow
Cracticus torquatus	Grey Butcherbird
Dacelo novaeguineae	Laughing Kookaburra
Egretta garzetta	Little Egret
Elanus axillaris	Black-shouldered Kite
Entomyzon cyanotis	Blue-faced Honeyeater
Eolophus roseicapilla	Galah
Geopelia humeralis	Bar-shouldered Dove
Gerygone olivacea	White Throated Gerygone
Gymnorhina tibicen	Australian Magpie
Lichenostomus chrysops	Yellow-faced honeyeater
Malurus cyaneus	Superb Fairy-wren
Melithreptus albogularis	White-throated honeyeater
Ocyphaps lophotes	Crested Pigeon
Pardalotus striatus	Striated Pardalote
Petrochelidon ariel	Fairy Martin
Philemon corniculatus	Noisy Friarbird
Platycercus adscitus	Pale-headed Rosella
Rhipidura fuliginosa	Grey Fantail
Rhipidura leucophrys	Willie Wagtail
Threskiornis molucca	Australian White Ibis

Species Name	Common Name
Threskiornis spinicollis	Straw-necked Ibis
Tyto alba	Barn Owl
AMPHIBIANS	
Crinia parsignifera	Beeping froglet
Litoria fallax	Eastern Sedgefrog
MAMMALS	
Macropus giganteus	Eastern Grey Kangaroo

Attachment 2 – Environmental Policy

Environmental Policy

At Stockland we are committed to endeavouring to protect and enhance the natural and built environment. We recognise that a successful future for our business is dependent on the sustainability of the environments, communities and economies in which we operate.

We commit to develop and manage sustainably by:

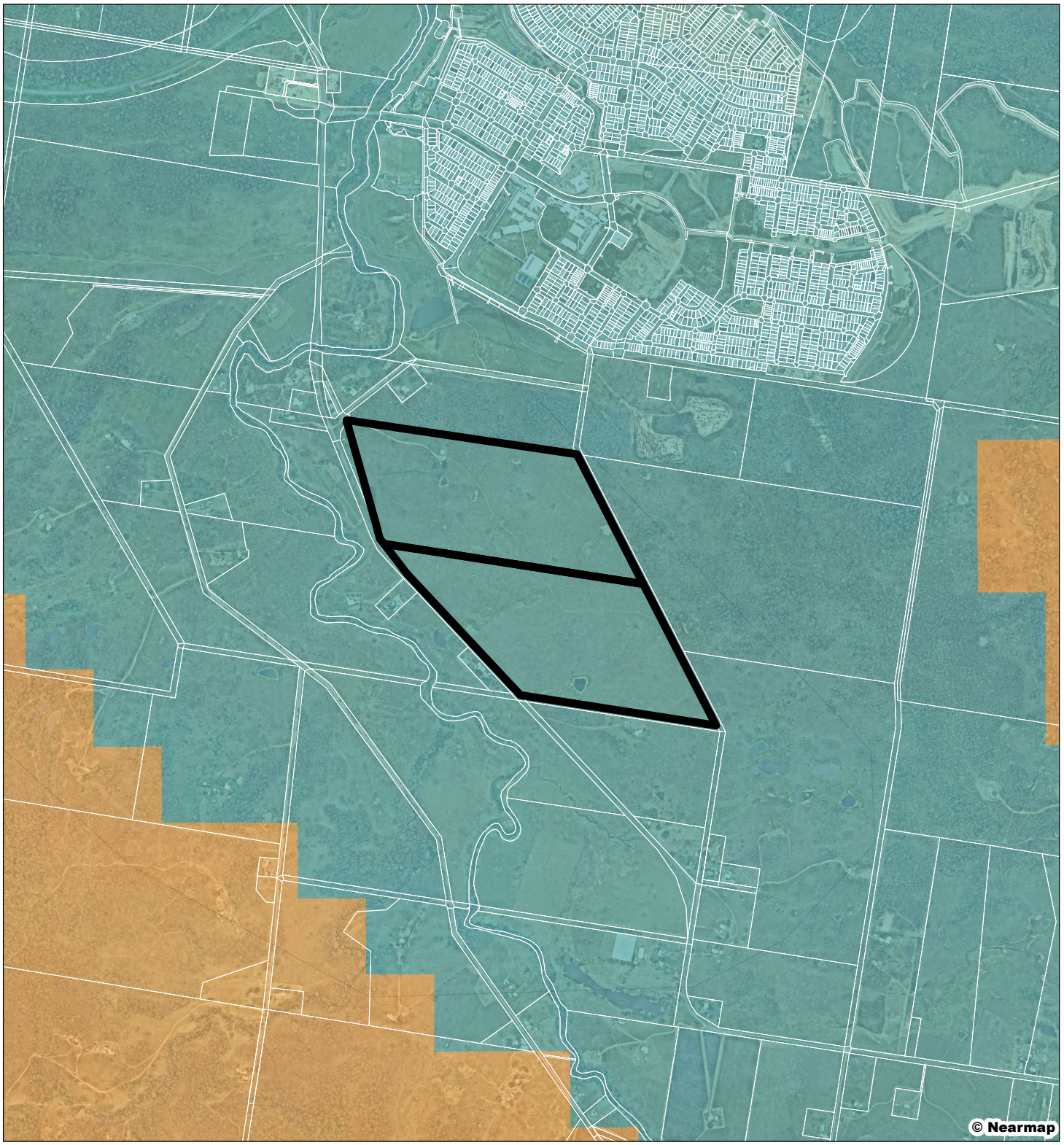
- Positively and proactively contributing to the environment and the communities in which we operate.
- Mitigating and managing the environmental risks and impacts associated with our business activities.
- Complying with legislative and regulatory requirements as a minimum standard.

We will meet these commitments by:

- Taking a leadership role with our business partners to foster, share and promote industry-wide knowledge of leading practice environmental management.
- Working collaboratively with regulators and all levels of government to comply with legislative, regulatory and other requirements, including conditions of approvals that relate to the environmental aspects of our operations.
- Systematically identifying, mitigating and managing the environmental aspects of our operations that we can control or influence across the project lifecycle.
- Taking into account significant environmental impacts in establishing and implementing our environmental management plans.
- Developing a framework for setting and reviewing environmental objectives and targets.
- Monitoring and reporting on key environmental indicators to promote the continual improvement of our environmental performance.
- Planning and implementing strategies to enhance energy efficiency, improve water management and quality, and reduce waste across our assets and developments.
- Where possible, protecting, restoring and enhancing natural environmental systems and associated biodiversity in the regions in which we operate.
- Committing to continual improvement and prevention of pollution.
- Specifying the use of materials that are safe and where possible, specifying the use of materials that are recycled or reused, have low embodied energy and have a reduced impact on resource depletion.
- Engaging with the communities in which we operate to identify, and seek to address, their needs and concerns.
- Providing our employees with the information, training and support necessary to meet our environmental performance objectives.
- Working with our suppliers and contractors so that they understand our environmental performance objectives.
- Encouraging environmentally responsible actions and behaviours among our customers and communities.

Tarun Gupta
Managing Director, Stockland

Attachment 3 – ASRIS soil mapping



Legend

- Site DCDB
- Qld DCDB

Australian Soil Classification

- Chromosols
- Sodosols

Attachment 3

ASIRIS Soil Classification (Level 5)

Stockland

File ref. 11081 E Figure 5 ASRIS Soils A
Date 22/12/2023
Project Ripley Road, South Ripley

0 200 400 600 800 m

N

Scale (A4): 1:20,000 [GDA 2020 MGA Z56]

saunders havill group

Attachment 4 – Referral Information request response

EPBC referral - Information Request Response

EPBC ref - 2023/09690
Prepared for AW Bidco 6 Pty Ltd
3 June 2024

Urban Development Project – 944 to1024 Ripley Road, South Ripley, Queensland 4306

Introduction

The Saunders Havill Group (SHG) act on behalf of AW Bidco Pty Ltd with respect to environmental matters associated with their proposed development at 944-1024 Ripley Road, South Ripley, Queensland 4306 (described as Lot 241 and 242 on SL10253). On the 22 of January 2024, the proposed action (development) was referred to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for a controlled action assessment under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). Subsequent to that referral being properly made, an information request was issued by the DCCEEW on 6th of February 2024 (refer **Attachment A**). This memo provides a response to the additional information requested to help facilitate the controlled action determination.

For reference, this response should be read in conjunction with the Matters of National Environmental Significant (MNES) Technical Report prepared by SHG (dated 20th October 2023) that was submitted as supporting documentation under the EPBC Act referral (2023/09690).

Response

For ease of reference, the following response is broken into the respective MNES species for which further information was requested.

***Phascolarctos cinereus* (Koala)**

Site Context

In order to assess the presence of Koala habitat within the referral area, it is first imperative to understand the context of the site in the broader locality. The site is centrally located within the Ripley Valley Priority Development Area (PDA) and is zoned completely as 'Urban Living' under the Ripley Valley Development Scheme (refer **Attachment B** - **Plan 1**), indicating that the referral area is not strategically located to provide any corridor functionality at present or in the future. The referral area is bound by Ripley Road to the west, which has received catalyst funding from the Queensland Government for an upgrade to provide a significant transport link necessary for the PDA. The land holding to the north contains scattered vegetation with a mix of non-remnant and State mapped Category C (regrowth) communities. This adjoining parcel is also 100%

zoned 'Urban Living' under the Ripley Valley Development Scheme and has a live application with Ipswich City Council that proposes full residential development over the land. The property to the east maintains a current EPBC Act approval, with vegetation proposed to be cleared adjacent to the project site as per the 'Urban Living' zoning (**Attachment B** - **Plan 1**). Fauna connectivity value at present is significantly limited and it is only likely to be further limited upon the expected delivery of surrounding development as per the intent of the PDA.

The referral area itself is a highly modified and maintained rural property where land management has ensured the primary use of cattle grazing is maximised, resulting in predominantly cleared open paddocks. In the north-west of the referral area, farm infrastructure (sheds, fences, tracks and a residential dwelling), as well as exotic planted species are present. Native trees are considered sporadic and isolated in the north-west of the referral area. Utilising aerial imagery and from detailed on-site surveys, it is apparent that the referral area does not retain optimal or effective connectivity value both within the referral bounds, as an almost completely treeless paddock, or for the broader locality. On the contrary, the referral area is so evidently lacking trees that the vast areas of open paddocks can be considered a potential barrier to Koala movement within the local environment.

Site Surveys

The referral area was assessed in the filed throughout June, July and August 2022 and again in March and April of 2024 over the following dates:

- 22 June 2022
- 26 July 2022
- 1 August 2022
- 2 August 2022
- 8 March 2024
- 17 April 2024

The field assessments undertaken included targeted searches (Spot Assessment Technique and scat meander assessment), individual tree plotting, and observation surveys (refer MNES Technical Report).

Importantly, targeted searches whereby all individual trees were assessed returned **no evidence of Koala (either direct or indirect)** within the referral area. These results further highlight the lack of suitable habitat, limited connectivity within the referral area, high rates of fragmentation and prevalence of risk factors indicating only a remote possibility that any individual Koalas would utilise this vegetation at present or in the future.

Koala Habitat Assessment

Koala habitat as per the relevant conservation advice is broadly defined as an area containing Koala habitat trees. Specifically, DCCEEW define Koala habitat as '*an area of habitat with all the necessary resources for the persistence of a population or fall within individual koala's home ranges and allow for interaction with adjacent individuals. A habitat patch can be isolated or connected to other habitat patches and may include rail/road-side vegetation or areas of vegetation interspersed throughout urban or highly fragmented landscapes*' (DCCEEW 2022a).

The referral area consists almost entirely of cleared paddock with some scattered and relatively isolated potential Koala food trees in the north-west of the lot (refer **Photo set 1**). A vegetation polygon (2 ha) as depicted in the referral on Plan 7 Vegetation Communities was identified in the north-west of the referral area as providing greater Koala tree density relative to the balance of the site although apparent connectivity potential to the north is limited by the predominance of open and maintained paddock values. This area was recognised as satisfying the requirements of Koala habitat defined as 'Isolated and scattered ancillary Koala habitat trees.' A series of transects were undertaken within the north-west of the referral area to provide additional quantifiable data on the density of Koala trees and further justification for the vegetation communities identified on ground (refer **Attachment B** - **Plan 4**). Transects were extrapolated to give an estimate of Koala trees per hectare and highlight that the vegetation identified as 'Isolated and scattered ancillary Koala habitat trees' (reflective of defined Koala habitat) showed on average greater canopy cover (44.8%) and density (128 / ha) compared with that of adjoining 'isolated trees in paddocks' (0% canopy cover and 11.33 Koala trees per ha) with the latter not considered reflective of Koala habitat (refer **Table 1** for summary of transect data and **Attachment C** for transect data).

Photo set 1: Northern boundary of referral area. Vegetation communities identified as 'Scattered trees and paddocks' (left) and 'Isolated and scattered ancillary koala habitat trees' (right)

Table 1: Summary of Transect Data

Transect ID	Canopy cover	Sub-canopy Cover	NJKHT density (per ha)
'Isolated and scattered ancillary Koala habitat trees'			
T 1	48.9%	7.20%	106
T 5	40.7%	5.80%	150
Average	**44.8%**	**6.5%**	**128**
'Isolated trees and paddocks'			
T 2	0%	8.8%	26

Transect ID	Canopy cover	Sub-canopy Cover	NJKHT density (per ha)
T 3	0%	8.3%	8
T 4	0%	0%	0
Average	**0%**	**5.7%**	**11.33**

The definition of Koala habitat further states that *'size measurements involving habitat patches should include any isolated locally important Koala trees or patches of those trees within a distance regularly traversed by Koalas in that region, as well ancillary habitat elements including the ground between the trees.'*

Here it is important to distinguish between the distance a Koala is 'capable' of traversing and a distance a Koala will 'regularly' traverse as stated in the definition. Barth et al (2019) analysed the movement of individual Koalas utilising GPS across different habitat types. Results from this study showed that the median daily distance moved for all Koalas assessed was 22.4 m, and that 'large movements were infrequent in all habitat types with 85% of all daily movement less than 100 m.' **Plan 2** at **Attachment B** demonstrates distances mapped between Koala trees immediately outside of the 2 ha polygon that was identified as Koala habitat on-ground. Taking distances greater than the median to not be regularly traversed, scattered trees outside the polygon are therefore considered beyond those frequently traversed by the species. In comparison trees within the polygon are frequently within the median distance frequently moved by the species. Furthermore, these scattered and isolated trees do not facilitate movement to larger patches of intact habitat which are lacking.

Based on the two additional detailed assessments provided herein, the mapped Koala habitat trees have not been included within the Koala habitat patch on-site and have been defined as 'isolated trees and paddocks.'

As part of the original referral material, a significant impact assessment was undertaken for Koala. Following additional field work this assessment was expanded (**Attachment E**). The conclusion of this assessment was that the proposed action was unlikely to have a significant impact on the species given the overriding lack of suitable habitat, high disturbance and fragmentation and lack of connectivity potential, and no evidence of the species utilising the referral area.

***Calyptorhynchus lathami lathami* (South-eastern Glossy Black Cockatoo)**

The Glossy Black Cockatoo relies upon two specific habitat types for foraging and breeding. Foraging habitat is defined as vegetation containing *Casuarina* or *Allocasuarina* species. In South-east Queensland these are usually represented by *Allocasuarina littoralis* (Black She-oak) and *Allocasuarina torulosa* (Forest She-oak). The Glossy Black Cockatoo is known to be highly selective of individual feed trees, and a dense subcanopy of *Casuarina or Allocasuarina* species is required to provide suitable foraging habitat.

Breeding habitat is understood to be equally selective with a preference for specific hollow characteristics. As a guide, the *Conservation Advice for Calyptorhynchus lathami lathami (South-eastern Glossy Black Cockatoo)* (DCCEEW 2022b) states that hollows for the species have the following specifications:

- *>8 m above ground;*
- *Located in branches >30 cm in diameter;*

- *Branch or stem no more than 45° from vertical; and*
- *Minimum entrance diameter of >15 cm.*

The referral area is a highly modified rural property that stands out in the landscape as being almost completely devoid of noteworthy vegetation, with the shrub layer generally non-existent due to on-going grazing uses. As stated, Glossy Black Cockatoo requires dense stands of *Allocasuarina* and/or *Casuarina* species as foraging habitat and these are not present within the referral area, not even as scattered individual specimens. Therefore, there is no suitable foraging habitat within the referral area for this species.

Furthermore, given the specific habitat requirements for the species, areas identified as containing suitable foraging habitat by the State and overall records of Glossy Black Cockatoo are largely absent within the broader locality, as shown on **Plan 3** at **Attachment B**. From available mapping it is expected that suitable foraging habitat for the species is present at White Rock Conservation Park approximately 3 km to the east where records of the species occur within 4 km of the site.

The general lack of vegetation within the referral area and dominance of open paddocks results in extremely limited breeding habitat as identified by only 15 hollow-bearing trees being recorded across the site. Further information has been provided on the potential for these trees to provide suitable breeding hollows. Additional field surveys occurred on the 11 March 2024 whereby all 15 hollow-bearing trees were revisited with a particular focus on recording the specific requirements stated in the conservation advice listed above.

As an additional assessment method, where possible, hollows were assessed utilising an extendable nest box camera. The ability to assess each hollow was limited by the height and angle of each hollow. Hollows >8m in height were out of reach for this set up while the orientation of the hollow within the tree (i.e. not vertical) limited the ability for the camera to clearly picture the whole hollow. Regardless, an indication of hollow usage where accessible was obtained (refer **Photo set 2** for examples).

Photo set 2: Examples of hollows assessed with camera.

Of the 15 hollow-bearing trees, only one (1) hollow was identified as meeting all the requirements for the species (Tree 280, hollow 3, refer **Attachment B - Plan 5** and **Attachment D** for hollow assessment of the

referral area). While most hollows observed did meet at least one of the criteria, it is considered that the main limiting factor is hollow-entrance diameter. Focusing on this parameter, only 15 hollows were observed as having an entrance diameter greater than 150 mm diameter, with only one containing all other requirements listed in the conservation advice (**Attachment B - Plan 5** and **Attachment D**). Of note, the single tree found to meet all listed hollow criteria on site is located immediately adjacent to Ripley Road, which is scheduled to be upgraded in future and therefore considered relatively compromised from a habitat availability and longevity perspective.

No fauna species were observed utilising hollows assessed via camera, however, eggs assumed to be avian were observed in one location (Tree 237, hollow 5, **Attachment B** - **Plan 5** and **Attachment D**). While it is not possible to identify the species from the image, Glossy Black Cockatoos only lay a single egg during nesting and given there is a cluster of eggs, this species is discounted (see **Photo Set 2**).

The referral area retains very few trees and far fewer that are mature and hollow-bearing. Detailed field surveys identified only 1 hollow on-site which meets all the listed requirements for potential breeding habitat for the Glossy Black Cockatoo. Therefore, the overall presence of suitable breeding habitat is considered extremely limited. It would be considered highly unlikely that the species would utilise scattered paddock trees containing almost entirely unsuitable breeding habitat especially in consideration of the relative availability of suitable breeding and foraging habitat associated with the White Rock Conservation Park.

Due to the absence of foraging habitat and significantly limited breeding habitat a significant impact assessment was not conducted during the initial referral assessment. Although the referral area is considered unlikely to provide critical habitat to support an important population of Glossy Black Cockatoo, further assessment against the significant impact criteria is provided as part of this assessment (**Attachment F**). The conclusion of this assessment was that the proposed action was unlikely to have a significant impact on this species most notably given the lack of suitable habitat both in a breeding and foraging capacity and general lack of records in the area.

Summary

Under the *Significant Impact Guidelines 1.1* definition, a significant impact is considered likely if *'a significant impact on the environment is a real or not remote chance or possibility.'* The results of the significant impact assessment provided as part of the MNES Technical Report contained within the referral as well as supplementary information provided in this response concludes that there is a remote chance or possibility that the project will have a significant impact on Koala, Glossy Black Cockatoo or any other MNES species. These results are based most notably on the lack of historical and contemporary records, the lack of potentially suitable habitat or connectivity potential and overall, highly modified environment of both the referral area and the surrounding landscape.

Should you have any questions or queries related to this further information response or you require a meeting to discuss, please do not hesitate to contact me on (07) 3251 9422 or liambrzezinski@saundershavill.com

Yours sincerely
Saunders Havill Group

Liam Brzezinski
Senior Ecologist

References

ANU (2021) '*A review of koala habitat assessment criteria and methods'* Australian National University (2021)

Barth, B.J. *et al.* (2020) *'Scattered paddock trees and roadside vegetation can provide important habitat for koalas (Phascolarctos cinereus) in an agricultural landscape'*, Australian Mammalogy, 42(2), p. 194.

DCCEEW (2022a) *'Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory'* Department of Climate Change, Energy the Environment and Water (2022)

DCCEEW (2022b) *'Conservation Advice for Calyptorhynchus lathami lathami (South-eastern Glossy Black Cockatoo)'* Department of Climate Change, Energy the Environment and Water (2022)

DoE (2013) 'Matters of National Environmental Significance Significant impact guidelines 1.1Environment Protection and Biodiversity Conservation Act 1999' Department of Environment

Attachments

Attachment A

2023/09690 Information Request

Attachment B

Supporting plans

Attachment C

Transect data

Attachment D

Hollows data sheets

Attachment E

Significant impact assessment – Koala

Attachment F

Significant impact assessment – Glossy Black Cockatoo

Attachment A

2023/09690 Information Request

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

EPBC ref: 2023/09690

Mr Liam Brzezinski
Senior Ecologist
Saunders Havill Group Pty Ltd
liambrzezinski@saundershavill.com
9 Thompson St
Bowen Hills QLD 2004

Request for further information for 2023-09690 AW Bidco 6 Pty Ltd - Urban Development Project (proposed Action)

Dear Mr Brzezinski

Thank you for referring a proposed action under section 68 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Our initial examination of your referral indicates that there is insufficient information to allow us to consider all the relevant issues.

Could you please provide the following further information:

- The evidence, ecological reasoning and reference sources informing the exact location and boundary selection of the area of "Isolated and scattered ancillary Koala habitat trees" as shown in Plan 7. Vegetation Communities from *Att 1 11081 MNES Report 2023.10.20*. This information should clarify the decision-making underpinning the initial referred boundary and any further boundary considerations that are supported by evidence.
- Further evidence or justification of the selection of the "small area (2ha) [...] mapped as providing trees which are consistent with koala habitat". Please expand on the reasoning behind limiting Koala (*Phascolarctos cinereus*) habitat to that 2ha area, with reference to the descriptions of habitat critical to the survival of the Koala provided in the published conservation advice, recovery plan, and material provided by the department in referral guidance: Referral guidance for the endangered koala - DCCEEW.
- Maps that clearly show areas of koala habitat and areas (including location and quantity) of koala habitat impacted. Maps/diagrams should show area (in hectares) and dimensions (such as width) where appropriate. All maps provided should be of sufficient quality and at sufficient resolution to enable decision-making.
- Details of possible roosting sites and suitable hollow bearing trees and stags identified on site for the Listed Threatened Species: *Calyptorhynchus lathami lathami* (South-eastern Glossy Black-Cockatoo). We refer you to the *Conservation Advice for Calyptorhynchus lathami lathami* (South-eastern Glossy Black Cockatoo) and the Breeding Habitat section on pgs. 5-6.
- For each of the hollow bearing trees identified onsite in the Referral and *Att 1 11081 MNES Report 2023.10.20* documents, please provide:

- Height of hollows above ground.
- Diameter of branches where hollows are located.
- Whether the branches or stems are no more than 45 degrees from vertical
- Whether the entrances to the hollows are >15cm

In any correspondence with the department please quote the title of the proposed Action and EPBC reference, as shown at the beginning of this letter. You can send information to us:

By letter:
Queensland South Assessment Section
Environment Assessments QLD Branch
Department of Climate Change, Energy, the Environment and Water
GPO Box 3090
CANBERRA ACT 2601

By email: memento.hudson@dcceew.gov.au

CC: queensland.south.assessments@dcceew.gov.au
hannah.zurcher1@dcceew.gov.au

Please note, under subsection 520(4A) of the EPBC Act and regulation 5.19 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (EPBC Regulations), your referral is subject to cost recovery for the request to provide specific information.

An invoice for $1,701.00 will be sent to the project's nominated entity responsible for payment.

Further details regarding cost recovery can be found on the department's website.

We would appreciate your response to this request for information by 20th of February 2024. Please note that in accordance with section 75(6) of the EPBC Act, on the date of this letter, the statutory timeframe for making a decision under section 75 (and section 87 if relevant) is suspended (i.e., the 'clock stops') and restarts (next business day) once satisfactory information has been received and any outstanding fees have been paid, if not exempt or waived. In the event that the proposed Action is determined to be a controlled action, the timing for a decision on an assessment approach also stops on the date of this letter.

If you have any questions about the process or this request for information, please contact the department's project manager, Memento Hudson, by email to memento.hudson@dcceew.gov.au and quote the EPBC reference number shown at the beginning of this letter.

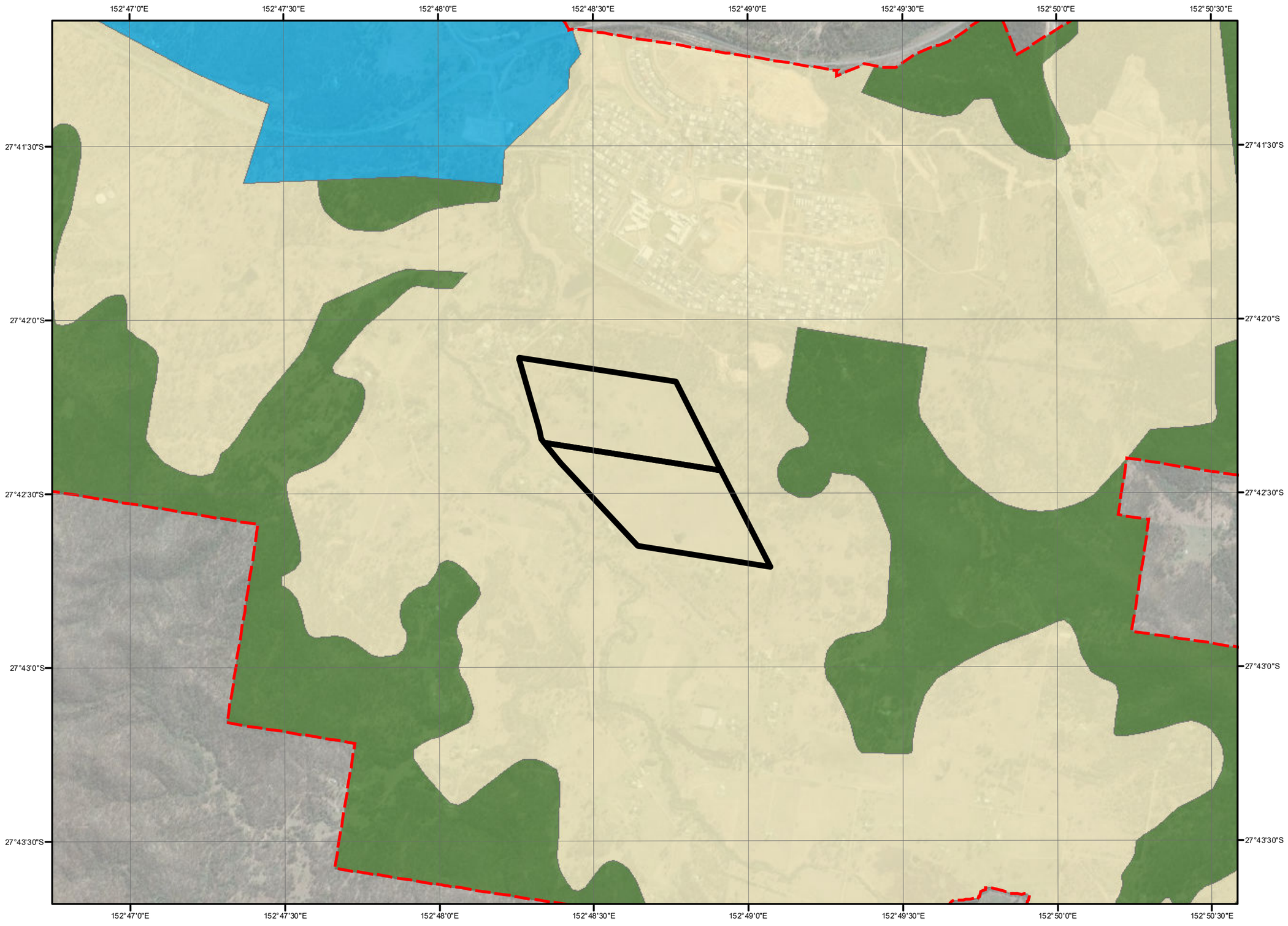
Yours sincerely

George Morris, Director, Queensland South Assessments Section
George Morris
Director
Queensland South Assessments Section
6th February 2023

Attachment B

Supporting plans

5. Ripley Valley PDA



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources

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Updated data available at
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Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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Legend

- Site DCDB
- Ripley Valley PDA Boundary

PDA Zoning

- Urban Core
- Urban Living
- Environmental Protection

Issue	Date	Drawn	Checked
A	27/05/2024	TF	LB

0 200 400 600 m

1:20,000 @ A3

saunders havill group

Stockland

Ripley Road, South Ripley

Transverse Mercator | GDA 2020 | Zone 56 |

Address: Lots 241 and 242 on SL10253

27/05/2024 | 11081 E 05 Ripley PDA A

2. Koala Habitat Assessment

Notes:
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Legend

- Site DCDB
- Qld DCDB
- Fence line (northern property)
- GPS Tree Plot (DBH ≥ 200mm)
- Distance between trees ≥ 200mm DBH within scattered trees and paddocks area (Average: 41.2 metres)
- <20m between trees
- Distance between scattered trees ≥ 200mm DBH within isolated and scattered ancillary Koala habitat trees area (Average: 26.3 metres)

Vegetation Communities

- Scattered trees and paddocks - 74.9 ha
- Isolated and scattered ancillary Koala habitat trees - 2 ha
- Dams - 0.9 ha
- Exotic/planted species

Issue	Date	Drawn	Checked
A	30/05/2024	TF	LB

0 10 20 30 40 50 m
1:1,200 @ A3

saunders havill group
Stockland

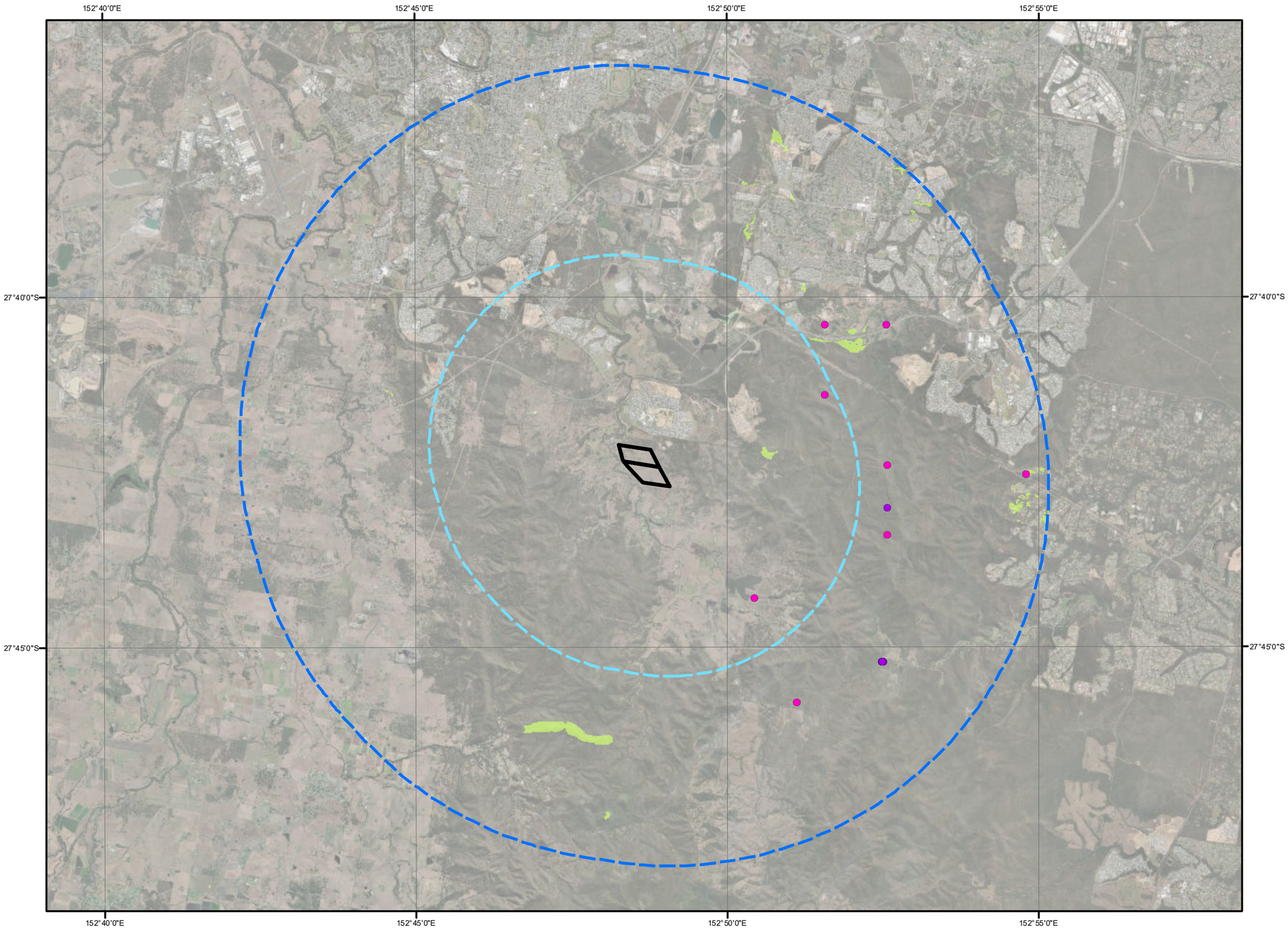
Ripley Road, South Ripley

Transverse Mercator | GDA 2020 | Zone 56 |

Address: Lots 241 and 242 on SL10253

30/05/2024 | 11081 E 02 KH Assessment A

3. Glossy Black-cockatoo Habitat and Records



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Legend

- Site DCDB
- 5KM Site Buffer
- 10KM Site Buffer
- Glossy Black-Cockatoo Records within 10KM of site [ALA, 2023] [5]
- Glossy Black-Cockatoo (Eastern) Records within 10KM of site [ALA, 2023] [8]
- Potential and Known Glossy Black-cockatoo Habitat within 10KM of site - 0.4%

Issue	Date	Drawn	Checked
A	27/05/2024	TF	LB

0 1 2 3 km

1:100,000 @ A3

saunders havill group

Stockland

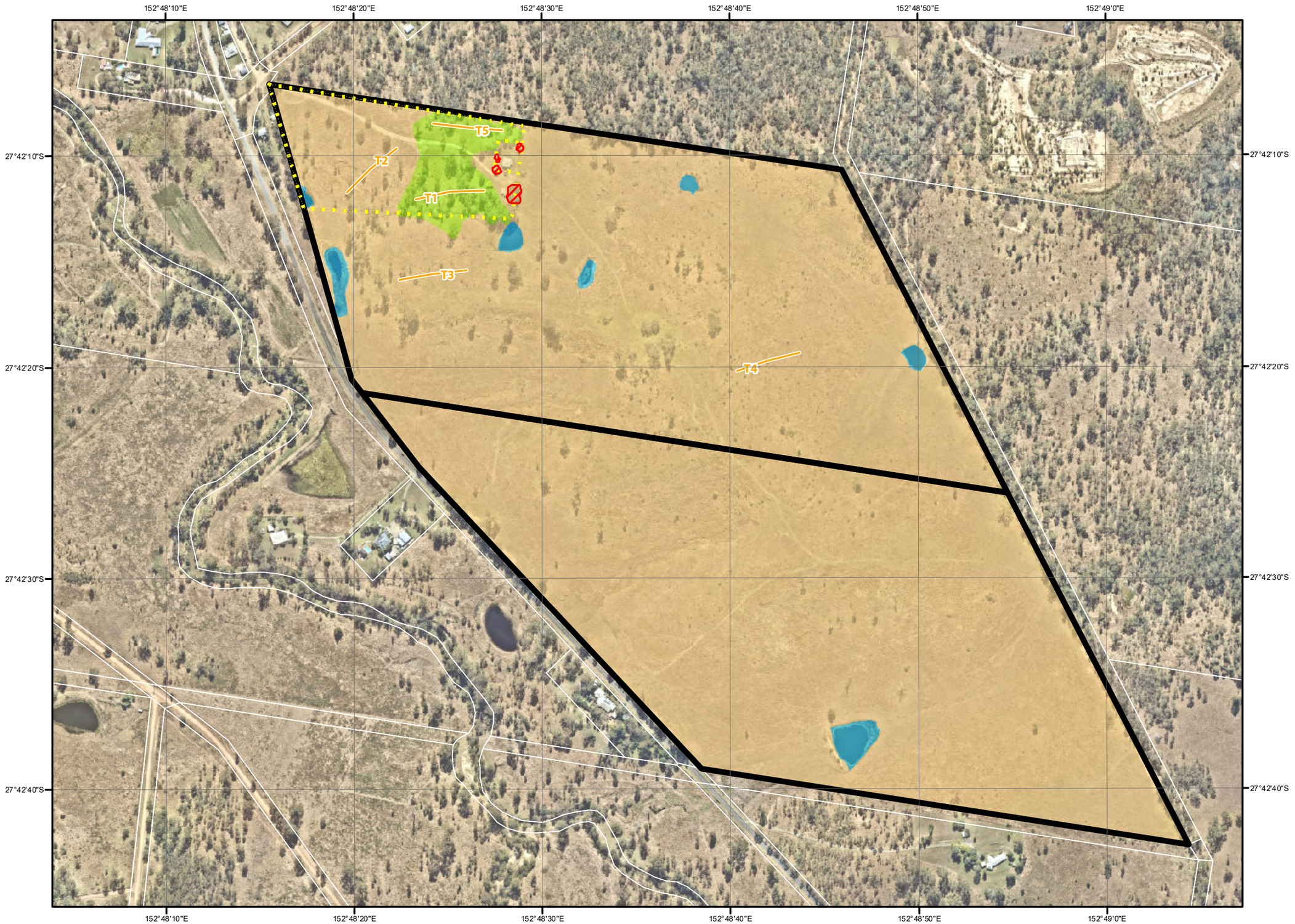
Ripley Road, South Ripley

Transverse Mercator | GDA 2020 | Zone 56 |

Address: Lots 241 and 242 on SL10253

27/05/2024 | 11081 E 03 GBC Habitat A

4. Koala Habitat Assessment Continued



Notes:
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Legend

- Site DCDB
- Qld DCDB
- Fence line (northern property)
- Transects

Vegetation Communities

- Scattered trees and paddocks - 74.9 ha
- Isolated and scattered ancillary Koala habitat trees - 2 ha
- Dams - 0.9 ha
- Exotic/planted species

Issue	Date	Drawn	Checked
A	27/05/2024	TF	LB

0 50 100 150 200 m

1:5,500 @ A3

Transverse Mercator | GDA 2020 | Zone 56 |

Address: Lots 241 and 242 on SL10253

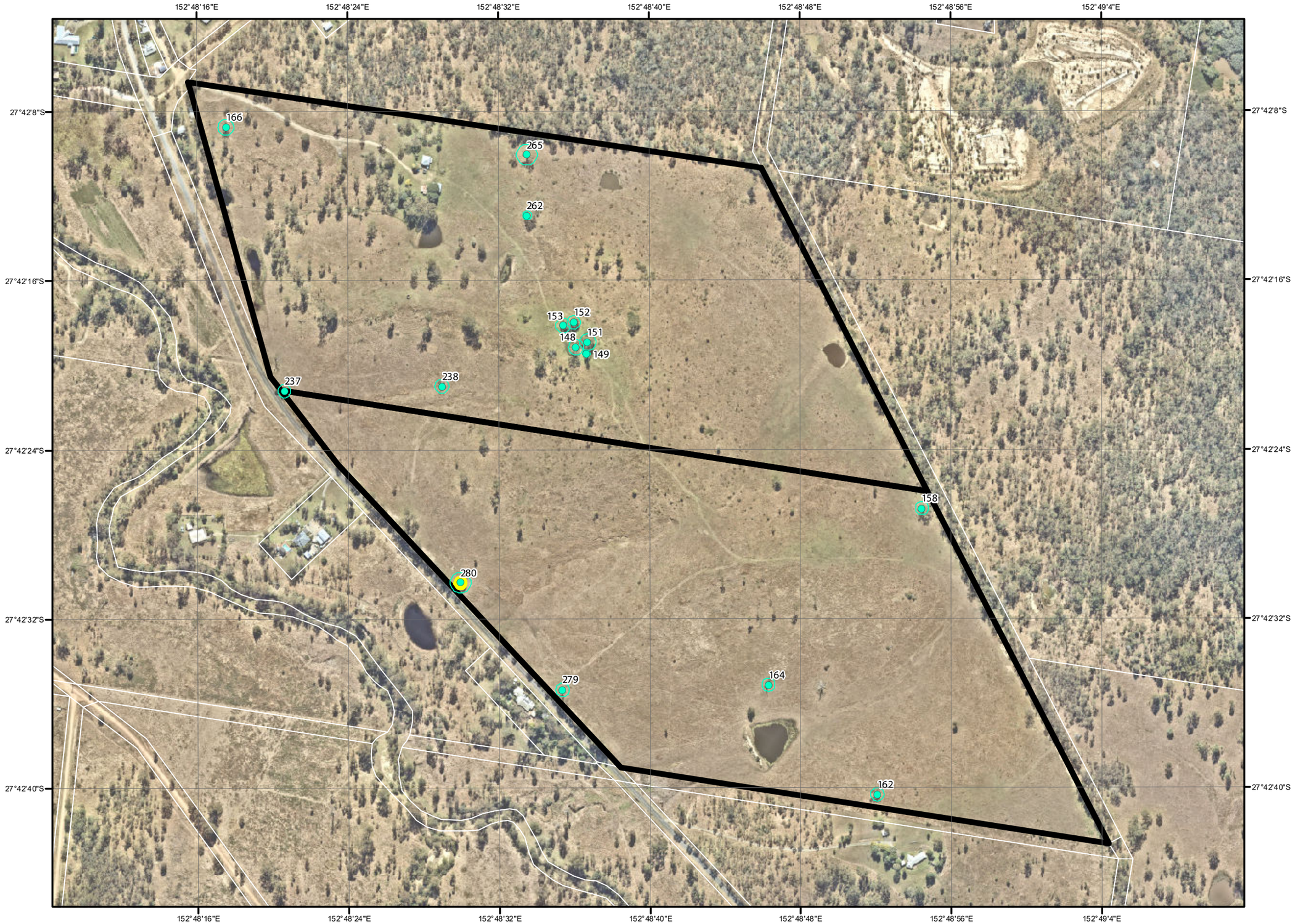
27/05/2024 | 11081 E 03 KH Assessment A

saunders havill group

Stockland

Ripley Road, South Ripley

5. Hollows Assessment



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources

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Legend

- Site DCDB
- Qld DCDB
- Hollow bearing tree (w/ TPZ)
- One hollow meets all requirements for the Glossy Black-cockatoo

Issue	Date	Drawn	Checked
A	27/05/2024	TF	LB

0 50 100 150 200 m

1:5,500 @ A3

saunders havill group

Stockland

Ripley Road, South Ripley

Transverse Mercator | GDA 2020 | Zone 56 |

Address: Lots 241 and 242 on SL10253

27/05/2024 | 11081 E 04 Hollow Assessment A

Attachment C

Transect data

Transect assessment

Administrative

Transect ID	T1	Job Number / Property		11081

Site Data

Recorders		LB/CM	Date	17.04.2024

Site description and Location (including details of discrete polygons within the assessment unit)
Within the area identified as 'isolated and scattered ancillary koala habitat trees' mapped as providing trees which are consistent with koala habitat on Plan 7 – Vegetation Communities provided as part of the referral.

Tree canopy cover

Canopy %	48.90%
Sub-canopy %	7.20%

Height (m)

19
10

Layer	Weed/Native	Start	End	Interval	Layer	Weed/Native	Start	End	Interval
T1	Native	0.0	5.5	5.5	T2	Native	82.4	86.5	4.1
T1	Native	8.5	35.1	26.6	T2	Native	96.9	100.0	3.1
T1	Native	41.7	54.2	12.5	T2				0.0
T1	Native	90.3	94.6	4.3	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0

Tree density (NJKHTs)	100m x 50m (0.5 ha)	Results	
Species Name	**Common Name**	**Count**	
Angophora leiocarpa	Smooth-barked Apple	8	
Corymbia citriodora	Spotted Gum	33	
Eucalyptus crebra	Narrow-leaved Ironbark	9	
Eucalyptus tereticornis	Forest Red Gum	2	
Lophostemon suaveolens	Swamp Box	1	
	Total	**53**	**106 per hectare**

Transect assessment

Administrative

Transect ID	T2	Job Number / Property		11081

Site Data

Recorders		LB/CM	Date	17.04.2024

Site description and Location (including details of discrete polygons within the assessment unit)
Within the area identified as 'isolated trees and paddocks' mapped as not providing vegetation consistent with koala habitat on Plan 7 – Vegetation Communities provided as part of the referral.

Tree canopy cover

Canopy %	0.00%
Sub-canopy %	8.80%

Height (m)

0
11

Layer	Weed/Native	Start	End	Interval	Layer	Weed/Native	Start	End	Interval
T1				0.0	T2	Native	58.1	63.4	5.3
T1				0.0	T2	Native	96.5	100.0	3.5
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0

Tree density (NJKHTs)	100m x 50m (0.5 ha)	Results	
Species Name	**Common Name**	**Count**	
Corymbia citriodora	Spotted Gum	5	
Eucalyptus crebra	Narrow-leaved Ironbark	3	
Eucalyptus tereticornis	Forest Red Gum	3	
Lophostemon suaveolens	Swamp Box	2	
	Total	**13**	**26 per hectare**

Transect assessment

Administrative

Transect ID	T3	Job Number / Property		11081

Site Data

Recorders		LB/CM	Date	17.04.2024

Site description and Location (including details of discrete polygons within the assessment unit)
Within the area identified as 'isolated trees and paddocks' mapped as not providing vegetation consistent with koala habitat on Plan 7 – Vegetation Communities provided as part of the referral.

Tree canopy cover

Canopy %	0.00%
Sub-canopy %	8.30%

Height (m)

0
8

Layer	Weed/Native	Start	End	Interval	Layer	Weed/Native	Start	End	Interval
T1				0.0	T2	Native	20.5	28.8	8.3
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0

Tree density (NJKHTs)	100m x 50m (0.5 ha)	Results	
Species Name	**Common Name**	**Count**	
Corymbia citriodora	Spotted Gum	2	
Eucalyptus tereticornis	Forest Red Gum	2	
	Total	**4**	**8 per hectare**

Transect assessment

Administrative

Transect ID	T4	Job Number / Property		11081

Site Data

Recorders		LB/CM	Date	17.04.2024

Site description and Location (including details of discrete polygons within the assessment unit)
Within the area identified as 'isolated trees and paddocks' mapped as not providing vegetation consistent with koala habitat on Plan 7 – Vegetation Communities provided as part of the referral.

Tree canopy cover

Canopy %	0.00%
Sub-canopy %	0.00%

Height (m)

0
0

Layer	Weed/Native	Start	End	Interval	Layer	Weed/Native	Start	End	Interval
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0

Tree density (NJKHTs)	100m x 50m (0.5 ha)	Results	
Species Name	Common Name	Count	
	Total	0	0 per hectare

Transect assessment

Administrative

Transect ID	T5	Job Number / Property		11081

Site Data

Recorders		LB/CM	Date	17.04.2024

Site description and Location (including details of discrete polygons within the assessment unit)
Within the area identified as 'isolated and scattered ancillary koala habitat trees' mapped as providing trees which are consistent with koala habitat on Plan 7 – Vegetation Communities provided as part of the referral.

Tree canopy cover

Canopy %	40.70%
Sub-canopy %	5.80%

Height (m)

18
10

Layer	Weed/Native	Start	End	Interval	Layer	Weed/Native	Start	End	Interval
T1	Native	11.9	28.4	16.5	T2	Native	3.4	9.2	5.8
T1	Native	69.5	91.4	21.9	T2				0.0
T1	Native	97.7	100.0	2.3	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0
T1				0.0	T2				0.0

Tree density (NJKHTs)	100m x 20m (0.2 ha)		
Species Name	**Common Name**	**Count**	
Eucalyptus tereticornis	Forest Red Gum	3	
Corymbia citriodora	Spotted Gum	8	
Eucalyptus crebra	Narrow-leaved Ironbark	19	
	Total	**30**	**150 per hectare**

Attachment D

Hollows data sheets

Detailed Hollow Data Sheet

Date: 11.03.2024 Site ID: 11081 – Edwards Observers: LB and KR

Tree Details		Branch Dead/alive	Hollows	Height of Hollow from Ground, >8m (m)	Diameter of the Branch Hollow is Located, >30cm (mm)	Is the Branch where Hollow is Located <45° from Vertical? (yes/no)	Is the Hollow Entrance >15cm diameter? (yes/no)	Assessed with Camera (yes/no)	Other Comments
Tree ID	Species								
166	*Eucalyptus crebra* (Narrow-leaved Ironbark)	Dead	1	8.7	No (250)	Yes	Yes (150-200)	No	Tree mostly dead
		Dead	2	10.7	No (250)	Yes	Yes (150-200)	No	
		Dead	3	9	No (150)	Yes	No (100)	No	
153	*Eucalyptus melanophloia* (Silverleaf Ironbark)	Alive	1	3	Yes (650)	Yes	Yes (150-200)	Yes (no species observed)	
152	*Eucalyptus melanophloia* (Silverleaf Ironbark)	Dead	1	4	Yes (300)	Yes	Yes (200-250)	Yes (no species observed)	
		Alive	2	6	No (160)	Yes	No (100)	Yes (no species observed)	
		Alive	3	5	Yes (300)	Yes	Yes (150)	Yes (no species observed)	
148	*Eucalyptus crebra* (Narrow-leaved Ironbark)	Alive	1	8.5	No (120)	Yes	No (100)	No	
		Alive	2	9.8	No (150)	No	No (100)	No	
		Alive	3	9.8	No (200)	No	No (100)	No	
		Alive	4	9.8	No (190)	No	No (100)	No	
149	*Eucalyptus crebra* (Narrow-leaved Ironbark)	Alive	1	4.5	No (200)	No	No (100)	Yes (no species observed)	
		Alive	2	6	No (200)	No	No (100)	No	
		Alive	3	6	No (100)	No	No (100)	No	
151		Alive	1	8.9	No (220)	No	No (100)	No	

Tree Details		**Branch Dead/alive**	**Hollows**	**Height of Hollow from Ground, >8m** (m)	**Diameter of the Branch Hollow is Located, >30cm** (mm)	**Is the Branch where Hollow is Located <45^{o} from Vertical?** (yes/no)	**Is the Hollow Entrance >15cm diameter?** (yes/no)	**Assessed with Camera (yes/no)**	**Other Comments**
Tree ID	Species								
	Corymbia citriodora (Spotted Gum)								
158	*Corymbia citriodora* (Spotted Gum)	Alive	1	12.5	Yes (300)	No	Yes (300)	No	
162	*Eucalyptus crebra* (Narrow-leaved Ironbark)	Dead	1	13.1	No (100)	Yes	No (<100)	No	
		Dead	2	14.1	No (150)	Yes	No (<100)	No	
		Dead	3	13.5	No (150)	Yes	No (<100)	No	
		Dead	4	13.5	No (160)	Yes	No (<100)	No	
		Dead	5	14	No (160)	Yes	No (<100)	No	
164	**Dead/Stag**	Dead	1	7.5	Yes (300)	No	No (<100)	No	
		Dead	2	7.5	No (250)	No	No (<100)	No	
		Dead	3	7.5	No (150)	No	No (<100)	No	
279	*Eucalyptus crebra* (Narrow-leaved Ironbark)	Dead	1	16.8	No (200)	Yes	Yes (150)	No	
		Dead	2	17	No (200)	Yes	Yes (150)	No	
		Dead	3	16.5	No (180)	Yes	No (100-150)	No	
		Dead	4	17.1	Yes (300)	Yes	No (100-150)	No	
		Dead	5	6.7	No (150)	No	No (100-150)	No	
		Alive	6	8.2	Yes (400)	Yes	Yes (220)	Yes (no species observed)	

Detailed Hollow Data Sheet

Tree Details		**Branch Dead/alive**	**Hollows**	**Height of Hollow from Ground, >8m** (m)	**Diameter of the Branch Hollow is Located, >30cm** (mm)	**Is the Branch where Hollow is Located <45^{o} from Vertical?** (yes/no)	**Is the Hollow Entrance >15cm diameter?** (yes/no)	**Assessed with Camera (yes/no)**	**Other Comments**
Tree ID	Species								
280	*Eucalyptus crebra* (Narrow-leaved Ironbark)	Dead	1	6	Yes (350)	Yes	Yes (200)	Yes (no species observed)	Tree wrapped in Fig tree, partially dead
		Dead	2	8.7	Yes (350)	Yes	Yes (200)	No	
		Dead	3	15.2	Yes (350)	Yes	Yes (300)	No	
238	**Dead/Stag**	Dead	1	8.6	No (250)	Yes	Yes (150)	No	
		Dead	2	8	No (150)	No	No (120)	No	
		Dead	3	7.5	No (100)	No	No (120)	No	
		Dead	4	7	No (200)	Yes	Yes (150-200)	No	
237	*Eucalyptus crebra* (Narrow-leaved Ironbark)	Dead	1	12.6	No (150)	Yes	No (<100)	No	Tree predominantly dead
		Dead	2	12	No (150)	Yes	No (<100)	No	
		Dead	3	12.5	No (150)	Yes	No (<100)	No	
		Dead	4	12.6	No (200)	Yes	No (<100)	No	
		Dead	5	6.7	Yes (500)	Yes	Yes (200)	Yes (eggs observed)	
262	*Eucalyptus crebra* (Narrow-leaved Ironbark)	Alive	1	8.1	No (200)	No	Yes (150)	No	
265		Dead	1	17.1	No (200)	Yes	No (<100)	No	

Detailed Hollow Data Sheet

Tree Details		**Branch Dead/alive**	**Hollows**	**Height of Hollow from Ground, >8m** (m)	**Diameter of the Branch Hollow is Located, >30cm** (mm)	**Is the Branch where Hollow is Located <45^{o} from Vertical?** (yes/no)	**Is the Hollow Entrance >15cm diameter?** (yes/no)	**Assessed with Camera (yes/no)**	**Other Comments**
Tree ID	Species								
	Eucalyptus crebra (Narrow-leaved Ironbark)	Dead	2	14	No (200)	Yes	No (<100)	No	

Attachment E

Significant impact assessment – Koala

Significant Impact assessment – Koala

Significant Impact Criteria	Assessment	Impact
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1. Lead to a long-term decrease in the size of a population	Despite the referral area being completely mapped as Category X (non-remnant) vegetation as a result of a PMAV (ref: 2006/010563), Non-juvenile Koala Habitat Trees (NJKHTs) are present within the referral area. The site itself has been historically cleared for rural uses, with the vast majority of the area subject to on-going maintenance for pastoral activities having only scattered trees remaining and dominated by pasture grasses. The north-western extent of the site consists of higher tree density dominated by *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark) with scattered *Eucalyptus tereticornis* (Forest Red Gum) on the lower slopes. This area has also been subjected to historic and contemporary modification resulting in a largely cleared understory with moderate weed density at the ground and shrub layer. Several planted ornamental species were observed in this area with the entire setting established for landscape amenity around the driveway, homestead, sheds, stables and cattle yards. Field assessments focussed on treed areas in the north-west, no evidence of Koala was observed either directly or indirectly. This included a search under every tree as part of the broader tree survey. According to Queensland Wildnet Data, which dates back to the 1980s, fourteen (14) Koalas have been recorded within a 5 km radius of the site. A review of ALA and Biomaps indicated that these records vary from relatively recent (2019) to historical (1987). The closest recorded sighting of Koala to the referral area is from 2007 adjacent to Ripley Road. More recent records of Koala (within 7 years) are located in White Rock Conservation Area 4.8 km east of the site; Deebing Heights 4km west and Goolman, forming part of Goolman Conservation Estate to the south. A number of referrals have been made within the vicinity of the project site and koala scats, typically of a low level activity, are noted in the local context. Connectivity value to the south and west of the site is extremely limited by low quality regrowth vegetation, cleared areas and the already well-established Ripley Road. The north and east boundary's adjoin allotments with mixed vegetation values predominantly of a regrowth nature.	A significant impact is not likely

		The majority of the adjoining allotments are 'locked in' as Category X (non-remnant) vegetation under approved PMAV. They also contain active development applications for residential development and do not propose any tree retention adjoining this referral allotment. The site itself offers very little connectivity value or viable ecological linkages due to predominantly being a largely treeless environment with vast areas of cleared paddocks approximately 0.8km wide and 1.1km long. There are no State or Local Government values mapped at the site for either local features or strategic ecological corridors or connectivity. Given the minimal amount of actual vegetation clearing to undertake this development, its historical intensive grazing uses and central location within a major Priority Development Area, combined with the field survey results it is considered highly unlikely the project will lead to a long term decrease in the South East Queensland Koala population.	
2.	**Reduce the area of occupancy of the species**	Several detailed studies utilising both direct and indirect survey methods did not detect any evidence of Koala within the referral area, suggesting the vegetation on-site is not presently or recently utilised by Koalas. In addition, recorded sightings of the species in the local area are all relatively dated (over ten years) with contemporary records (within 7 years) located in White Rock Conservation Area 4.8 km east of the site; Deebing Heights 4km west and Goolman, forming part of Goolman Conservation Estate to the south. While the proposed action will remove 'isolated and scattered ancillary koala habitat trees', the impact area will occupy highly modified, predominantly cleared areas present over the majority of the referral area. These areas contain only scattered mature species and juvenile regrowth which provides extremely limited connectivity value to adjacent vegetation to the east. Further detailed assessments identified distances between tree and concluded that these distances where significantly greater than the average distance moved by the species, therefore not considered to provide habitat. Connectivity value within the referral area and broader region at present is extremely limited, therefore it is considered unlikely that the proposed development will significantly reduce connectivity value within the area (refer **Plan 8**).	A significant impact is not likely

		The impact area lacks suitable habitat and connectivity value, and Koala activity was not detected within the referral area, therefore it is anticipated that the removal of vegetation on-site is not considered to reduce the area of occupancy for Koalas.	
3.	**Fragment an existing population into two or more populations**	There is limited data or definition on the 'important' koala populations within South-East Queensland. Detailed studies utilising both direct and indirect survey methods did not detect any evidence of Koala within the referral area, suggesting the vegetation on-site is not utilised by Koalas. Koalas in the Greater Ripley area are highly unlikely to rely on this site for breeding, foraging or even dispersal when considering the available options for this in the broader area. The proposed development will utilise and existing major road system and will not preclude any existing movement around the project area within, or adjoining, the broader Ripley Valley area. As shown in **Attachment B – Plan 1** the Ripley Valley Priority Development Scheme includes a strategic volume of land within the Environmental protection zoning which builds on and supports the large areas of National Park surrounding the Priority Development Area. This development will not influence the operational and function of these existing and proposed conservation areas. It is considered unlikely that a population of Koala utilise the site, therefore unlikely to fragment an existing population of the species.	A significant impact is not likely
4.	**Adversely affect habitat critical to the survival of a species**	The proposed action results in the removal of tree species known to be used by the Koala such as *Corymbia citriodora* (Spotted Gum), *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Eucalyptus tereticornis* (Forest Red Gum). A portion of this land achieves the definition of Habitat Critical to the Survival of the species and will be removed by the development. Habitat attributes for the Koala include places that contain the resources necessary for individual foraging, survival (including predator avoidance), growth, reproduction and movement. Crucial habitat elements also include patches and corridors to continue gene flow. The site is not considered to contain these attributes of Critical Habitat. While the site does contain Koala habitat trees, the referral area consists of a highly modified environment, primarily 'Isolated Trees and Paddocks' equating to 74.9 ha. Marginally higher	A significant impact is not likely

		value vegetation is present in the north-west of the site where tree density is higher, this includes 2ha of vegetation identified as 'isolated and scattered ancillary koala habitat trees.' It should be noted that vegetated areas are disturbed by invasive species at the ground and shrub layer. The trees also occur within a historically active setting retained for amenity reasons around houses, sheds, stables and cattle yards (refer **Attachment B – Plan 2**). Impacts of the project include the removal of 2ha of land containing habitat with attributes suitable to support foraging, breeding, shelter and dispersal only in conjunction with off-site areas presently not proposed for retention. While achieving the tree and woodland diagnostics of the definition, the vegetation contained no evidence of current or recent usage and when considered within the broader degraded nature of the property is not considered to result in a significant impact of a measurable scale for the koala.	
5.	**Disrupt the breeding cycle of a population**	Detailed studies utilising both direct and indirect survey methods did not detect any evidence of Koala within the referral area, suggesting the vegetation on-site is not utilised by Koalas. In addition, recorded sightings of the species in the local area are all relatively dated (over 10 years) with relatively contemporary records (past 7 years) greater than 3.5 km from the referral area. As a result, it is not considered that the proposed action would disrupt the breeding cycle of a population of Koala as there is a lack of indication of breeding population on-site.	A significant impact is not likely
6.	**Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline**	The proposed action will impact a portion of the site containing Koala habitat trees with the 2ha area no longer being available for future koala usage. No evidence of Koala in the form of direct sightings or indirectly through scratch marks or scats was detected on-site during targeted surveys nor incidental surveys. As a local Koala population does not utilise the site presently, it is not considered that removal of the remaining isolated koala trees will result in species decline.	A significant impact is not likely
7.	**Result in invasive species that are harmful to a critically endangered or endangered species**	The proposed development will add marginally to a surrounding environment known to support a number of major threats to the Koala species including roads and vehicle traffic. The project will not introduce these threats as they already occur within proximity of the referral area and broader landscape.	A significant impact is not likely

	becoming established in the endangered or critically endangered species' habitat	**<u>Vehicles / Roads</u>** The site is accessed via the existing Ripley Road which flanks the entire western boundary and is the most utilised road within this area of the Ripley Valley. The Road is also proposed for upgrade by the Queensland Government in complete isolation to this project. **<u>Domestic Dogs</u>** Creation of land for future house construction will result in an increase in pet ownership over the property. This is occurring over every site under construction with the Ripley Valley. Dog ownership was already occurring at high rates on the rural and rural residential land uses occurring through the valley. This project retains no direct interfaces within any environmental zoned land with adjacent properties all proposing, or zoned for, housing on the adjoining boundaries of this project. Dogs which escape backyards within residential developments are more readily observed and reported when compared with rural areas. While the volume of dogs in the region would be predicted to increase within the context of this project it is not occurring within or adjoining any areas of threatened species habitat. In addition, invasive flora species that may impact the quality of suitable Koala habitat are currently present within the referral area. The proposed development will not result in the introduction or increase of invasive species that are harmful to the Koala being established within any areas of Koala habitat.	
8.	**Introduce disease that may cause the species to decline, or**	Diseases including chlamydial disease and Koala retrovirus (KoRV) are prevalent among Koala populations in South East Queensland. It is unlikely that the proposed action will introduce or increase the prevalence of disease in Koalas particularly as the action is not considered to impact a local population.	A significant impact is not likely
9.	**Interfere substantially with the recovery of the species.**	Detailed studies utilising both direct and indirect survey methods did not detect any evidence of Koala within the referral area, suggesting the vegetation on-site is not currently or recently utilised by Koalas. In addition, recorded sightings of the species in the local area are all relatively	A significant impact is not likely

dated (over 10 years) with relatively contemporary records (past 7 years) greater than 3.5 km from the referral area.

The Action is unlikely to interfere substantially with the recovery of the Koala. The removal of vegetation in the north-west will reduce an area of isolated and scattered ancillary koala habitat trees. The vast majority of the site consists of cleared paddocks with scattered trees unlikely to provide any habitat value of connectivity value within the broader area. The land is 100% zoned for development and centrally located within one of the largest development areas of South East Queensland with Queensland Government funding and support to create housing supply.

Refer below for an assessment against the EPBC Act Recovery Plan for the Koala.

The EPBC Act National Recovery Plan for the Koala was published in March 2022. This recovery plan for the listed Koala replaces the National Koala Conservation and Management Strategy (2009-2014) (NRM Ministerial Council 2009). It has been developed with relevant State and Territory Governments to provide an overarching national conservation framework for the listed Koala that aligns with local, state and territory government plans, programs and strategies. However, it does not replace Local, State and Territory Government plans, programs and strategies. It is the first recovery plan for the nationally listed Koala.

The overall goal of the National Recovery Plan is 'to stop the trend of decline in population size of the listed Koala, by having resilient, connected, and genetically healthy metapopulations across its range, and to increase the extent, quality and connectivity of habitat occupied'.

Three (3) key objectives of the Draft National Recovery Plan are provided below with responses relevant to the proposed action:

- **The area of occupancy and estimated size of populations that are declining, suspected to be declining, or predicted to decline are instead stabilised and then increased. The area of occupancy and estimated size of populations that are suspected and predicted to be stable are maintained or increased.**

The referral area comprises of entirely no-remnant and highly modified vegetation and mostly described as large, cleared pasture grass paddocks. Historical land uses including broadscale clearing have resulted in a largely treeless environment consisting of paddocks and scattered isolated trees on-site. No Koalas were identified during survey efforts, and no evidence of use was recorded within the referral area despite the ability for every tree to be observed for evidence.

The proposed action will reduce a small area of vegetation defined as 'isolated and scattered ancillary koala habitat trees' as a potential future area of occupancy. However, it is considered highly unlikely that the referral area would be utilised or relied upon by Koala given the property is mostly cleared land holding with the Greater Ripley Priority Development Area.

The proposed action will not influence the size of any current koala populations or sub populations.

- **Metapopulation processes are maintained of improved**

No evidence of Koala activity was recorded on-site, and there are limited contemporary records in the immediate area.

The referral area is surrounded by small farming and rural residential properties on all sides with Ripley Road running the length of the western boundary. Surrounding vegetation consists of a mixture of cleared open areas and regrowth vegetation. At present, it is considered unlikely that vegetation on-site contributes to the connectivity value of the area, therefore the proposed action is unlikely to fragment any population of Koala.

- **Partners, communities and individuals have a greater role and capability in listed Koala monitoring, conservation and management**

No evidence of Koala activity was recorded on-site, and there are limited contemporary records in the local area.

Low vehicle speeds and slow points are inherent in residential developments, minimising the risk of vehicle strike. Although the proposed action will involve the removal of an area identified as 'isolated and scattered ancillary koala habitat trees', this area only equates to 2ha. The vast majority of the site is treeless resulting in unsuitable Koala habitat. Additionally through the Queensland Government's Greater Ripley Priority Development Area Development Scheme, residential housing is proposed on all boundaries surround this allotment. The busy Ripley Road already flanks the entire western boundary and active development applications and approvals occur on the land to the north and east, none of which preserve any trees adjacent to this land or ecological corridors to connect this land to the broader conservation areas surrounding the Ripley Valley.

Attachment F

Significant impact assessment – Glossy Black Cockatoo

Significant Impact Assessment - Glossy Black Cockatoo

Significant Impact Criteria	Assessment	Impact
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
Lead to a long-term decrease in the size of an important population	Foraging habitat for the Glossy Black Cockatoo is characterized by dense stands of *Allocasuarina* species however also extends to areas containing an understory of scattered *Allocasuarina* sp. Field surveys identified the referral area to be a highly modified, containing predominantly cleared paddock utilised for cattle grazing. As a result, no *Allocasuarina* or *Casuarina* stands are present throughout the site, not even as individual specimens. Therefore, the referral area does not offer any foraging potential for the species. The general lack of vegetation within the referral area and dominance of open paddocks results in extremely limited breeding habitat potential. With only 15 hollow-bearing trees being recorded across the referral area. Further detailed assessments of the hollow bearing trees across the referral area identified significantly limited suitable hollows for the species. As is the case with foraging habitat, the species has very specific preferences for breeding habitat, with the *Conservation Advice for Calyptorhynchus lathami lathami (South-eastern Glossy Black Cockatoo)* (DCCEEW 2022b) stating that preferred hollow specifications for the species are as follows: • *>8 m above ground;* • *Located in branches >30 cm in diameter;* • *Branch or stem no more than 45° from vertical; and* • *Minimum entrance diameter of >15 cm.* Of the fifteen (15) hollow-bearing trees identified in the referral area, only one hollow (Tree 280, hollow 3,) was recorded as meeting all of the specific requirements for the socies (refer **Attachment B - Plan 5** and **Attachment D** for hollow assessment). Notably, this hollow is located in a highly isolated tree directly adjacent to Ripley Road. Given the designation of the area as a priority development area and this road being a main thoroughfare, it is proposed for a road upgrade. Thus, this tree is likely compromised as is and is likely to be removed as a result of the road expansion. Subsequently, the referral area does not offer any significant breeding habitat	Significant impact not likely

Significant Impact Criteria	Assessment	Impact
	which could support an important population of Glossy Black Cockatoo. A review of available mapping indicates that suitable foraging habitat for the species is present at White Rock Conservation Park approximately 3 km to the east, where records of the species occur within 4 km of the site. No evidence of a population exists within the referral area, nor were any individuals observed during field surveys. It is not anticipated that a population would occur within the vegetation on-site given the absence of suitable foraging and breeding habitat to support the species. Thus, it is considered highly unlikely that the proposed development will lead to a long-term decrease in the size of an important population.	
Reduce the area of occupancy of an important population of the species	Historical and contemporary land uses across have resulted in the referral area reflecting a largely treeless environment dominated by open paddocks. Several survey periods involving detailed assessments have occurred across the referral area, including a comprehensive hollow assessment. Initial surveys observed that the site does not contain any foraging habitat in the form of *Allocasuarina* or *Casuarina* species, with the majority of the area clearing and lacking native tree regrowth as a result of continued cattle grazing. The overall lack of vegetation coverage within the referral area and dominance of open paddocks has resulted in extremely limited breeding habitat features with only 15 hollow-bearing trees being recorded. An assessment of the hollow bearing trees across the site identified significantly limited suitable hollows for the species based on the aforementioned hollow specifications required. Although several of the hollows exhibited one or two of the preferred characteristics, only one hollow (Tree 280, hollow 3) was identified as meeting all four specific hollow requirements for the Glossy Black Cockatoos (refer **Attachment B - Plan 5** and **Attachment D** for hollow assessment). As noted previously, this hollow is located in a highly isolated tree along the western boundary of the referral area, adjacent to Ripley Road. Therefore, this tree and the hollow it bears is ultimately compromised by the anticipated road upgrade. As a result, the referral area does not offer any significant breeding habitat which could support an important population of this species.	Significant impact not likely

Significant Impact Criteria	Assessment	Impact
	All records within the local region being found >4 km east/south-east of the site in conjunction with more intact areas of vegetation which are also noted as containing potential and known Glossy Black habitat. Given the referral area does not provide any habitat value for the Glossy Black Cockatoo in a foraging or breeding capacity the proposed development is highly unlikely to reduce the area of occupancy of an important population of the species.	
Fragment an existing important population into two or more populations	It is highly unlikely that the proposed project will result in fragmentation of an existing important population as the site entirely lacks foraging or significant breeding resources. Vegetation within the referral area does not provide suitable foraging habitat for the species as no *Allocasuarina* spp or *Casuarina* spp are present. In addition, the site is highly fragmented with the majority of the site containing open paddock with scattered canopy trees. Breeding habitat was noted to be limited, with only 15 of trees observed to contain hollows on-site. These hollows were subject to targeted surveys in order to identify their suitability to support Glossy Black Cockatoo breeding specifications. As discussed previously, only one of the hollows was observed to meet all four specific hollow requirements for the species. Thus, there is no evidence that an existing population would utilise the referral area given the complete lack of suitable habitat for foraging or breeding. Therefore, it is highly unlikely the proposed development will result in the fragmentation of an existing important population into two or more populations.	Significant impact not likely
Adversely affect habitat critical to the survival of a species	The *Conservation Advice for Calyptorhynchus lathami lathami (South-eastern Glossy Black Cockatoo)* (DCCEEW 2022b) defines habitat critical to the survival of the species as areas: - For activities such as foraging, breeding, roosting or dispersal; - For long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators); - To maintain genetic diversity and long term evolutionary development;	Significant impact not likely

Significant Impact Criteria	Assessment	Impact
	- For the reintroduction of populations or recovery of the species or ecological community. As mentioned previously, the referral area lacks suitable foraging and breeding habitat to support the species on account of the majority of the site containing open paddock space historically and contemporarily used for cattle grazing. Foraging habitat for the Glossy Black Cockatoo is characterized by dense stands of *Allocasuarina* species however also extends to areas containing an understory of scattered *Allocasuarina* sp. Field surveys identified the referral area to be a highly modified, containing predominantly cleared paddock utilised for cattle grazing. As a result, no *Allocasuarina* or *Casuarina* stands are present throughout the site, not even as individual specimens. Therefore, the referral area does not offer any foraging potential for the species. In addition, the general lack of vegetation within the referral area and dominance of open paddocks has resulted in extremely limited breeding habitat for Glossy Black Cockatoos. Field surveys identified only 15 hollow-bearing trees. Further assessments of these hollow-bearing trees across the site identified significantly limited suitable hollows for the species as per the hollow specifications provided within the Conservation Adivce for the species. Only one hollow (Tree 280, hollow 3) was defined as meeting the specific requirements for the species (refer **Attachment B - Plan 5** and **Attachment D** for hollow assessment). As noted previously, this hollow is located in a highly isolated tree along the western boundary of the referral area, adjacent to Ripley Road. Therefore, this tree and the hollow it bears is ultimately compromised by the anticipated road upgrade. Therefore, the referral area does not offer any foraging or breeding habitat which could support an important population of Glossy Black Cockatoo. The lack of habitat within the referral area and general vicinity is supported by records of the species within the region being largely recorded 4 km east/south-east in conjunction with White Rock Conservation Park and Flinders-Goolman Conservation Estate. Portions of these vegetation patches have been identified by the State Government as containing areas of potential or known habitat for the species. These areas are far more likely to offer habitat that would contribute to the long-term maintenance of the species than the site which would not be able to support the species in any capacity in its current state.	

Significant Impact Criteria	Assessment	Impact
	Given the referral area does not offer any foraging or breeding habitat for the species coupled with a general lack of records and surrounding habitat, the project is highly unlikely to adversely affect habitat critical to the survival of a species.	
Disrupt the breeding cycle of an important population	The site does not contain any suitable foraging in the form of dense stands nor scattered trees of *Allocasuarina* or *Casuarina* species as a result of historical clearing and continued cattle grazing. The general lack of vegetation within the referral area and dominance of open paddocks has resulted in extremely limited breeding opportunity for the species, with field surveys recording only 15 hollow-bearing trees in the referral area. An assessment of these hollow bearing trees identified significantly limited suitable hollows breeding hollows to support the species. Although several of the hollows exhibited one or two of the preferred characteristics, only one hollow (Tree 280, hollow 3) was identified as meeting all four specific hollow requirements for the Glossy Black Cockatoos (refer **Attachment B - Plan 5** and **Attachment D** for hollow assessment). As noted previously, this hollow is located in a highly isolated tree along the western boundary of the referral area, adjacent to Ripley Road. Therefore, this tree and the hollow it bears is ultimately compromised by the anticipated road upgrade. As a result, the referral area offers very limited breeding capacity and is highly unlikely to support an important population of Glossy Black Cockatoos due to a lack of foraging habitat. Detailed field surveys over multiple days did not detect any evidence of a population of Glossy Black-Cockatoo utilising the referral area, which included targeted hollows surveys utilising a nest-box camera. In addition, records of the species are generally limited within 10 km of the site. The majority of records are 4 – 8 km east/south-east within intact vegetation associated with White Rock Conservation Park and Flinders-Goolman Conservation Estate. Given the lack of suitable habitat to support the species and general limited presence within the local area it is considered highly unlikely that the project will disrupt the breeding cycle of an important population.	Significant impact not likely

Significant Impact Criteria	Assessment	Impact
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The referral area is a highly modified rural property dominated by open cleared paddocks utlised for cattle grazing and thus does not contain significant breeding and foraging habitat to support Glossy Black Cockatoo. Given historical and continued land-uses, native trees are limited to isolated and scattered specimens within open paddock spaces, the subcanopy is largely absent and no *Allocasuarina* or *Casuarina* species were recorded on-site. Breeding capacity of the vegetation on-site is limited to a single hollow on the south-western boundary which abuts Ripley Road. This hollow was observed to contain all four necessary characteristics associated with roosting by this species, however given the hollows location within an isolated tree adjacent a road destined for upgrade this is not considered to constitute significant breeding habitat. Records of the species are generally limited to within 10 km of the site, with the majority occurring 4 – 8 km east/south-east within intact vegetation associated with White Rock Conservation Park and Flinders-Goolman Conservation Estate. As the referral area does not contain significant breeding or foraging habitat to support this species the proposed action is unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Significant impact not likely
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive flora and fauna species are not a listed major impact to Glossy Black Cockatoo under their conservation advice. As the majority of the referral area is highly modified and heavily grazed, which is listed as a significant threat to this species, the presence of invasive pest species is already high. Subsequently, it is unlikely the proposed development would introduce an invasive species that would lead to harm to the potential Glossy Black Cockatoo or its habitat.	Significant impact not likely
Introduce disease that may cause the species to decline	Psittacine Beak and Feather Disease (PBFD) is known to affect the Glossy Black Cockatoo. However, as this already exists among Glossy Black-cockatoo populations, it is unlikely the proposed development would introduce disease that would harm the Glossy Black-Cockatoo. This is particularly so as the referral area currently lacks any suitable habitat and therefore is unlikely to attract any Glossy Black Cockatoos to the area where disease could spread.	Significant impact not likely

Significant Impact Criteria	Assessment	Impact
Interfere substantially with the recovery of the species	Several conservation and management priorities have been identified in the *Calyptorhynchus lathami lathami* Conservation Advice. Some of these management priorities include protecting, restoring and enhancing the quality of known suitable habitat and increasing its extent, establishing buffer zones around native forests or woodlands, protecting large old trees and maintaining connectivity between regions. As discussed in the above points, detailed field surveys including targeted hollow specification surveys did not identify any suitable foraging or breeding habitat for the species nor was any evidence of the species utilising the referral area observed. Records and known suitable habitat for the species occurs >5km east of the referral area associated with White Rock Conservation Park. It is therefore considered highly unlikely that the project will interfere substantially with the recovery of the species as it is considered unlikely the referral area in it's current state could support the species in any capacity.	Significant impact not likely

No adopted or made Recovery Plan exists for this species however the *Conservation Advice for Calyptorhynchus lathami lathami (South-eastern Glossy Black Cockatoo) 2022* lists conservation and recovery actions and management priorities. The primary conservation objectives for these actions are:

- The subspecies' population is stable, such that it no longer qualifies for listing as threatened under the EPBC Act listing criteria. (**Long-term objective, 10+ years**);
- Protect, enhance extent and quality of habitat across the subspecies' range;
- Address critical knowledge gaps of the subspecies' ecological needs to guide and refine management strategies; and
- Enhance community awareness and stewardship of the conservation of the subspecies.

The objectives are split into the current and most significant threats to the species;

- Clearing of native vegetation/timber harvesting and habitat fragmentation
- Inappropriate fire regimes
- Competition for nest hollows

The following addresses these management priorities and how the action proposes to fulfil these objectives.

Protect, restore and enhance the quality of known suitable habitat and increase the extent of habitat (both breeding and foraging) for south-eastern glossy black cockatoo across the subspecies' range (both current and future) to maintain viability in response to threats, including climate change.

The referral area is a highly modified rural property dominated by open cleared paddocks utlised for cattle grazing and thus does not contain significant breeding and foraging habitat to support Glossy Black Cockatoo. Given historical and continued land-uses, native trees are limited to isolated and scattered specimens throughout the open paddock spaces, the subcanopy is largely absent and no *Allocasuarina* or *Casuarina* species were recorded on-site.

Breeding capacity of the vegetation on-site is limited to a single hollow on the south-western boundary which abuts Ripley Road. This hollow was observed to contain all four necessary characteristics associated with roosting by this species, however given the hollows location within an isolated tree adjacent a road destined for upgrade this is not considered to constitute significant breeding habitat.

Areas identified as containing suitable foraging habitat by the State and overall records of Glossy Black Cockatoo are largely absent within the broader locality, as shown on **Plan 4** at **Attachment B**. From available mapping it is expected that suitable foraging habitat for the species is present at White Rock Conservation Park approximately 3 km to the east where records of the species occur within 4 km of the site.

Thus, this conservation action cannot occur under the referral as the site lacks suitable habitat to support this species.

Establish appropriate buffer zones (e.g., 1 km) of native forests or woodlands around important nesting areas to minimise incursions by competitors.

Areas identified as known or potential habitat to support this species are not mapped within the vicinity of the referral area. The areas identified to contain suitable habitat within the local region are largely associated with the White Rock Conservation Area to the east and Flinders-Goolman Conservation Estate to the south. Surrounding land uses to the referral area are similarly disturbed and proposed for future urbanization under the Ripley Valley PDA Development

Scheme and thus are unlikely to constitute future important nesting areas for this species. Thus, a buffer zone is not required for this project.

Protect large old trees and smaller trees that contain large hollows, including those affected by fires. Ensure the recruitment of large old trees by retaining medium-sized trees, facilitating regeneration, and undertaking replanting.

The overall lack of vegetation coverage within the referral area and dominance of open paddocks has resulted in extremely limited breeding habitat features to support Glossy Black Cockatoo. Field surveys only identified fifteen (15) hollow-bearing trees within the referral area, all occurring within the sparse and scattered paddock trees on-site. An assessment of the hollow bearing trees across the site identified significantly limited suitable hollows for the species based on the aforementioned hollow specifications required. Although several of the hollows exhibited one or two of the preferred characteristics, only one hollow (Tree 280, hollow 3) was identified as meeting all four specific hollow requirements for the Glossy Black Cockatoos (refer **Attachment B - Plan 5** and **Attachment D** for hollow assessment). As noted previously, this hollow is located in a highly isolated tree along the western boundary of the referral area, adjacent to Ripley Road. Therefore, this tree and the hollow it bears is ultimately compromised by the anticipated road upgrade. As a result, the referral area does not offer any significant breeding habitat which could support an important population of this species.

Given the proposed action occurs within the Ripley Valley Priority Development Area with the surrounding lots also proposed for urbanisation (refer **Attachment B – Plan 1**) the retention of the hollow bearing trees on-site is not considered an appropriate action for the conservation of this species. Particularly when considering the site is currently not utilized by Glossy Black Cockatoo due to the absence of foraging habitat and very limited breeding capacity. It is not anticipated natural regeneration would occur in the sites current state due to the high intensity cattle grazing land use.

Maintain connectivity within and between regions:

- **At a local scale, ensure that birds can move safely between food, water and roosting resources via corridors that provide cover in the form of woodland or forest vegetation.**
- **Identify regional corridors that connect inland populations with those along the Great Dividing Range and the coast.**
- **Enhance or restore regional corridors through strategic revegetation and other works that ensure the availability of food, shelter and water resources.**

The referral area is heavily modified as a result of historical clearing and continued grazing activities, leaving open paddocks with scattered trees. It is highly unlikely that the proposed project will result in fragmentation of an existing important population as the site entirely lacks foraging or significant breeding resources. Vegetation within the referral area does not provide suitable foraging habitat for the species as no *Allocasuarina* spp or *Casuarina* spp are present. In addition, the site is highly fragmented with the majority of the site containing open paddock with scattered canopy trees. Breeding habitat was noted to be limited, with only 15 of trees observed to contain hollows on-site. These hollows were subject to targeted surveys in order to identify their suitability to support Glossy Black Cockatoo breeding specifications. As discussed previously, only one of the hollows was observed to meet all four specific hollow requirements for the species. Thus, there is no evidence that an existing population would utilise the referral area given the complete lack of suitable habitat for foraging or breeding.

Ensure the year-round availability of surface water in close proximity to foraging and nesting habitat. Where necessary, install or maintain artificial water recourses to ensure continued access to food and nest sites during periods when natural surface water is absent.

The referral area does not contain foraging or breeding habitat that could support this species, nor does it occur adjacent to known or potential suitable habitat for the species (refer **Plan 4**, **Attachment B**). Therefore, installation of artificial water sources as part of project design is not considered necessary to support this species. The areas of potential and known habitat occur 4km + from the referral area and are likely supported by Bundamba Dalys Lagoon, a large permanent waterbody 2.8 km south-east of the site that is situated close to several records of Glossy Black Cockatoo.

Maintain vegetation in proximity to water points, including the presence of smaller trees immediately adjacent to the water's edge, to provide cover and resting place for drinking birds.

Although several constructed farm dams are present within the referral area, the majority lack any vegetation coverage surrounding them as a result of historical clearing and continued intensive cattle grazing. Therefore, these constructed waterbodies are not considered important water sources for Glossy Black Cockatoo within the region, particularly with Bundamba Dalys Lagoon available. It is not considered in the best interests of public safety to retain these farm dams within the rapidly urbanising area.

Identify important populations and engage stakeholders in the development and implementation of a local area management plan (a map-based document detailing the works necessary to secure the long-term viability of the population). Undertake baseline studies to support the preparation of these management plans.

As discussed throughout the significant impact assessment for Glossy Black Cockatoo, no important populations of this species are expected to occur on-site, nor does the referral area contain suitable habitat which could support this species.

Develop or improve forestry policies across the range of the subspecies that promote the retention and recruitment of old hollow-bearing trees and other important habitat for the south-eastern Glossy Black Cockatoo.

The proposed action is not a forestry activity.

Promote and encourage revegetation programs or groups to include a Allocasuarina/Casuarina mix in their planting, where appropriate.

There is potential for landscaping of the proposed development to utilise Allocasuarina and/or Casuarina species within plantings where considered appropriate which would offer opportunistic foraging resources. However, based on records of the species and the current lack of suitable habitat within the referral area it is considered unlikely the species would readily occur within the area.