

Protected Plants Flora Survey Report

Greater Brisbane Greyhound Centre

A12066



Prepared for
Racing Queensland

22 March 2022



now



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1 Executive Summary

Cardno now Stantec Pty Ltd (Cardno) has been engaged by Racing Queensland to undertake a Protected Plants Flora Survey at 40-76 Ipswich-Boonah Road, Purga Queensland (the Site) for the proposed development of the Greater Brisbane Greyhound Centre (GBGC; the Project). This protected plant survey is required because the Site falls within a High-Risk Area as identified on a Protected Plants Flora Survey Trigger Map (Trigger Map).

A total of 86 species, including 50 non-native species, from 33 families were recorded during the protected plants flora survey. No Endangered, Vulnerable or Near Threatened (ENVT) flora species pursuant to the *Nature Conservation (Plants) Regulation 2020* were observed within the project footprint or 100m buffer, although the Endangered *Melaleuca irbyana* has previously been recorded within the southern extent of the Site (200m east of the project footprint). As such, a Protected Plant clearing permit will not be required for the Project, however an Exempt Clearing Notification Form must be submitted the Department of Environment and Science prior to clearing works. All other native flora species encountered are defined as Least Concern under the provisions of the *Nature Conservation (Plants) Regulation 2020*.

Certification

I certify that:

- a. I have adhered to all statutory requirements and flora survey guideline requirements, and
- b. In the area surveyed, I have not found any plants that are currently listed as extinct, extinct in the wild, critically endangered, endangered, vulnerable or near threatened in the *Nature Conservation (Plants) Regulation 2020*; and
- c. The flora survey report is an accurate account of the flora survey.



David Wassman

22/03/2022

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2 Guideline Requirements

Table 2-1 Compliance of protected flora survey with the flora survey guidelines.

Guideline requirements	Section of Flora Survey Report in which guideline requirement is addressed
Suitably qualified person	
Certification by a suitably qualified person whom led and coordinated the survey.	Executive Summary and Section 3
Full name and signature of the suitably qualified person and date of signing.	Executive Summary
Documentation to support that they are a suitably qualified person.	Appendix B
Extent of the area to be surveyed	
A detailed map or plan of the area, showing the area to be cleared, the buffer zone, the properties included and excluded from the survey area.	Figure 3-1 and Figure 5-1
Justification for removing any areas from the buffer zone.	Section 4.2
A GIS shapefile showing the area to be cleared, the clearing impact area and the extent of the on-ground surveys undertaken.	Shapefile provided to Racing Queensland
Flora survey methods and findings	
Lists compiled during desktop assessment of habitat types and Critically endangered, Endangered, Vulnerable and Near Threatened (CEEVNT) plants that may occur in these habitat types	Section 5.1 and Appendix D
Flora survey method and justification that method was appropriately comprehensive considering the lists compiled during desktop assessment.	Section 4.2
A detailed map or plan of the area showing the habitat types, location of CEEVNT plants and possible CEEVNT plants found.	Figure 5-2
A copy of the WildNet data entry form that was submitted to WildNet@science.dsitia.qld.gov.au, completed in accordance with the WildNet Data Entry Form Guidelines, and including all identified threatened plants or near threatened plants.	N/A
Details from CEEVNT population/plot surveys for each CEEVNT plant and possible CEEVNT plant found.	NA
Description of all possible CEEVNT plants found, including their supporting habitat	NA
Justification of the timing of the flora survey and detail of any limitations associated with the timing of the survey.	Section 4.1
Justification for any alternative plot size used.	N/A
Other	
The dates any clearing is proposed to occur	Racing Queensland to provide

3 Introduction

3.1 Project Background and Site Description

Cardno now Stantec Qld Pty Ltd (Cardno) has been commissioned by Racing Queensland to undertake a protected plant survey for the proposed development of the Greater Brisbane Greyhound Centre (GBGC) at 40-76 Ipswich-Boonah Road, Purga, Queensland (the Project). The Project will be located within three land parcels, including Lot 1 on SP193446, Lot 2 on SP193446 and Lot 3 RP127928 (collectively referred to as 'the Site'). The Site has been illustrated on **Figure 3-1**.

In 2019, Cardno conducted an ecological assessment identify ecological planning constraints present within the Site. During the assessment, a number of *Melaleuca irbyana* (Swamp tea-tree; listed as 'Endangered' pursuant to the *Nature Conservation (Plants) Regulation 2020*) were identified within the southern extent of the Site. As a result, the proposed project footprint was shifted to the northwest to avoid these plants and other environmental planning constraints. In 2021, Niche Environment and Heritage Pty Ltd (Niche) conducted a separate environmental assessment to address the requirements of updated legislation and other considerations associated with the contemporary design (Niche, 2021). The assessment found that *Calyptochloa gracillima subsp. ipsviciensis* had been recently listed as 'Critically Endangered' under the *Nature Conservation Act 1992* (NC Act) and that the updated Essential Habitat map (administered under the *Vegetation Management Act 1999*) shows the Site contains habitat for this species. While the species had not been recorded on Site during the 2019 or 2021 assessments, the species have a very restricted range and has previously been recorded within the locality.

In consideration of the above, a survey conducted in accordance with the *Protected Plants Flora Survey Guidelines – August 2020* was deemed necessary in accordance with the Site's designation within a Protected Plants High-Risk Trigger Area (**Appendix A**). The survey must specifically target all threatened flora species listed under the *Nature Conservation Act 1992* that have previously been recorded in the broader locality or are considered likely to occur due to the presence of suitable habitat within the species' known geographical range. The purpose of this report is to present the findings of the protected plants survey which was conducted over the Site and a 100 m buffer from its outer boundary (the Clearing Impact Area).

3.2 Survey Personnel

The field survey was completed by David Wassman and Agatha Dolan on 11 March 2022. Copies of their CVs are provided as **Appendix B**. David Wassman is a Suitably Qualified Person in accordance with the *Protected Plants Flora Survey Guidelines – August 2020*. A self-assessment against the Suitably Qualified Person criteria are provided in **Table 3-1**, below.

Table 3-1 Suitably qualified person self-assessment grading system (David Wassman).

Criteria	Conditions	Points allocated	Comment	Score
Component 1: Qualification, knowledge and ability				
A relevant qualification from a recognised institution (e.g. University, TAFE) that results in a thorough knowledge of plant identification and flora surveys.	General training (not Aust. Or QLD focused); OR	30	-	0
	Australian focused training; OR	40	-	0
	Queensland focused training	50	David has a BSc (Environmental Science) from a reputable Queensland University.	50
Regional ecosystem training by a recognised and qualified institution, such as the Queensland Herbarium		5	Completion of Regional Ecosystem identification training through Queensland Herbarium.	5

Criteria	Conditions	Points allocated	Comment	Score
Component 1: Qualification, knowledge and ability				
Member of a recognised group / certificate program relevant to ecology/botany, where skills/knowledge are demonstrated to be granted membership. E.g. Certified Environmental Practitioner (CEnvP) Pro		5	CEnvP, MEIANZ, ISCA	5
Lead author of articles/papers published in peer reviewed journals in relation to Qld flora surveys, Qld plant identification, or Qld CEEVNT plants.	10 points per paper to a maximum of 50 points	10	-	0
Component 2: Field experience				
Experience within the last 2 years and a total of at least 5 years at leading flora surveys in a field-based environment at a rate of no less than 5 comprehensive botanical surveys that focus on locating and identifying CEEVNT plants, per year.	General (not Aust. based); OR	40	NA	0
	Australian based survey experience; OR	50	NA	0
	Qld based field flora surveys experience	60	David has over 15 years' experience in the scoping, conduct and reporting of flora surveys and participate in at least 5 comprehensive botanical surveys per year that focus on CEEVNT plants.	60
Number of plant specimens you have collected that have been retained/incorporated into the Queensland Herbarium collection.	5 points per 5 plant specimens retained/incorporated, to a maximum of 40 points	5	NA	0
TOTAL SCORE				120



Figure 3-1 Site extent.

4 Methodology

4.1 Desktop Assessment

Prior to undertaking the protected plant surveys, a comprehensive review of background information was completed by a suitably qualified ecologist. This desktop assessment involved collation and review of relevant information concerning CEEVNT flora species likely to occur in the Site locality. The purpose of the desktop assessment was to:

- > Refine a list of CEEVNT species to be targeted by the protected plants survey to those CEEVNT species which had the highest likelihood of occurring on the Site; and
- > Source available information concerning the specific habitat requirements of the CEEVNT species as well as to aid in identifying the target species.

A range of database resources and mapping products were utilised as part of the desktop review. Presented below is a list of the key database and mapping resources reviewed as part of this assessment. Where applicable, the outputs from these searches have been presented in **Appendix C**.

- > The Wildlife Online database which is maintained by the Queensland Department of Environment and Science (DES)
- > The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool
- > The Atlas of Living Australia (ALA) database and Australia's Herbarium database to identify known records of CEEVNT, least concern and pest species recorded within the vicinity of the Site (these resources include Herbarium HERBREC's records)
- > The Regulated Vegetation Management Map produced by the Department of Resources (DoR) for the Site
- > the DES Protected Flora Survey Trigger Map, to identify survey and permit requirements relating to CEEVNT plants
- > The Pre-clearing Regional Ecosystems map produced by DES for the Site
- > Queensland Globe mapping layers
- > High resolution aerial photography sourced from Metromap.

All searches were conducted using either the Lot on Plan 2SP193446 or the coordinates of the approximate centre of the Site (-27.6696, 152.7405) and a 5 km search radius.

4.1.1 Likelihood of Occurrence Assessment

The process of refining the list of flora species to be targeted involved reviewing the known and specific habitat requirements for each threatened species identified during the desktop searches, against the known or expected availability of such resources on the Site and immediate surroundings. For each identified species, an assessment of the likelihood of occurrence was undertaken, with each species being assigned to one of the following categories:

- > **Known** (the species has been positively recorded in the Site by a qualified ecologist during the past 30 years);
- > **Likely** (suitable habitat for the species occurs in the Site and proximate records¹ exist);
- > **Possible** (suitable habitat for the species occurs on Site but no recent records from the Site or proximate areas exist OR suitable habitat for the species may not occur in the Site but recent records from proximate areas exist); or
- > **Unlikely** (suitable habitat for the species does not occur in the Site, and no recent records from the Site or proximate areas exist).

¹Proximate records are highly reliable records (i.e. identified through GPS precision or an accurate location description) that fall within the search area that are <50 years in age.

The results of the likelihood of occurrence assessment are presented in **Appendix D**.

4.1.2 Determining Habitat Types

The *Flora Survey Guidelines – August 2020* require the following in relation to timed meander surveys:

- > Each habitat type must be surveyed with a timed meander to maximise coverage of habitat and the encounter rate of different species (section 6.2.2).
- > Identities of any threatened plants or near threatened plants and associated locational data must be recorded;
- > Record the time every 2 – 5 minutes and pause the timed meander if the survey needs to be interrupted;
- > Search habitat types until no new threatened or near threatened plants have been observed for 30 minutes, OR when the entire habitat type has been surveyed;
- > Meanders must be undertaken (at a minimum) at the following rate per area of habitat type:
 - <2ha, one meander;
 - between 2ha and 10ha, two meanders;
 - between 10ha and 100ha, four meanders; and
 - >100ha, six meanders
- > The desktop assessment must include creating a list of all habitat types in the area (section 6.2.1).

With respect to determining the number of habitat types within a site, it is relevant to note that the term "habitat type" is not defined in the *Flora Survey Guidelines*. Habitat types can be stratified using multiple approaches (e.g. by vegetation condition or regional ecosystem type).

Some specific examples of stratification methods and the advantages and disadvantages of each have been presented in **Table 4-1**.

Table 4-1 Summary of stratification methods for habitat types.

Stratification Method	Advantages	Disadvantages
Regional ecosystem mapping	<ul style="list-style-type: none"> ▪ Readily available mapping product. ▪ Allows for land zone differences and similarities. ▪ Refined vegetation community descriptions available. 	<ul style="list-style-type: none"> ▪ Sometimes too coarse to capture subtle differences in habitat types (e.g. large rocky outcrops or deeply incised gullies). ▪ Sometimes too fine to justify stratification (e.g. there is little difference between the floristics of Bush-house paperbark occurring on land zone 9-10 and 3, i.e. 12.9-10.11 versus 12.3.18).
Broad Vegetation Group Mapping	<ul style="list-style-type: none"> ▪ Readily available mapping product. ▪ Allows for broad grouping based on vegetation structure. 	<ul style="list-style-type: none"> ▪ Can have very broad distribution – therefore may be too coarse to capture Site specific differences. ▪ A single BVG can occur across a wide variety of land forms and land zones.
Vegetation Condition	<ul style="list-style-type: none"> ▪ Can sometimes be readily distinguished by aerial imagery. 	<ul style="list-style-type: none"> ▪ In the absence of site reconnaissance is not likely to provide fine enough resolution. ▪ Generally need to be considered in combination with other methods.
Site reconnaissance	<ul style="list-style-type: none"> ▪ Can account for Site specific variability not detectable at desktop level. 	<ul style="list-style-type: none"> ▪ Not always practicable depending on size of Site.

4.2 Flora Survey

The methodology employed for the protected plants survey was a timed meander search, completed in accordance with the *Flora Survey Guidelines – August 2020*. This methodology is considered appropriate for

the Site and the target species and is the preferred methodology advocated by DES. The protected plants survey was planned and conducted by one suitably qualified Cardno ecologist, accompanied by a senior ecologist on 11 March 2022.

A total of six hours of active survey was completed within the Clearing Impact Area. The below-listed points are also of relevance with respect to the timing and conduct of the surveys.

1. The survey was undertaken on foot to ensure that the Clearing Impact Area was adequately surveyed.
2. The survey recorded native and exotic flora species where they had clearly not been planted (i.e. specimens 'in the wild'), but also included planted specimens and suburban landscapes where present.
3. The surveys were completed during the known flowering period for one of the target species *Calyptochloa gracillima subsp. ipsviciensis* while *Melaleuca irbyana* is readily identifiable in the absence of reproductive material.

4.2.1.1 Determining Survey Extent

The extent of the survey area incorporated the proposed disturbance footprint and a 100m buffer from its outer extent (i.e. the Clearing Impact Area). A number of areas within the Clearing Impact Area were modified, disturbed or subject to previous land clearing. Under the *Flora Survey Guidelines – August 2020*, a highly modified environment is classified as the following:

- a) A gravel or bitumen road;
- b) An impervious surface;
- c) Land that is regularly being mowed, slashed or ploughed; or
- d) Any combination of (a), (b) and (c) in this list.

Based on the *Flora Survey Guidelines – August 2020* definition of a 'highly modified environment', the survey area did not extend into areas containing bitumen and gravel roads, or areas that have been regularly mowed or slashed. As such, these patches within the 100m buffer were excluded from the survey, as shown in **Figure 5-1**.

5 Results

5.1 Desktop Assessment

5.1.1 Likelihood of Occurrence Assessment

Appendix D provides the results of the desktop likelihood of occurrence assessment that was completed for CEEVNT flora species in accordance with the methodology outlined in **Section 3.2**.

Table 5-1 provides a summary of those species that are 'known' or are considered 'likely' or 'possible' to occur within the Site.

Table 5-1 Likelihood of occurrence assessment for threatened flora species.

Scientific name	Common name	Status*		Likelihood of Occurrence
		NC Act	EPBC Act	
<i>Callitris baileyi</i>	Bailey's cypress	NT	-	Likely
<i>Calyptochloa gracillima subsp. ipsviciensis</i>	-	CR	-	Likely
<i>Melaleuca irbyana</i>	Swamp tea-tree	E	-	Known

*NC Act: CR = Critically Endangered; E = Endangered; NT = Near Threatened. EPBC Act: CE = Critically Endangered; V = Vulnerable

The likelihood of occurrence assessment indicated that three CEEVNT flora species may occur within the Site due to the presence of proximate occurrence records and/or presence of suitable habitat.

Melaleuca irbyana (Swamp tea-tree) has previously been recorded within the Site in both 2019 and 2021 (Cardno, 2019; Niche, 2021; **Appendix E**). Subsequently, the Project Footprint was amended to avoid potential impacts and to ensure that the Clearing Impact Area excludes the species.

Calyptochloa gracillima subsp. ipsviciensis has a very restricted range and has previously been recorded 600m northeast and 2.2km southeast of the Site (Wildnet Database, 2022). The species is endemic to southeast Queensland in the vicinity of Ipswich. It is only known from a few locations near the urban centre of Ipswich, two of which are Ipswich City Council reserves. At two locations only one or two plants or mats have been observed. It is an uncommon to dominant species in woodlands dominated by *Eucalyptus spp.* including *E. crebra* and *E. moluccana*, *Corymbia citriodora subsp. variegata*.

Callitris baileyi (Bailey's cypress) has previously been recorded 3.6km southeast of the Site. The species typically grows on rocky outcrops in hilly/mountainous areas, which are not widespread within the Site. However, some hilly areas are present; as such the species may possibly occur within the Site.

5.1.1.2 Survey Timing

Calyptochloa gracillima subsp. ipsviciensis flowers from December to March during the wet season; as such, it was determined that the timing for this survey (in March) was suitable for the species.

Melaleuca irbyana typically flowers from September to January; however is readily identifiable throughout the year due to its unique appearance. Similarly, *Callitris baileyi* is also easily identifiable due to its pyramidal shape. As such, the timing for the survey was also deemed appropriate for these species.

5.1.2 Determining Habitat Types

A review of the Regulated Vegetation Management Map and the Vegetation Supporting Map, produced by DOR indicates the vegetation within the general locality of the Site is mapped as Category X (non-remnant), Category B (remnant Vegetation) and Category C (high-value regrowth vegetation) supporting four Regional Ecosystems (RE) including RE 12.9-10.7, 12.9-10.27, 12.9-10.2 and a mixed community consisting of RE 12.9-10.2/12.9-10.7/12.3.3/12.9-10.3 (**Plate 1** and **Plate 2**).

Review of the pre-clearing mapping for the Site suggests that prior to clearing, the Site and its immediate surrounds would have supported primarily RE 12.9-10.7 and a small portion of a mixed community including RE 12.9-10.2/12.9-10.7/12.3.3/12.9-10.3 (**Plate 3**). The regulated vegetation desktop searches produced for the Site are provided as **Appendix C**.

A short description of each RE that currently occupies the Site (according to the *Regional Ecosystem Description Database (REDD) 2019*) is outlined in **Table 5-2**.

Table 5-2 Regional ecosystems as described in Regional Ecosystem Description Database, 2019.

RE	Short Description	VM Act Status [^]	Present Within the Clearing Impact Area?
12.9-10.7	<i>Eucalyptus crebra</i> +/- <i>E. tereticornis</i> , <i>Corymbia tessellaris</i> , <i>Angophora</i> spp. and <i>E. melanophloia</i> woodland on sedimentary rocks	Of Concern	Yes
12.9-10.27	<i>Corymbia citriodora</i> subsp. <i>variegata</i> and/or <i>E. moluccana</i> , <i>E. tereticornis</i> , <i>E. crebra</i> open forest with <i>Melaleuca irbyana</i> understorey on sedimentary rocks	Endangered	No
12.9-10.2	<i>Corymbia citriodora</i> subsp. <i>variegata</i> +/- <i>Eucalyptus crebra</i> open forest on sedimentary rocks	Least Concern	No
12.3.3	<i>Eucalyptus tereticornis</i> woodland on Quaternary alluvium	Endangered	No
12.9-10.3	<i>Eucalyptus moluccana</i> open forest on sedimentary rocks	Of Concern	No



Plate 1: Excerpt from the Regulated Vegetation Management Map.



Plate 2: Excerpt from DES' Regional Ecosystem Map showing remnant vegetation.

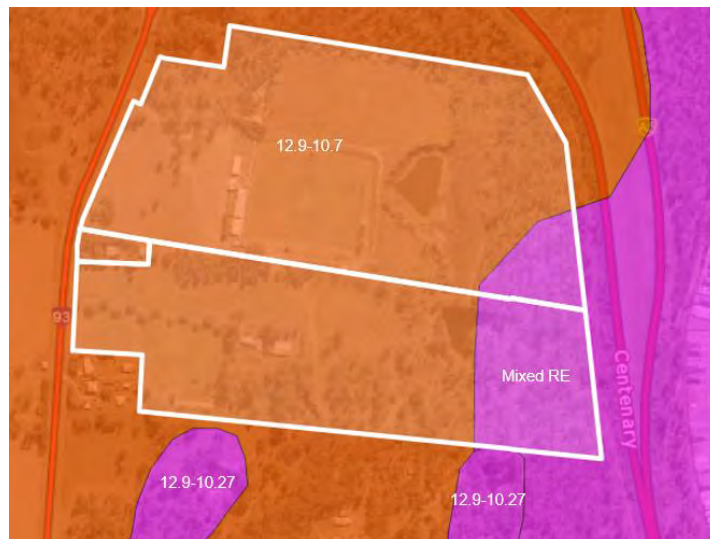


Plate 3: Excerpt from the Vegetation Management Pre-clear Regional Ecosystem Map.

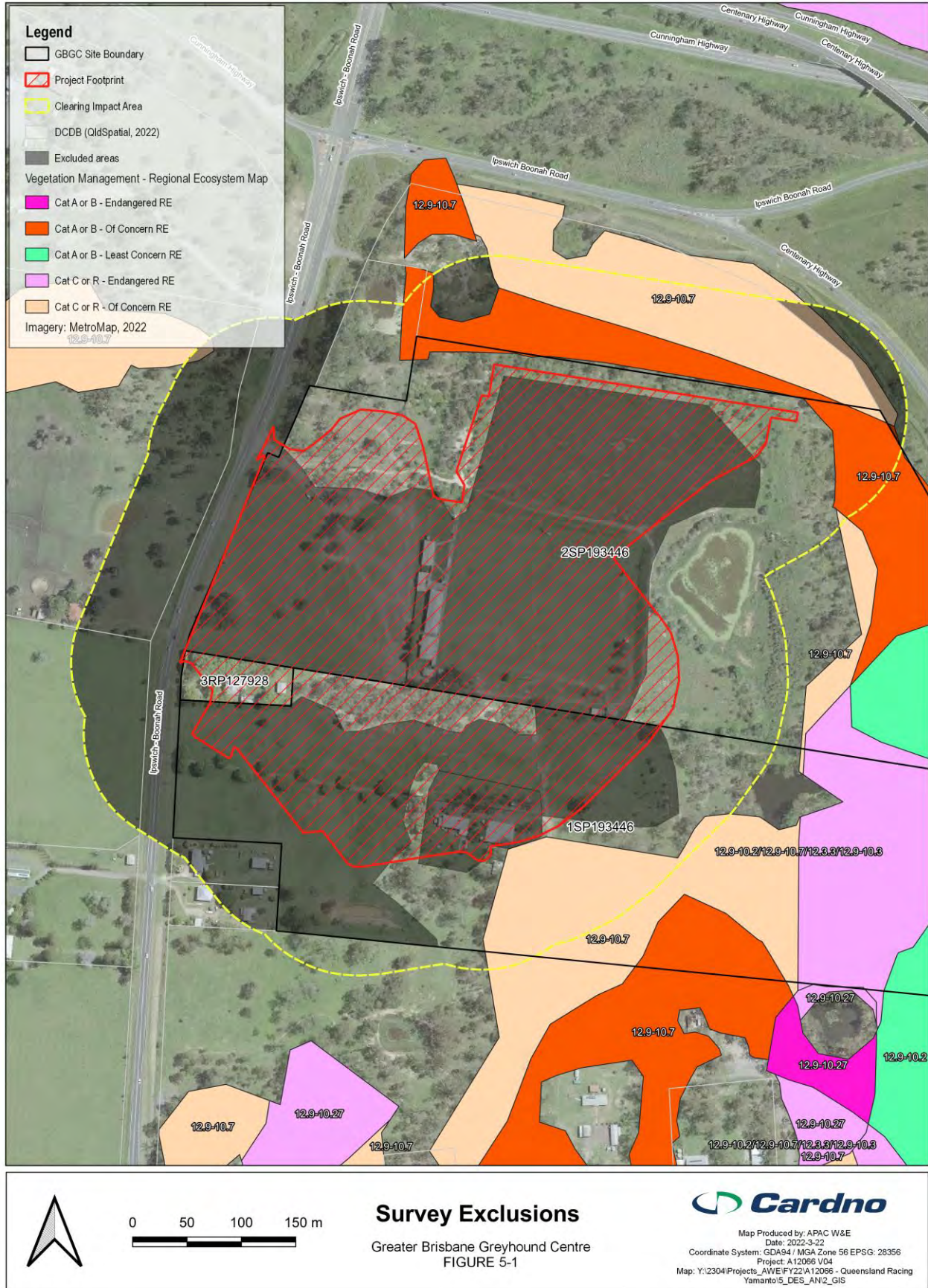


Figure 5-1 Survey exclusions and habitat type stratification.

Previous reconnaissance of the Site also indicates that the vegetation communities present within the Site are largely consistent with those shown on the Regulated Vegetation Management supporting map (Cardno, 2019). As such, the habitat types present within the Site were stratified according to the Vegetation Management Regional Ecosystem supporting map for the purposes of this survey (**Figure 5-1**).

Table 5-3 provides a description of the habitat type present within the Clearing Impact Area, its spatial extent, and the minimum number of timed meanders required according to the *Flora Survey Guidelines – August 2020*.

Table 5-3 Initial habitat type stratification and number of times meanders.

RE	Short Description	Habitat type	Extent (ha) within clearing impact area	Pre-clearing extent within clearing impact area	Remnant extent within Site	Resulting number of timed meanders
12.9-10.7	<i>Eucalyptus crebra</i> +/- <i>E. tereticornis</i> , <i>Corymbia tessellaris</i> , <i>Angophora spp.</i> and <i>E. melanophloia</i> woodland on sedimentary rocks	H1 - remnant	5.1ha (1.8ha remnant and 3.3ha regrowth)	36.7ha	1.8ha	2

5.2 Flora Survey

5.2.1 Habitat Types

The on-ground survey determined that the Site supports a single habitat type, consisting of remnant and regrowth vegetation which corresponds with RE 12.9-10.7 (**Figure 5-2; Plate 1**). Additionally, the Site supports areas of ‘highly modified environment’ comprised of regularly mown/slashed land, landscaped areas, existing hardstand driveways, roads and carpark (**Plate 4 to Plate 6**).

5.2.2 Flora Species

A total of 86 species, including 50 non-native species, from 33 families were recorded during the protected plants survey. A list of flora species recorded within the clearing impact area and surrounds is enclosed in **Appendix F** of this report. Of these, none were CEEVNT flora species listed under the provision of the *Nature Conservation (Plants) Regulation 2020* within the Clearing Impact Area, although *M. irbyana* has previously been recorded elsewhere within the Site.

The Site contains a large number of weed infestations dominated by species listed under the *Biosecurity Act 2014* (**Figure 5-2**). Such species, mostly present in the Site’s northern extent, include:

- > *Asparagus plumosus* (Feathered asparagus fern),
- > *Ambrosia artemisiifolia* (Annual ragweed),
- > *Senecio madagascariensis* (Fireweed),
- > *Opuntia stricta* (Prickly pear),
- > *Bryophyllum delagoense* (Mother-of-millions),
- > *Vachellia nilotica* (Prickly acacia),
- > *Lantana camara* (Lantana), and
- > *Lantana montevidensis* (Creeping lantana).

5.2.2.1 Survey Limitations

The timed meander survey method advocated in the Flora Survey Guidelines is a risk-based survey method and does not require that every part of a site be traversed. As such, it is possible, but unlikely, that a threatened species occurs within the Clearing Impact Area in an area not physically traversed or otherwise visible.

Notwithstanding, the above survey effort, methodology and timing were deemed appropriate for the purpose of detecting likely threatened flora species and their habitat within the Survey Area. Should a species not be identifiable, a sample would be submitted to the Queensland Herbarium for identification where specimens supporting sufficient diagnostic features could be collected.

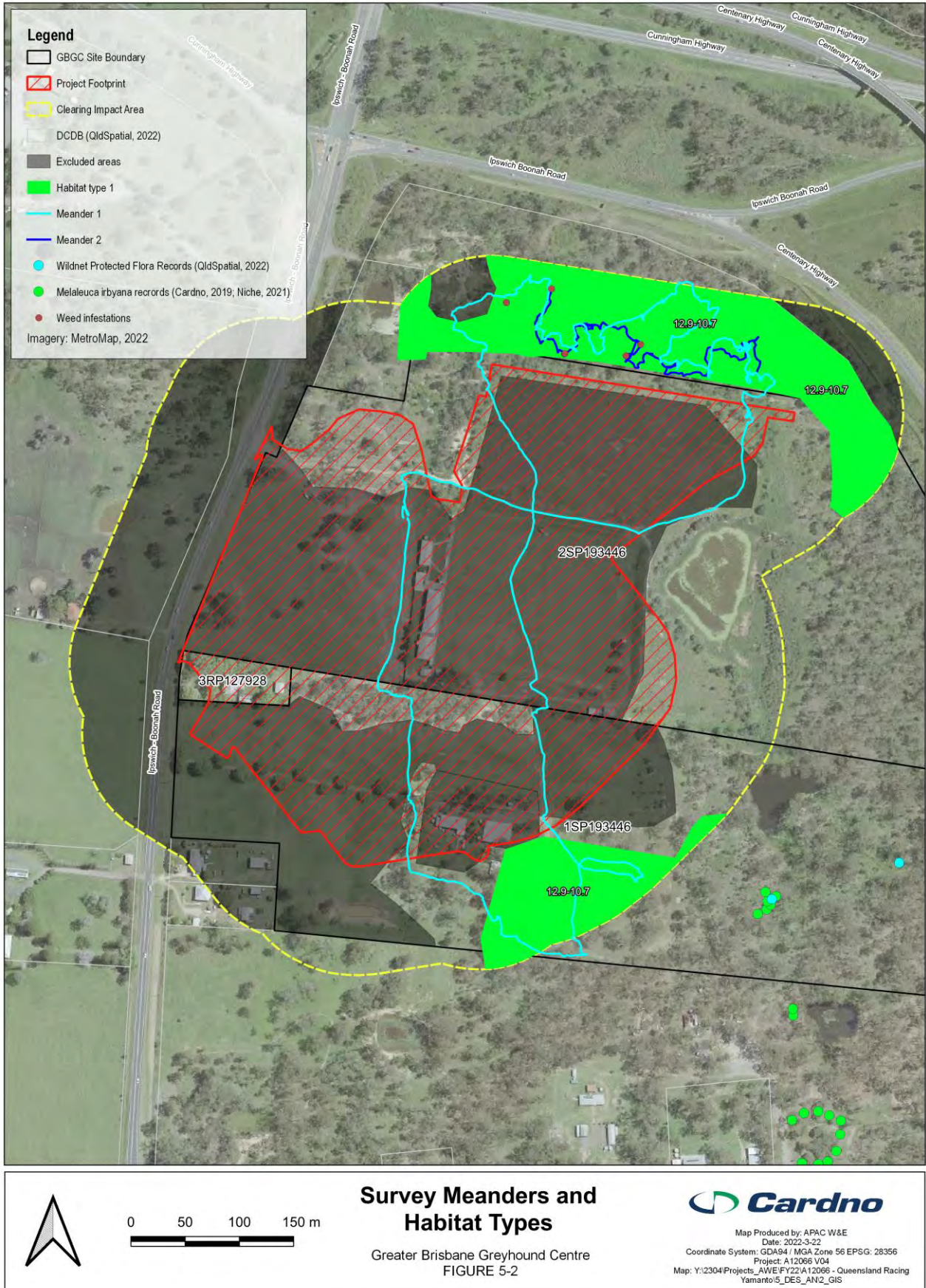


Figure 5-2 Survey meanders and habitat types.



Plate 4: View from RE 12.9-10.7 - the single habitat type present in the clearing impact area.



Plate 5: *Lantana camara* infestation within the Site's northern extent.



Plate 6: Regrowth areas within weed-infested ground layer.



Plate 7: Scattered *Bryophyllum delagoense* in Habitat Type 1.

6 Conclusions and Management Recommendations

6.1 Conclusions

No threatened flora species pursuant to the *Nature Conservation (Plants) Regulation 2020* were identified during the flora survey. As such, a Protected Flora Clearing Permit and supporting Impact Management Plan are not required for the Project. However, it is recommended that the Construction Environment Management Plan prepared for the Project include measures and safeguards to protect retained areas of *M. irbyana* (located outside of the Clearing Impact Area). A Protected Plant clearing exemption will also be required before cleaning can commence.

Notwithstanding the above, it should also be recognised that the Site supports Least Concern native flora with intrinsic ecological values. Further, the Site (including the Clearing Impact Area and surrounds) does contain habitat which could potentially support *Calyptochloa gracillima subsp. ipsviciensis*. However, the Site has been subject to considerable weed incursion, particularly along the ground layer, which likely limits the potential for the species to exist within the Site. Current threats to *Calyptochloa gracillima subsp. ipsviciensis* include invasion from weeds such as *Megathyrsus maxima var. pubiglumis* and *Lantana montevidensis*, inappropriate burning regimes, urbanisation and road construction. As such, the Project should seek to limit relevant threats, such as further weed infestation by removing current infestations where feasible.

6.2 Recommendations

It is recommended that, wherever practicable, the below-listed management and mitigation measures are implemented in the course of the clearing and construction activities in the project construction footprint.

- > Manage weeds within the Clearing Impact Area and broader Site with the aim of improving habitat suitability for *Calyptochloa gracillima subsp. ipsviciensis*. This should include the targeted removal of ground and shrub layer weed infestations in the northern extent of the Site, such as Lantana, Creeping lantana, Mother-of-millions, Annual ragweed and Sensitive plant (**Figure 5-2**).
- > Prior to clearing, clearly delineate areas for retention of vegetation with high visibility flagging tape or equivalent markings.
- > Fell vegetation away from any vegetation which is to be retained.
- > Clear vegetation in a manner that will prevent damage to vegetation to be retained.
- > Works within the vicinity of trees to be retained should be undertaken in accordance with *AS 4970 – 2009 Protection of Trees on Development Sites*.
- > Any pruning work should be carried out by appropriately qualified arborists working to *AS 4373 – 2007 Pruning of amenity trees*.
- > Manage soil erosion and sediment loss during Site works as per a site-specific environment management plan (construction) and erosion sediment control plan.

Greater Brisbane Greyhound Centre

APPENDIX

A

FLORA SURVEY TRIGGER MAP



now

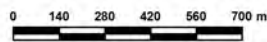




Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets



This product is projected into:
 GDA 1994 Queensland Albers

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
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Protected plants flora survey trigger map

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Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.

Greater Brisbane Greyhound Centre

APPENDIX

B

SURVEY TEAM CVS

 **Cardno**

now

 **Stantec**



David Wassman

Current Position

Senior Principal - Ecology
Environment

Profession

Ecology

Years' Experience

16

Joined Cardno

July 2010

Education

BSc (Environmental
Science)

Professional Registrations

CEnvP (registration number
1174)

Affiliations

MEIANZ

ISCA

Summary of Experience

David Wassman is a CEnvP and has been with Cardno since mid-2010. David has approximately 16 years' experience in the environmental field working in both private and State Government sectors.

David is a highly adaptable individual who is capable of liaising with government departments and delivering high quality outputs in short timeframes. He has a broad range of environmental skills, specialising in the areas of ecological assessments, flora and fauna surveys and environmental management. David provides specialist ecological and general environmental advice to clients across a range of sectors including linear infrastructure, mining, local government, industrial and commercial development and master planning. David also manages and delivers advice and technical reporting in support of a range of local, state and commonwealth environmental approvals.

Skills include:

- > Project management for a range of ecologically focussed projects;
- > Client liaison;
- > Provision of environmental advice with respect to environmental constraints and approvals
- > Preparation of applications and supporting technical documentation for Commonwealth, State and Local government approvals;
- > Undertaking environmental assessments (including fauna and flora surveys); and
- > Preparation of reports (including management plans and written advice).

Professional expertise

- > Ecological Assessments
- > Flora and fauna studies
- > EPBC Act threatened species and ecological community mapping
- > Environmental Management
- > Road Ecology
- > Ecological Restoration / Revegetation planning

Summary Work History

- > Principal Ecologist / Senior Ecologist / Ecologist, Cardno (Qld) Pty Ltd, 2010 – Present
- > Ecologist, Australian Wetlands, July 2008 - July 2010
- > Project Officer, Water Services, Department of Natural Resources and Water, September 2006 - July 2008.

Key Projects

Energy, Mining, Oil and Gas

Moura Solar Farm Project – Metka EGN- Ecologist

Managed the completion of ecological surveys of the Moura Project development footprint. The survey was completed to ensure a contemporary ecological assessment was completed and all necessary approvals were obtained for the Project. Outputs included ecological assessment reporting, preparing and managing a referral under the Environment Protection and Biodiversity Conservation Act 1999 and obtaining a Low Risk SMP for impacts to native species breeding habitat.

Whitsunday, Hamilton and Daydream Solar Farms Projects – Bouygues and RCR Tomlinson - Project Manager and Ecologist

Managed the completion of targeted weed survey and hollow-bearing tree surveys of the approximately 455 hectare Project development footprint prior to vegetation clearing and construction. The survey was completed to ensure compliance with relevant conditions of Environment Protection and Biodiversity Conservation Act 1999 approval for the Project. Outputs included obtaining High Risk SMP for colonial breeding species, waterway barrier works advice, a weed management plan.

Weed Systems Audit - Comet Ridge to Wallumbilla Pipeline - Santos - Project Lead

Completed a Weed Systems Audit on behalf of Santos for the major contractor involved with the Comet Ridge to Wallumbilla Pipeline Project. Works involved a site visit of the project footprint to review current weed management practices and efficacy, review of all existing documents and systems in place which pertain to weed management including overarching documentation prepared for the project as well as site specific documentation and protocols prepared by the contractor. Cardno also prepared a document be prepared which outlines the position and expectations of Santos with respect to weed management by contractors working on Santos projects.

REMP - Marine Crossing Pipeline - Saipem - Environmental advisor

Helped with the development of a REMP with a consistent, scientifically rigorous rationale designed to detect any changes in the receiving environments attributable to the construction works for the marine crossing aspect of the GLNG Project. Works involved a review of background information developing trigger values, monitoring evaluation criteria and developing of the REMP.

Scotia Interconnect Pipeline – Santos - Lead Ecologist

Completion of ecological assessments and provision of advice in relation to offsets and EPBC Act referral.

Gas to Gove Environmental and Compliance Register - Rio Tinto Aluminium - Project lead

Completed a review of the environmental and compliance requirements associated with the proposed Gas to Gove pipeline on behalf of Rio Tinto to ensure the requirements of relevant approvals could be incorporated into the Company's compliance database.

Independent Environmental Advisor - Moura Interconnector Project - Environmental Advisor

Court appointed independent advisor charged with oversight of environmental management and controls implemented during the construction of the Moura Interconnector Project.

Gregory Crinum Mine – Sojitz – Project Manager and Lead Ecologist

Project manager and terrestrial fauna lead for seasonal surveys over the mine's expansion footprint. Survey techniques include active trapping with harp, cage and Elliott traps as well as passive techniques including ultrasonic call detection and camera trapping.

South Walker Creek Mine – BMC - Project Ecologist

Over a period of approximately three years I was involved in the completion of a number of surveys across the South Walker Creek Mine, including targeted surveys for a range of threatened flora and fauna species such and the Ornamental Snake and the Black Ironbox along Bee and Walker Creeks as well as extensive

mapping for EPBC Act threatened communities and consideration and calculation of offset requirements and obligations.

Kestrel Mine Expansion – Rio Tinto – Environmental Advisor

I was engaged on secondment to Rio Tinto to provide support to the on-site environmental team to assist with the planning and construction of the new access road, site facilities and overland conveyor for the expansion of the existing Kestrel mine. Key tasks included:

- > Complete a range of ecological assessments for weeds, pests and the EPBC Act listed Natural Grasslands of the Central Highlands TEC and then prepare updates to existing Rio Tinto management plans for these matters.
- > Maintain and update the approved Construction Environmental Management Plan (“CEMP”) including various procedures, forms, schedules, and checklists;
- > Monitor the implementation of scope of works to ensure appropriate control measures are effective and in compliance with the approved CEMP and conditions of relevant Development Consents;
- > Undertake site inspections as necessary, and complete weekly ESHS Reports.

Flora and Fauna Surveys of Proposed Expansion Area – Iluka Resources – Fauna Ecology Lead

As fauna ecology lead I was responsible for the co-ordination, planning and completion of seasonal surveys targeting flora and fauna surveys across a proposed expansion area for Iluka Resources in western Victoria to determine likely impacts and offset obligations.

Linear Infrastructure

Inland Rail, Border to Gowrie – ARTC – Project Manager and Fauna Ecology Lead

As Project Manager and lead fauna ecologist I have been involved in the management, planning and delivery of the ecology surveys for the B2G section of inland rail. This has involved coordinating four teams of flora and fauna ecologists over two seasonal surveys across the 200 km alignment. Specific tasks have included:

- > Client and landholder liaison;
- > Project management;
- > Planning and completion of two seasonal targeted field surveys; and
- > Provision of ecological assessment reporting, significant residual impact assessment and habitat modelling.

Warrego Highway Masterplan Environmental Assessment – DTMR – Lead Ecologist

As lead ecologist I was involved in the planning and completion of Flora and Fauna surveys and reporting constraints analysis associated with the design and planning for the 80 km long section of the Warrego Highway as part of the masterplan for the future corridor. Specific tasks included:

- > Desktop assessments;
- > Rapid field surveys;
- > Targeted field surveys; and
- > Reporting and mapping.

Rocklea to Darra, Ipswich Motorway Upgrade – DTMR – Environmental Scientist

As part of the environmental project team I managed the planning and delivery of a range of assessments to inform the preparation of necessary approval documentation, including:

- > Conduct environmental impact assessment (EIA) and prepare report;
- > Prepare and obtain necessary environmental approvals;
- > Undertake an Ecology Credit ISCA assessment for sustainability rating; and

- > Provide on-going environmental management advice to the design team.

Gateway Upgrade North – Transurban – Technical Advisor

As part of the environmental services team I was engaged as a Technical Advisors to Transurban in the tender and early stage delivery of the Gateway Upgrade North project. Key tasks, included:

- > Tender evaluation;
- > Marine Plant field surveys;
- > Provide Offset Advice;
- > Obtaining environmental approvals; and
- > Independent technical review of contractor documentation.

Aquatic Ecology

Tuvalu Outer Island Maritime Infrastructure Project – Asia Development Bank - Environmental Supervisor and Aquatic Ecologist

Over a period of six months I was involved on projects on the islands of Nui and Nukulaelae in Tuvalu associated with provision of new and upgraded maritime infrastructure, key activities included:

Activities performed:

- > Conduct baseline surveys of the reef flat and slope within the area of proposed construction and dredging;
- > Maintain and update the approved Construction Environmental Management Plan (“CEMP”) including various procedures, forms, schedules, and checklists;
- > Monitor the implementation of scope of works to ensure appropriate control measures are effective and in compliance with the approved CEMP and conditions of relevant Development Consents;
- > Undertake site inspections as necessary, and complete weekly ESHS Reports;
- > Undertake monitoring when required i.e. Development Consent Compliance Audit; and
- > Provide information, training and instructions to construction workers on the process for reporting of incidents.

Southern Moreton Bay Islands Ferry Terminals - Department of Transport and Main Roads – Aquatic Ecologist

I was responsible for the planning and delivery of Seagrass and Fish Habitat Assessments associated with the ferry terminal upgrade project. The scope of work involved intertidal and sub-tidal seagrass and fish habitat surveys within the proposed impact areas to help inform the design of the terminal and the preparation of necessary environmental approvals.

NBN Submarine Cable Crossing – NBN – Project Manager and Aquatic Ecologist

As Project Manager and Aquatic Ecologist I contributed to the planning and delivery of Seagrass and Fish Habitat Assessments associated with the construction and installation of the submarine cables connecting the southern Moreton Bay islands. The scope of work involved intertidal and sub-tidal seagrass and fish habitat surveys within the proposed impact areas to help inform the design of the terminal and the preparation of necessary environmental approvals.

Marine Pest Plankton Surveys – Commonwealth of Australia - Ecologist

Conducted boat-based marine plankton surveys at key ports in Queensland and the Northern Territory, including Gove, Weipa and Mackay to provide samples for DNA analysis to track potential marine pest incursions into Australian waters.

Offshore Drilling Program for Darwin's HMAS Coonawarra Expansion – Laing O'Rourke – Cetacean spotter

Provided cetacean spotting services during a four week offshore geotechnical drilling program for the base's wharf expansion project in Darwin as part of EPBC Act requirements.

Defence

Canungra Field Training Area – Defence - Project Ecologist

Completed detailed fauna surveys of the Field Training Area as part of the Australian Defence Forces' commitment to managing the potential impacts of their activities of fauna species. Three separate monitoring events were completed, with a range of threatened fauna confirmed on the site.

Explosive Ordnance Logistics Review - Darwin RAAF Base - Lead Ecologist

Managed the planning and delivery of targeted surveys for a range of threatened fauna species, specifically the Black-footed tree rat which was expected to occur within the proposed ordinance facility expansion area. Field surveys involved deployment of camera traps, Elliot Traps and extensive nocturnal spotlighting. A number of Black-footed tree rats were encountered, along with their nesting sites across the ordinance facility.

Murray Bridge Training Area (MUTA) - Macropod surveys – Lead Ecologist

To assist with the management of significant macropod populations on MUTA which have implications for defence personnel safety and issues with overgrazing of sensitive vegetation, David completed a series of vehicle and foot based surveys to determine the overall density of macropods and determine the spatial distribution of the population on MUTA. This information was used to make decisions on the possible need for culling and included recommendations for non-lethal management actions.

Water storage

Boondooma Dam Spillway – Sunwater - Ecologist

I was involved in a number of ecological assessment to identify features of high ecological significance. The surveys involved confirming mapped vegetation communities, terrestrial and aquatic habitat assessments, fish and invertebrate survey, a geomorphological assessment of two watercourse crossings, identification of declared weed species, a targeted threatened flora survey, spotlighting, and camera trapping. Outputs included an ecological assessment report and provided approvals and permitting advice. This identified the need for an EPBC self-assessment, a waterway barrier works approval, and a general fisheries permit for the relocation of fish.

Offline Storage Dam – Gladstone Area Water Board - Ecologist

As part of the overall project team I was responsible for the planning and completion of terrestrial fauna surveys, fish passage assessments and marine plant surveys for the new offline storage dam project south of Gladstone. The assessments and reporting were used to obtain necessary approvals, undertake EPBC Act self-assessments of significant impact and ascertain likely offset obligations.

Offline Storage Dam and Waterway Diversion - Dalrymple Bay Coal Terminal - Ecologist.

As part of the broader project team I was engaged to complete relevant environmental assessments and support the obtaining approvals for the construction and operation of the dam. This included terrestrial and aquatic assessments and also monitoring of the waterway diversions performance as part of water license conditions for the diversion.

Development

Flora and Fauna Surveys - Palm Lakes Pty Ltd – Project Management and Ecology

Since 2014 I have been involved in the completion of extensive flora and fauna surveys to inform the proposed development of a 79 hectare residential retirement village. Target threatened species encountered during the surveys included Wallum froglet, Swamp crayfish and Water mouse. The site, which supports various matters of local, state and environmental significance has required comprehensive ecological surveys and assessments and

the provision of accurate and practicable advice concerning environmental constraints, impact avoidance/minimisation and offsets.

Elizabeth Daniels Sports Complex - Moreton Bay Regional Council - Ecologist

Completed flora and fauna assessments to enable the incorporation of sensitive environments and ecology into the sports park masterplan.

Sports Fields Assessments - Moreton Bay Regional Council – Ecologist

Completed desktop and field based constraints assessments over three potential and current sports and recreation sites to assess the potential to expand or commence sports and recreation uses at each site



Agatha Dolan

Summary of Experience

Agatha is an ecologist with experience in ecological surveys and reporting. She has worked on projects within a number of sectors, including linear infrastructure, mining, commercial development and local & state government. She is an experienced report writer and data analyst. She has a background in managing and interpreting large-scale datasets (using both excel and R Project for statistical computing). She also has experience in spatial analysis and expertise in land-use suitability analyses and data visualization for ecological monitoring purposes using both QGIS and ArcGIS.

Significant Projects

Border to Gowrie Ecological Surveys - Australian Rail Track Corporation (2020 - 2021)

> Undertook fauna surveys and habitat assessments as part of the ecological scope of the Border to Gowrie rail development project. Assisted in data collection and reporting.

Cross River Rail Secondment - CPB Contractors (2019)

> Assisted in the preparation of sub plans to support the Construction Environment Management Plan for the Tunnels Stations and Development Package.

Priority Species Listing and Decision Support Framework Project - Logan City Council (2019)

> Developed a priority list of threatened species within the Logan local government area using the Project Prioritisation Protocol. Developed an excel-based decision support tool to assist in systematically assessing cost-effectiveness of Council's potential projects.

Ecological Fauna Surveys Sports Precinct Master Plan - Redlands City Council (2020)

> Undertook fauna surveys to inform an ecological assessment report for a sports field development.

Flying-fox Habitat Suitability Analysis - Mount Isa City Council (2020)

> Prepared a habitat suitability analysis using GIS software to identify suitable areas for a flying-fox reserve. Undertook field verification surveys and prepared a management plan including recommendations for the design of the reserve.

Preliminary Environmental Options Analysis - Lytton Road Upgrade and Norris Road Upgrade (2019)

> Assessed environmental opportunities and constraints for two road upgrade projects for Brisbane City Council.

Current Position

Senior Ecologist
Water & Environment

Profession

Ecologist

Years' Experience

6

Joined Cardno

March 2019

Education

BA Environmental Policy
MSc Conservation Science

Senior Ecologist - Cardno Pty Ltd

August 2021 - Present

Agatha's current position as an ecologist involves:

- > Conduct of fauna surveys, habitat assessments and ecological projects
- > Coordination of projects with other industry professionals
- > Preparation of reports and management plans
- > Coordination of projects with other industry professionals and stakeholders
- > Provision of environmental advice and client liaison
- > Delivery of surveys and field assessments
- > Preparation of fee proposals and cost estimates

Ecologist - Cardno Pty Ltd

March 2019 - September 2019 / September 2020

Agatha's current position as an ecologist involves:

- > Conduct of fauna surveys, habitat assessments and ecological projects
- > Preparation of reports and management plans
- > Coordination of projects with other industry professionals and stakeholders
- > Provision of environmental advice and client liaison

Project Coordinator - Biodiversity Australia Pty Ltd

September 2019 - September 2020

Agatha's position as a unit coordinator primarily included management of projects, provision of technical advice, preparation of reports, and supervision of operational staff members.

- > Preparation of fee proposals and cost estimates
- > Management and administration of wildlife management projects
- > Management of projects and adherence to timeframes
- > Preparation of management plans and scientific reports
- > Preparation and delivery of presentations and community engagement sessions
- > Use of spatial analysis programs including ArcGIS and QGIS
- > Management and delivery of formalized stakeholder engagement sessions

Wildlife Biologist - Biodiversity Australia Pty Ltd

July 2016 - February 2019

Agatha's position as a wildlife biologist primarily included management of projects, and preparation of reports.

- > Preparation of fee proposals and cost estimates
- > Preparation of management plans and scientific reports
- > Preparation and delivery of presentations and community engagement sessions
- > Use of spatial analysis programs including ArcGIS and QGIS
- > Management and delivery of formalized stakeholder engagement sessions

Greater Brisbane Greyhound Centre

APPENDIX

C

DESKTOP SEARCHES



now

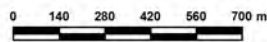




Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
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 GDA 1994 Queensland Albers

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Species information

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Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: Plants (including other non-animals such as fungi and protists)
Type: Native
Queensland status: All
Records: All
Date: All
Latitude: -27.6696
Longitude: 152.7405
Distance: 5
Email: melissa.osborne@cardno.com.au
Date submitted: Tuesday 22 Feb 2022 11:06:15
Date extracted: Tuesday 22 Feb 2022 11:10:03

The number of records retrieved = 27

Disclaimer

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Information about your Species lists request is logged for quality assurance, user support and product enhancement purposes only.

The information provided should be appropriately acknowledged as being derived from WildNet database when it is used. As the WildNet Program is still in a process of collating and vetting data, it is possible the information given is not complete. Go to the WildNet database webpage (<https://www.qld.gov.au/environment/plants-animals/species-information/wildnet>) to find out more about WildNet and where to access other WildNet information products approved for publication. Feedback about WildNet species lists should be emailed to wildlife.online@des.qld.gov.au.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
fungi	lecanoromycetes	Cladoniaceae	<i>Cladia muelleri</i>			C		1/1
plants	land plants	Acanthaceae	<i>Pseuderanthemum variabile</i>	pastel flower		C		1/1
plants	land plants	Asteraceae	<i>Cassinia straminea</i>			C		1/1
plants	land plants	Asteraceae	<i>Chrysocephalum apiculatum</i>	yellow buttons		C		1/1
plants	land plants	Asteraceae	<i>Leiocarpa brevicompta</i>			C		1/1
plants	land plants	Casuarinaceae	<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>			C		1/1
plants	land plants	Casuarinaceae	<i>Casuarina glauca</i>	swamp she-oak		C		1/1
plants	land plants	Celastraceae	<i>Hippocratea barbata</i>	knotvine		C		1/1
plants	land plants	Chenopodiaceae	<i>Maireana microphylla</i>			C		1/1
plants	land plants	Cupressaceae	<i>Callitris baileyi</i>	Bailey's cypress		NT		1/1
plants	land plants	Cyperaceae	<i>Cyperus bifax</i>	western nutgrass		C		1/1
plants	land plants	Lamiaceae	<i>Ajuga australis</i>	Australian bugle		C		1/1
plants	land plants	Lauraceae	<i>Cryptocarya triplinervis</i> var. <i>pubens</i>			C		1/1
plants	land plants	Leguminosae	<i>Tephrosia</i> sp. (The Grampians L.H.Bird AQ565381)			C		1/1
plants	land plants	Malvaceae	<i>Hibiscus tridactylites</i>			C		1/1
plants	land plants	Myrtaceae	<i>Eucalyptus crebra</i>	narrow-leaved red ironbark		C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca irbyana</i>			E		5/4
plants	land plants	Oleaceae	<i>Jasminum dianthifolium</i>			C		1/1
plants	land plants	Poaceae	<i>Aristida calycina</i> var. <i>calycina</i>			C		1/1
plants	land plants	Poaceae	<i>Calyptrichloa gracillima</i> subsp. <i>ipsviciensis</i>			CR		2/2
plants	land plants	Poaceae	<i>Digitaria</i>					1/1
plants	land plants	Poaceae	<i>Heteropogon contortus</i>	black speargrass		C		1
plants	land plants	Proteaceae	<i>Grevillea robusta</i>			C		1/1
plants	land plants	Pteridaceae	<i>Cheilanthes distans</i>	bristly cloak fern		C		1/1
plants	land plants	Pteridaceae	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>			C		1/1
plants	land plants	Rubiaceae	<i>Scleromitron subulatum</i>			C		1/1
plants	land plants	Vitaceae	<i>Causonis clematidea</i>			C		1/1

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.



Vegetation management report

For Lot: 2 Plan: SP193446

22/02/2022

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Recent changes

Updated mapping

Updated vegetation mapping was released on 8 September 2021 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, wetland, high-value regrowth and essential habitat mapping.

The Department of Environment and Science have also updated their protected plant and koala protection mapping to align with the Queensland Herbarium scientific updates.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 2 Plan: SP193446, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
2	SP193446	Freehold	201,400

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 2 Plan: SP193446, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Ipswich City

Bioregion(s)	Subregion(s)
Southeast Queensland	Moreton Basin

Catchment(s)
Brisbane

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the *Vegetation Management Regulation 2012*, the *Planning Act 2016* and the *Planning Regulation 2017*, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem prescribed under Schedule 5 of the *Vegetation Management Regulation 2012*; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions>.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes>

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at

<https://apps.dnrm.qld.gov.au/vegetation/>

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans>

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval.

Information on how to apply for a development approval is available at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development>

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

Visit <https://www.resources.qld.gov.au/?contact=vegetation> to submit an online enquiry.

3. Vegetation management framework for Lot: 2 Plan: SP193446

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 20.14ha

Vegetation category	Area (ha)
Category B	2.9
Category C	0.7
Category X	16.5

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

There is no Property Map of Assessable Vegetation (PMAV) present on this property.

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at <https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/>

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
12.3.3	Endangered	C	0.01	Eucalyptus tereticornis woodland on Quaternary alluvium	Sparse
12.9-10.2	Least concern	B	1.30	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.2	Least concern	C	0.20	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.3	Of concern	C	0.01	Eucalyptus moluccana open forest on sedimentary rocks	Mid-dense
12.9-10.7	Of concern	B	1.63	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp. and E. melanophloia woodland on sedimentary rocks	Sparse
12.9-10.7	Of concern	C	0.50	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp. and E. melanophloia woodland on sedimentary rocks	Sparse
non-rem	None	X	16.48	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

- 1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
- 2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	<i>Phascolarctos cinereus</i>	koala	V	Open forests and woodlands containing <i>Eucalyptus</i> , <i>Corymbia</i> , <i>Lophostemon</i> or <i>Melaleuca</i> trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: <i>Corymbia citriodora</i> , <i>Corymbia henryi</i> , <i>Corymbia intermedia</i> , <i>Eucalyptus acmenoides</i> , <i>Eucalyptus bancroftii</i> , <i>Eucalyptus biturbinata</i> , <i>Eucalyptus blakelyi</i> , <i>Eucalyptus brownii</i> , <i>Eucalyptus camaldulensis</i> , <i>Eucalyptus carnea</i> , <i>Eucalyptus chloroclada</i> , <i>Eucalyptus coolabah</i> , <i>Eucalyptus crebra</i> , <i>Eucalyptus dealbata</i> , <i>Eucalyptus drepanophylla</i> , <i>Eucalyptus dunnii</i> , <i>Eucalyptus eugenioides</i> , <i>Eucalyptus exserta</i> , <i>Eucalyptus fibrosa</i> , <i>Eucalyptus grandis</i> , <i>Eucalyptus helidonica</i> , <i>Eucalyptus latisinensis</i> , <i>Eucalyptus longirostrata</i> , <i>Eucalyptus major</i> , <i>Eucalyptus melanophloia</i> , <i>Eucalyptus melliodora</i> , <i>Eucalyptus microcarpa</i> , <i>Eucalyptus microcorys</i> , <i>Eucalyptus microtheca</i> , <i>Eucalyptus moluccana</i> , <i>Eucalyptus montivaga</i> , <i>Eucalyptus orgadophila</i> , <i>Eucalyptus papuana</i> , <i>Eucalyptus pilularis</i> , <i>Eucalyptus platyphylla</i> , <i>Eucalyptus populnea</i> , <i>Eucalyptus portuensis</i> , <i>Eucalyptus propinqua</i> , <i>Eucalyptus racemosa</i> , <i>Eucalyptus resinifera</i> , <i>Eucalyptus robusta</i> , <i>Eucalyptus saligna</i> , <i>Eucalyptus seeana</i> , <i>Eucalyptus siderophloia</i> , <i>Eucalyptus sideroxylon</i> , <i>Eucalyptus tereticornis</i> , <i>Eucalyptus thozetiana</i> , <i>Eucalyptus tindaliae</i> , <i>Eucalyptus umbra</i> , <i>Lophostemon confertus</i> , <i>Melaleuca leucadendra</i> , <i>Melaleuca quinquenervia</i> .	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.
34709	<i>Calyptochloa gracillima</i> subsp. <i>ipsviciensis</i>	None	CE	woodland of <i>Corymbia citriodora</i> or <i>Eucalyptus crebra</i> and <i>C. citriodora</i> or <i>E. fibrosa</i> with <i>C. citriodora</i> and <i>E. carnea</i> ; open forest of <i>Lophostemon confertus</i> , <i>Eucalyptus tereticornis</i> , <i>E. siderophloia</i>	0 to 200 m	loam to clay loam	hill slope

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.57, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 8.1.5, 8.2.3, 8.2.6, 8.2.7, 8.2.8, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.3.1, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.8, 8.3.10, 8.3.11, 8.3.13, 8.5.1, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.9.1, 8.10.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.11.10, 8.11.12, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 8.12.26, 8.12.27, 8.12.29, 8.12.31, 8.12.32, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.10, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.27, 9.4.1, 9.4.2, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.15, 9.5.16, 9.5.17, 9.7.1, 9.7.2, 9.7.3, 9.7.4, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.3, 9.8.4, 9.8.5, 9.8.9, 9.8.10, 9.8.11, 9.8.13, 9.10.1, 9.10.3, 9.10.4, 9.10.5, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.12, 9.11.13, 9.11.14, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.21, 9.11.22, 9.11.23, 9.11.24, 9.11.25, 9.11.26, 9.11.28, 9.11.29, 9.11.30, 9.11.31, 9.11.32, 9.12.1, 9.12.2, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.14, 9.12.15, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.23, 9.12.24, 9.12.25, 9.12.26, 9.12.27, 9.12.28, 9.12.29, 9.12.30, 9.12.31, 9.12.32, 9.12.33, 9.12.35, 9.12.36, 9.12.37, 9.12.38, 9.12.39, 9.12.44, 10.3.2, 10.3.3, 10.3.5, 10.3.6, 10.3.9, 10.3.10, 10.3.11, 10.3.12, 10.3.13, 10.3.14, 10.3.15, 10.3.17, 10.3.20, 10.3.27, 10.3.28, 10.4.3, 10.4.9, 10.5.1, 10.5.2, 10.5.4, 10.5.5, 10.5.7, 10.5.8, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 10.7.1, 10.7.2, 10.7.3, 10.7.4, 10.7.5, 10.7.9, 10.7.10, 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34709	12.9-10.2, 12.9-10.7, 12.9-10.17

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 2 Plan: SP193446.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:

<https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form>

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new [property maps of assessable vegetation \(PMAV\)](#).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

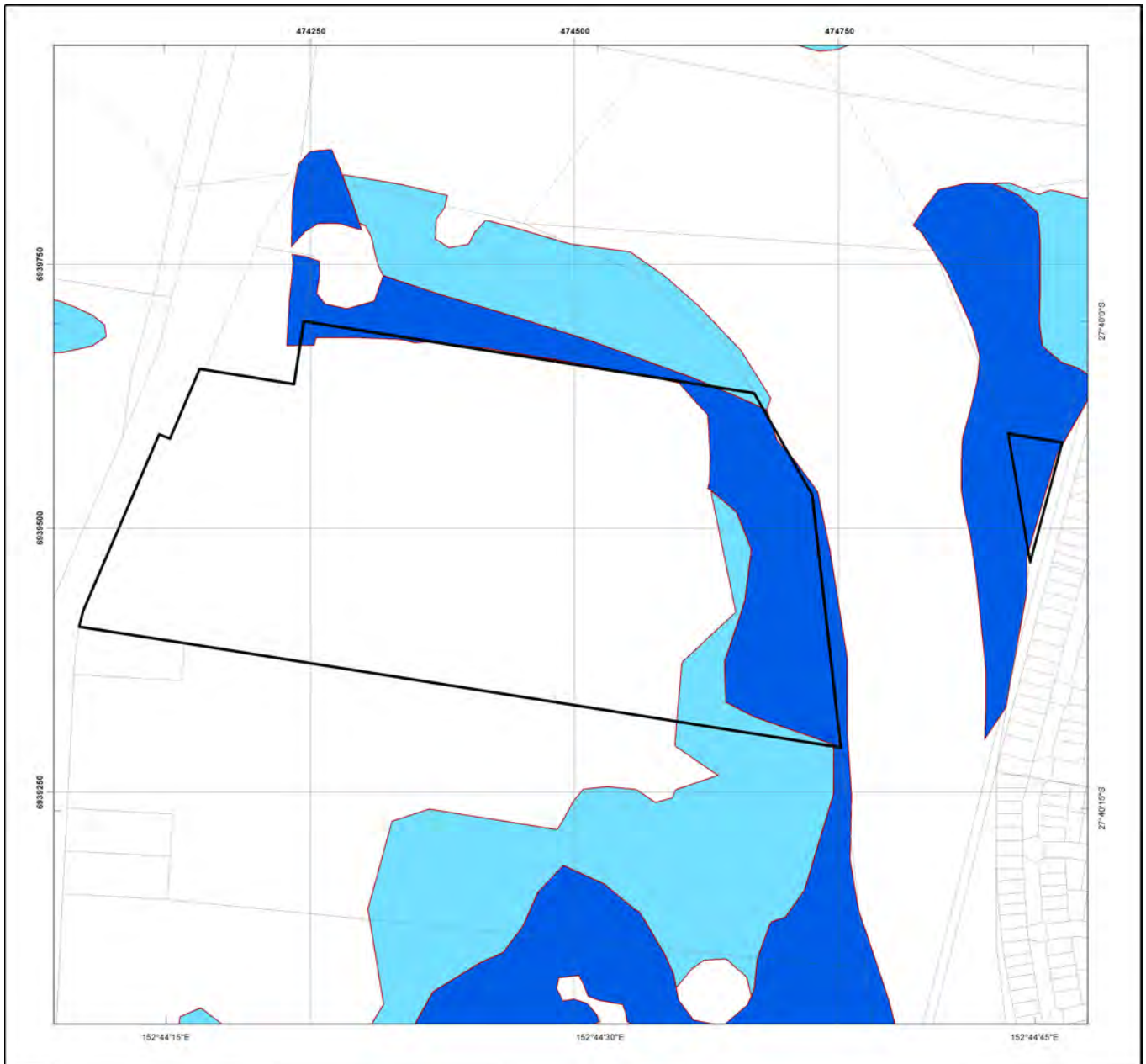
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture










The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

4.1 Regulated vegetation management map



Regulated Vegetation Management Map

Legend

-  Selected Lot and Plan
-  Category A area (Vegetation offsets/compliance notices/VDecs)
-  Category B area (Remnant vegetation)
-  Category C area (High-value regrowth vegetation)
-  Category R area (Reef regrowth watercourse vegetation)
-  Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
-  Water
-  Area not categorised
-  Other land parcel boundaries



This product is projected into:
GDA 1994 MGA Zone 56

Disclaimer:

While every care is taken to ensure the accuracy of this product, the Department of Resources makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.



4.2 Vegetation management supporting map



Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries



0 30 60 90 120 150 m

This product is projected into:
GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

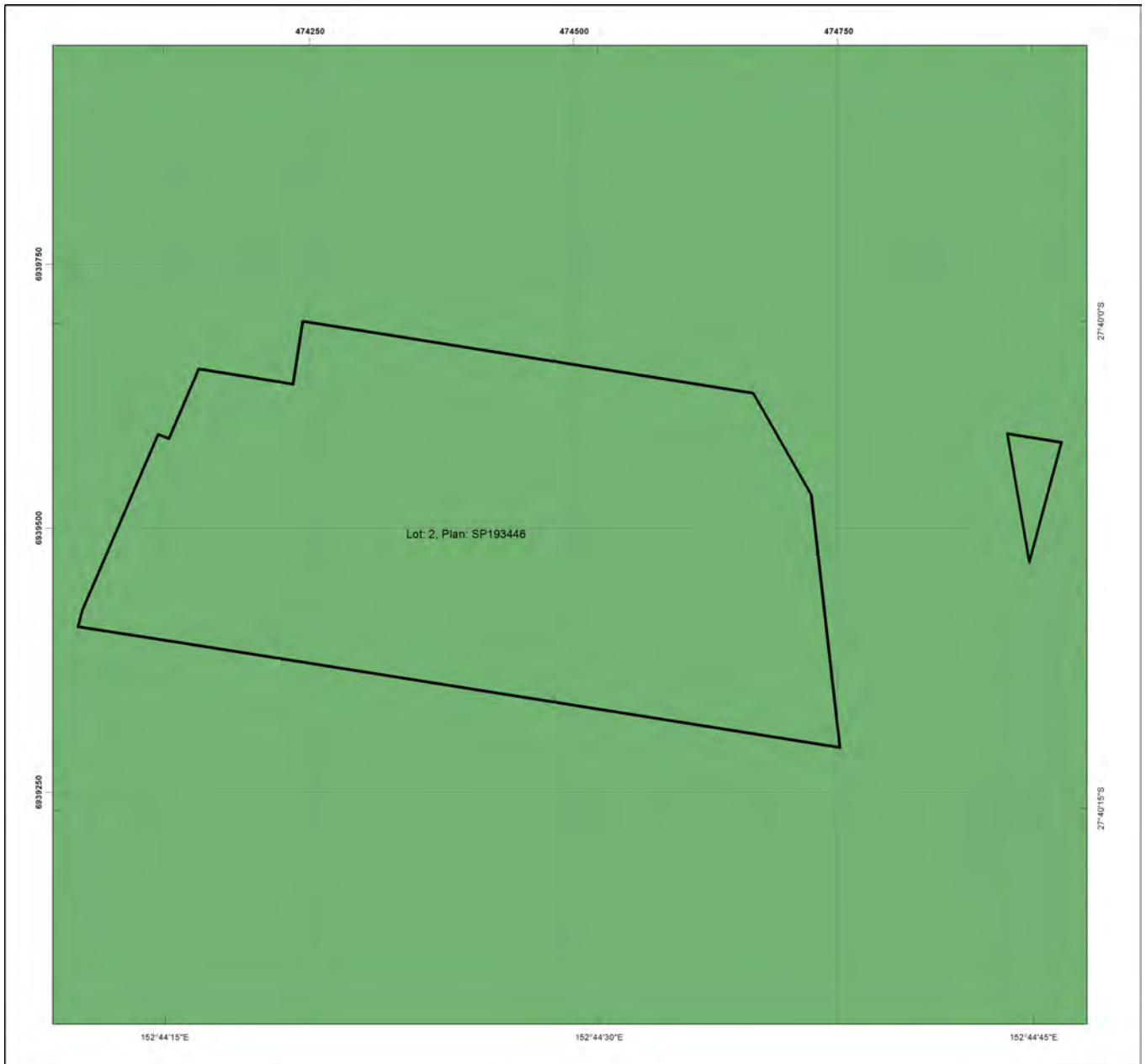
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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>





Land parcel boundaries are provided as locational aid only.

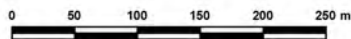
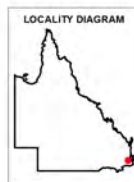
4.3 Coastal/non-coastal map



Coastal/Non Coastal Map

Legend

-  Selected Lot and Plan
-  Coastal
-  Non Coastal
-  Other land parcel boundaries



This product is projected into:
GDA 1994 MGA Zone 56

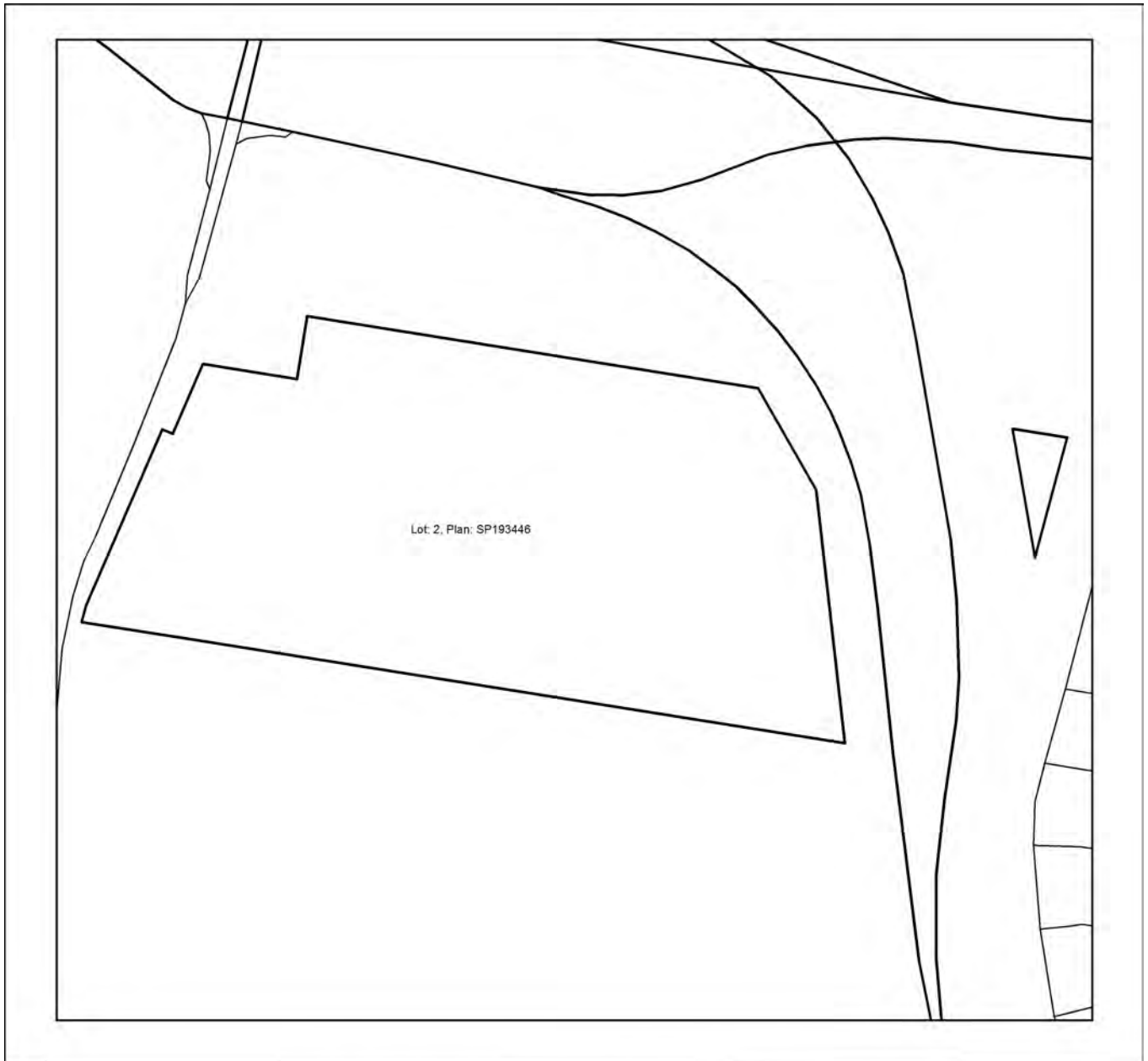
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Land parcel boundaries shown are provided as a locational aid only.











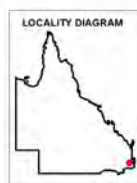
4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

Legend

-  Selected Lot and Plan
-  Towns
-  Rivers and creeks
-  Freeways / motorways; Highways
-  Secondary roads; Streets
- Agricultural land class A or B
-  A
-  B
-  Not class A or B



This product is projected into GDA 1994 MGA Zone 56

Disclaimer

Whilst every care is taken to ensure the accuracy of these details all data custodians and/or the State of Queensland makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses damages (including indirect or consequential damage) and costs to which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

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5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the [Nature Conservation Act 1992](#) (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see [Operational policy: When a protected plant in Queensland is considered to be 'in the wild'](#)) that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for endangered, vulnerable or near threatened (EVNT) plants. These are areas where EVNT plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the [Flora survey guidelines](#). The main objective of a flora survey is to locate any EVNT plants that may be present in the clearing impact area.

If the flora survey identifies that EVNT plants are not present within the clearing impact area or clearing within 100m of EVNT plants can be avoided, the clearing activity is exempt from a permit. An [exempt clearing notification form](#) must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that EVNT plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the [clearing permit application form](#).

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that EVNT plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:

Phone 1300 130 372 (and select option four)

Email palm@des.qld.gov.au

Visit <https://www.qld.gov.au/environment/plants-animals/plants/protected-plants>

5.5 Protected plants flora survey trigger map

This map included may also be requested individually at: <https://apps.des.qld.gov.au/map-request/flora-survey-trigger/>.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.






Species information

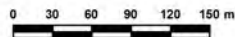
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.



Protected Plants Flora Survey Trigger Map

Legend

-  Selected Lot and Plan
-  High risk area
-  Other land parcel boundaries
-  Freeways / motorways / highways
-  Secondary roads / streets



This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as vulnerable by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document [Spatial modelling in South East Queensland](#).

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document [Guideline - Requests to make, amend or revoke a koala habitat area determination](#).

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps>. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

- 1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
- 2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the [Planning Regulation 2017](#). More information on exempted development can be found here:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
 - the local government planning scheme makes the development assessable;
 - the premises includes an area that is both a koala priority area and a koala habitat area; and
 - the development does not involve interfering with koala habitat (defined above); and
- development in identified koala broad-hectare areas.

The [Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks](#) outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the [Nature Conservation \(Koala\) Conservation Plan 2017](#) prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

For further information on the koala protection framework:

Phone 13 QGOV (13 74 68)

Email koala.assessment@des.qld.gov.au

Visit <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping>

7. Koala protection framework details for Lot: 2 Plan: SP193446

7.1 Koala districts

Koala District A

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map

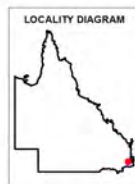


Koala priority area, koala habitat area and identified koala broad-hectare area map

Legend

- Selected Lot and Plan
- Koala habitat area (core)
- Koala habitat area (locally refined)
- Koala priority area
- Identified koala broad-hectare area
- Cadastral Boundaries
- Towns
- Highway
- Connector
- Street/Local Road
- Major rivers/creeks
- Queensland

The koala habitat mapping within South East Queensland uses regional ecosystem line-work compiled at a scale varying from 1:25,000 to 1:100,000. Line-work should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.



Disclaimer:
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The koala conservation plan maps will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

In order to ensure that the most recent map for an area of interest can be accessed, prior to the annual update, a register of changes made to koala habitat areas as a result of the map amendment process will be available at:
<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/>.
The register will include lot on plan for the change, the date the decision was made and the map issued to the landholder which shows areas determined to be koala habitat areas.

7.3 Koala habitat regional ecosystems for core koala habitat areas



Koala habitat regional ecosystems for core koala habitat areas

Legend

-  Selected Lot and Plan
-  Koala habitat area (core)
-  Towns
-  Highway
-  Connector
-  Street/Local Road
-  Major rivers/creeks
-  Queensland

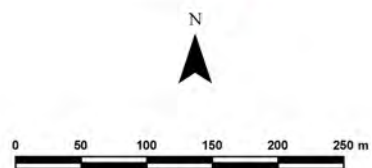


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The koala habitat mapping within South East Queensland uses regional ecosystem linework compiled at a scale varying from 1:25,000 to 1:100,000. Linework should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.

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This product is projected into GDA 1994 MGA Zone 56

8. Other relevant legislation contacts list

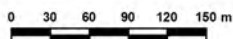
Activity	Legislation	Agency	Contact details
<ul style="list-style-type: none"> • Interference with overland flow • Earthworks, significant disturbance 	<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
<ul style="list-style-type: none"> • Indigenous Cultural Heritage 	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
<ul style="list-style-type: none"> • Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues 	<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
<ul style="list-style-type: none"> • Protected plants and protected areas 	<i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
<ul style="list-style-type: none"> • Koala mapping and regulations 	<i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
<ul style="list-style-type: none"> • Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures 	<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
<ul style="list-style-type: none"> • Matters of National Environmental Significance including listed threatened species and ecological communities 	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
<ul style="list-style-type: none"> • Development and planning processes 	<i>Planning Act 2016</i> <i>State Development and Public Works Organisation Act 1971</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
<ul style="list-style-type: none"> • Local government requirements 	<i>Local Government Act 2009</i> <i>Planning Act 2016</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
<ul style="list-style-type: none"> • Harvesting timber in the Wet Tropics of Qld World Heritage area 	<i>Wet Tropics World Heritage Protection and Management Act 1993</i>	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au



Vegetation Management Pre-clear Regional Ecosystem Map

Legend

- Selected Lot and Plan
- Pre-clearing area containing Endangered RE
- Pre-clearing area containing Of Concern RE
- Pre-clearing area that is a Least Concern RE
- Water
- Road Names
- Other land parcel boundaries



This product is projected into:
 GDA 1994 MGA Zone 56

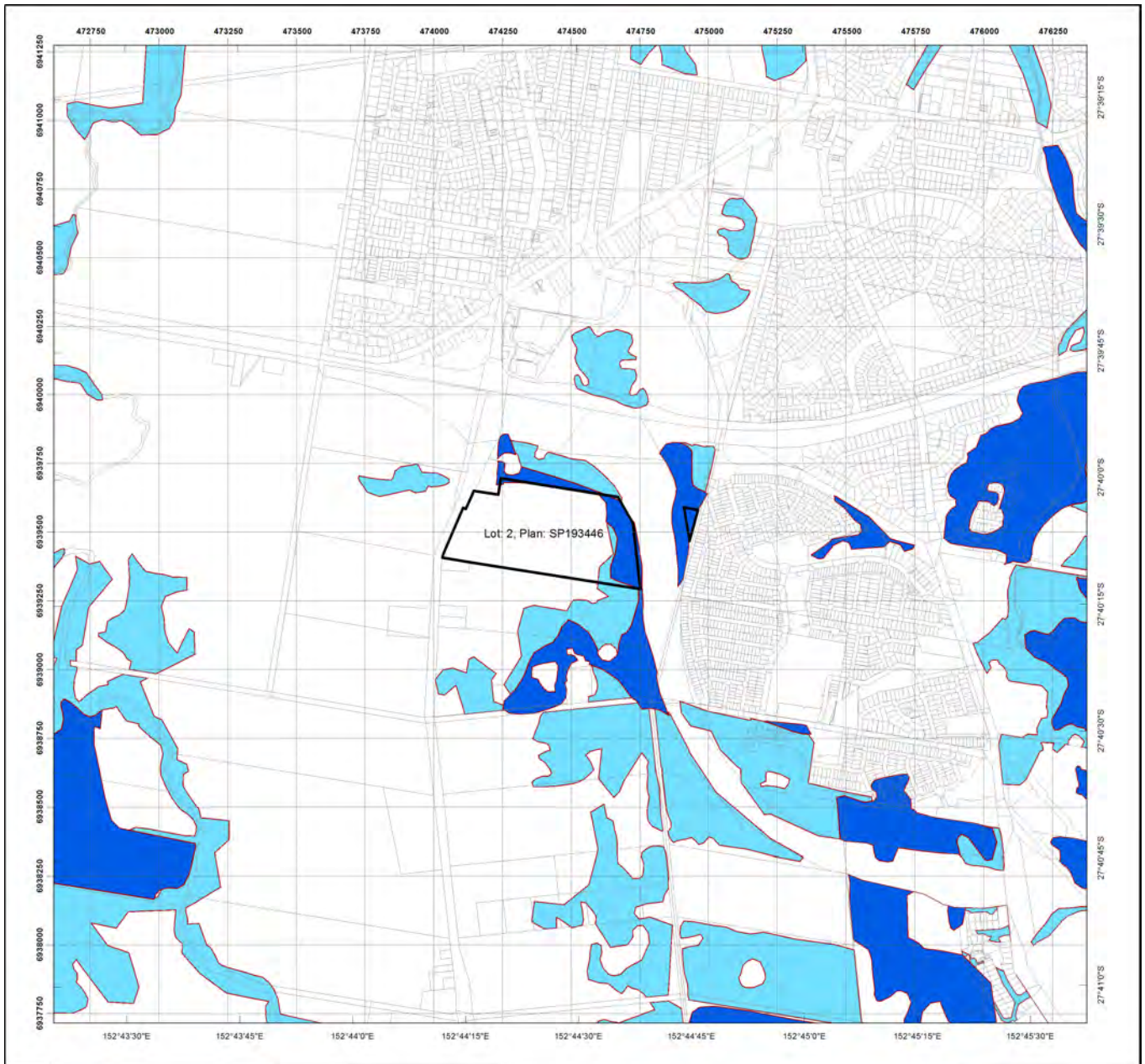
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Pre-clearing regional ecosystem line-work reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only.

Digital data for the Pre-clearing regional ecosystem map is available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

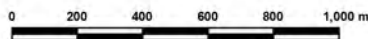
Land parcel boundaries shown are provided as a locational aid only.



Regulated Vegetation Management Map

Legend

-  Selected Lot and Plan
-  Category A area (Vegetation offsets/compliance notices/VDecs)
-  Category B area (Remnant vegetation)
-  Category C area (High-value regrowth vegetation)
-  Category R area (Reef regrowth watercourse vegetation)
-  Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
-  Water
-  Area not categorised
-  Other land parcel boundaries



This product is projected into:
 GDA 1994 MGA Zone 56

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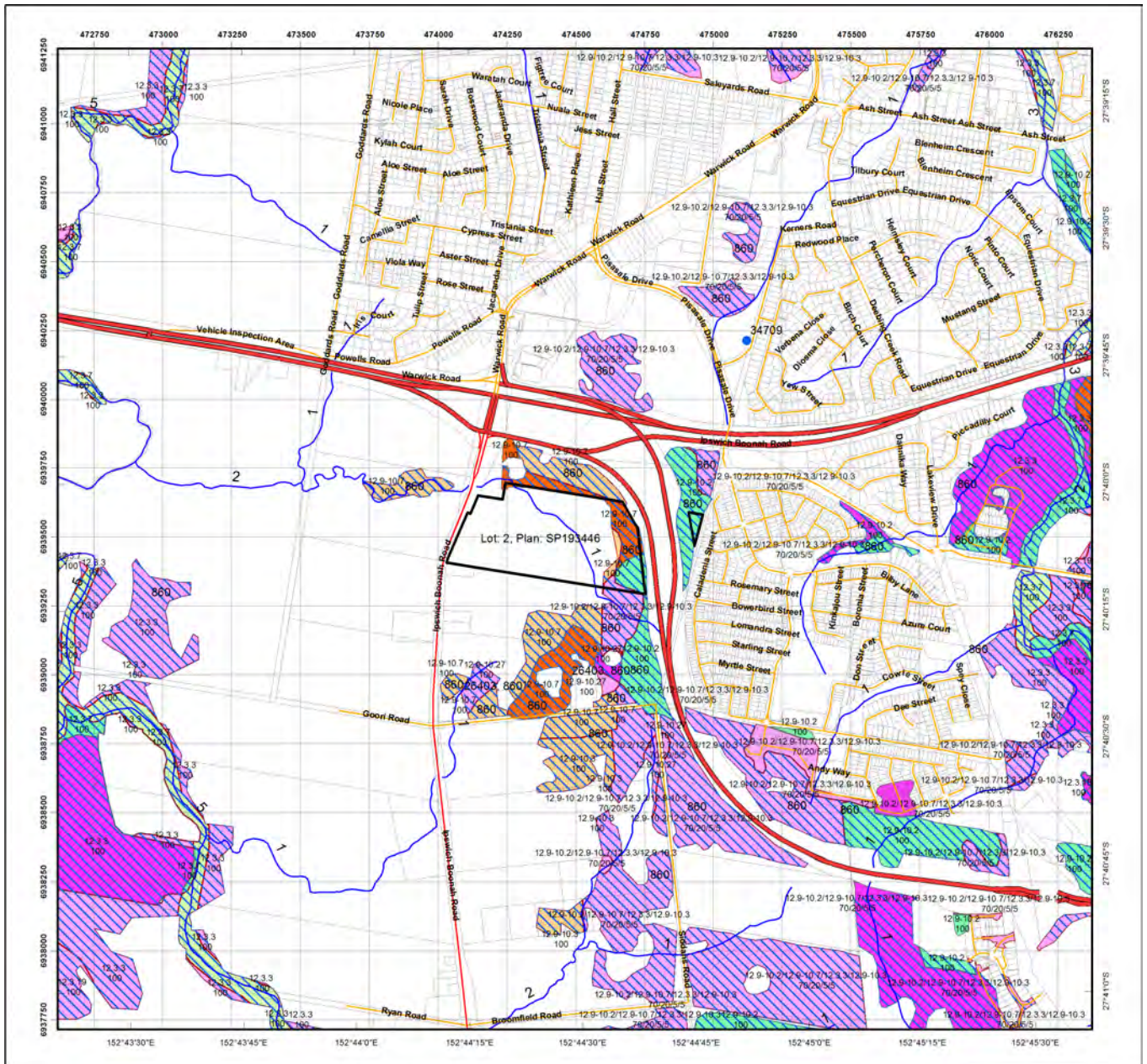
Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

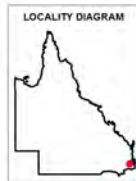




Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries



0 140 280 420 560 700 m

This product is projected into:
 GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

Land parcel boundaries are provided as locational aid only.

Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*, and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Resources website (<http://www.resources.qld.gov.au>) has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

- 1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or
- 2) in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes critically endangered, endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	<i>Phascolarctos cinereus</i>	koala	V	Open forests and woodlands containing <i>Eucalyptus</i> , <i>Corymbia</i> , <i>Lophostemon</i> or <i>Melaleuca</i> trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: <i>Corymbia citriodora</i> , <i>Corymbia henryi</i> , <i>Corymbia intermedia</i> , <i>Eucalyptus acmenoides</i> , <i>Eucalyptus bancroftii</i> , <i>Eucalyptus biturbinata</i> , <i>Eucalyptus blakelyi</i> , <i>Eucalyptus brownii</i> , <i>Eucalyptus camaldulensis</i> , <i>Eucalyptus carnea</i> , <i>Eucalyptus chloroclada</i> , <i>Eucalyptus coolabah</i> , <i>Eucalyptus crebra</i> , <i>Eucalyptus dealbata</i> , <i>Eucalyptus drepanophylla</i> , <i>Eucalyptus dunii</i> , <i>Eucalyptus eugenioides</i> , <i>Eucalyptus exserta</i> , <i>Eucalyptus fibrosa</i> , <i>Eucalyptus grandis</i> , <i>Eucalyptus helidonica</i> , <i>Eucalyptus latissinensis</i> , <i>Eucalyptus longirostrata</i> , <i>Eucalyptus major</i> , <i>Eucalyptus melanophloia</i> , <i>Eucalyptus melliodora</i> , <i>Eucalyptus microcarpa</i> , <i>Eucalyptus microcorys</i> , <i>Eucalyptus microtheca</i> , <i>Eucalyptus moliucana</i> , <i>Eucalyptus montivaga</i> , <i>Eucalyptus orgadophila</i> , <i>Eucalyptus papuana</i> , <i>Eucalyptus pilularis</i> , <i>Eucalyptus platyphylla</i> , <i>Eucalyptus populnea</i> , <i>Eucalyptus portuensis</i> , <i>Eucalyptus propinqua</i> , <i>Eucalyptus racemosa</i> , <i>Eucalyptus resinifera</i> , <i>Eucalyptus robusta</i> , <i>Eucalyptus saligna</i> , <i>Eucalyptus seeana</i> , <i>Eucalyptus siderophloia</i> , <i>Eucalyptus sideroxylon</i> , <i>Eucalyptus tereticornis</i> , <i>Eucalyptus thozettiana</i> , <i>Eucalyptus tindaliae</i> , <i>Eucalyptus umbra</i> , <i>Lophostemon confertus</i> , <i>Melaleuca leucadendra</i> , <i>Melaleuca quinquenervia</i> .	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.
34709	<i>Calyptochloa gracillima</i> subsp. <i>ipsviciensis</i>	None	CE	woodland of <i>Corymbia citriodora</i> or <i>Eucalyptus crebra</i> and <i>C. citriodora</i> or <i>E. fibrosa</i> with <i>C. citriodora</i> and <i>E. carnea</i> ; open forest of <i>Lophostemon confertus</i> , <i>Eucalyptus tereticornis</i> , <i>E. siderophloia</i>	0 to 200 m	loam to clay loam	hill slope

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.12.30, 7.12.33, 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13.12.1, 13.12.2, 13.12.3, 13.12.4, 13.12.5, 13.12.6, 13.12.8, 13.12.9, 13.12.10.
34709	12.9-10.2, 12.9-10.7, 12.9-10.17



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 22/02/22 12:13:27

[Summary](#)

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[Matters of NES](#)

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[Coordinates](#)

[Buffer: 5.0Km](#)

No Image
Available

Summary

Matters of National Environmental 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:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	37
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 <http://www.environment.gov.au/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 Land:	5
Commonwealth Heritage Places:	1
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	32
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Moreton bay	40 - 50km upstream

Listed Threatened Ecological Communities

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.

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area
Erythrorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Neoceratodus forsteri Australian Lungfish, Queensland Lungfish [67620]	Vulnerable	Species or species habitat known to occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within 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
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area
Cupaniopsis tomentella Boonah Tuckeroo [3322]	Vulnerable	Species or species habitat likely to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Fontainea venosa [24040]	Vulnerable	Species or species habitat may occur within area
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat may occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat may occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

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.

Name
Defence - AMBERLEY - AP3 REMOTE RECEIVERS SITE
Defence - AMBERLEY - AP4 VHF STATION
Defence - AMBERLEY - AP89 BUFFER ZONE
Defence - AMBERLEY - AP90 SMALL ARMS RANGE (PURGA)
Defence - AMBERLEY - RAAF BASE

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Historic		
Amberley RAAF Base Group	QLD	Listed place

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Tir Na Crann	QLD

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area

Frogs

Name	Status	Type of Presence
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree,		Species or species

Name	Status	Type of Presence
Horse Bean [12301]		habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-27.66965 152.74057

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

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APPENDIX

D

LIKELIHOOD OF OCCURRENCE
ASSESSMENT

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Scientific Name	Common Name	Status*		Source^	General habitat requirements	Known: The species has been positively recorded in the Site by a qualified ecologist during past 30 years.	Likely: Suitable habitat for the species occurs in the Site and proximate records exist.	Possible: Suitable habitat for the species occurs on Site but no recent records from the Site or proximate areas exist OR suitable habitat for the species may not occur in the Site but recent records from proximate areas exist.	Unlikely: Suitable habitat for the species does not occur in the Site, and no recent records from the Site or proximate areas exist.	Likelihood of Occurrence
		NC Act	EPBC Act							
<i>Callitris baileyi</i>	Bailey's cypress	NT	-	WO	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.	No	Yes	No	No	Likely
<i>Calyptrichloa gracillima subsp. ipsviensis</i>	-	CR	-	WO	Has a very restricted range and has previously been recorded 600m northeast of the Site. The species is endemic to southeast Queensland in the vicinity of Ipswich. It is known only known from a few locations near the urban centre of Ipswich, two of which are Ipswich City Council reserves. At two locations only one or two plants or mats have been observed. It is an uncommon to dominant species in woodlands dominated by <i>Eucalyptus</i> spp. including <i>E. crebra</i> and <i>E. moluccana</i> , <i>Corymbia citriodora subsp. variegata</i> .	No	Yes	No	No	Likely
<i>Bosistoa transversa</i>	Three-leaved Bosistoa	-	V	PMST	Wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 m in altitude. Associated vegetation includes <i>Argyrodendron trifoliolatum</i> , <i>Syzygium hodgkinsoniae</i> , <i>Endiandra pubens</i> , <i>Dendrocnide photinophylla</i> , <i>Acmena ingens</i> , <i>Diploglottis australis</i> and <i>Diospyros mabacea</i> .	No	No	No	Yes	Unlikely
<i>Cupaniopsis tomentella</i>	Boonah Tuckeroo	-	V	PMST	Known from between Boonah and Ipswich where it grown in vine thickets on clay soil.	No	No	No	Yes	Unlikely
<i>Dichanthium setosum</i>	Bluegrass	-	V	PMST	Occurs in heavy soils (predominantly cracking clays or alluvium, often in gilgai) in woodland or open woodland usually dominated by <i>Acacia</i> (brigalow) and/or <i>Eucalyptus</i> species. The climate is tropical to subtropical and markedly seasonal with the habitat drying out for part of the year.	No	No	No	Yes	Unlikely
<i>Melaleuca irbyana</i>	-	E	-	WO	Grows in flat areas that are periodically waterlogged, in eucalypt forest, mixed forest and <i>Melaleuca</i> woodland with a sparse and grassy understorey. It grows on poorly draining, heavy clay soils.	Yes	No	No	No	Known
<i>Notelaea lloydii</i>	Lloyd's Olive	V	V	PMST	Hilly, steep terrain or gullies and dry gentle slopes (rarely rocky outcrops) on shallow, well-drained rocky soils. Often found in ecotone between eucalypt forest and vine thickets. Recorded with <i>Eucalyptus crebra</i> , <i>Corymbia maculata</i> , <i>E. acmenoides</i> , <i>C. citriodora</i> , <i>Acacia concurrens</i> , and associated trees and shrubs <i>Brachychiton populneus</i> , <i>Alphitonia excelsa</i> , <i>A. aulacocarpa</i> , <i>A. falcata</i> , & <i>Diospyros ferrea var. geminata</i> . Grows at 80 - 480m above sea level.	No	No	Yes	No	Unlikely
<i>Samadera bidwillii</i>	Quassia	-	V	PMST	Occurs in lowland rainforest often with <i>Araucaria cunninghamii</i> or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland, it is commonly found in areas adjacent to both temporary and permanent watercourses up to 510 m altitude.	No	No	No	Yes	Unlikely

*NC Act: CR = Critically Endangered; E = Endangered; NT = Near Threatened.
EPBC Act: CE = Critically Endangered; V = Vulnerable
^ WO = Wildlife Online; PMST = Protected Matters Search Tool

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APPENDIX

E

PREVIOUS ECOLOGICAL
ASSESSMENT REPORTS



now



Ecological Assessment Report

Yamanto Combined Racing Facility,
40-76 Ipswich Boonah Road, Purga

5013_26



Prepared for
Racing Queensland

17 April 2019

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Executive Summary

Cardno Pty Ltd was commissioned by Queensland Racing to conduct an Ecological Assessment for the proposed Yamanto Combined Racing Facility, located at 40-76 Ipswich Boonah Road, Purga. The project includes the development of a combined harness and greyhound racing facility (the Project). The Project will be located within two adjoining properties, including Lots 1 and 2 on SP193446 (collectively referred to as the Site).

Both properties were surveyed by two suitability qualified Cardno ecologists on April 1 2019. The key findings of the desktop and field assessment are as follows:

- > One threatened fauna species, the Koala (*Phascolarctos cinereus*) was opportunistically identified within Lot 1 on SP193446. This species is listed as a Vulnerable under both the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Nature Conservation Act 1992* (NC Act). A self-assessment that examines the potential for the proposed works to have a significant impact on Matters of National Environment Significance (MNES) will be required for the Koala. This self-assessment should be completed against the *Matters of National Environmental Significance Significant Impact Guidelines 1.1*. Clearing works within the Site must be undertaken in accordance with the requirements of the *Nature Conservation (Koala) Conservation Plan 2017*.
- > In accordance with the *Koala Conservation in South East Queensland State Planning Regulatory Provisions* the site is mapped within a Koala Assessable Development Area. Further, the site is mapped as containing Medium Value Bushland Habitat, Low Value Rehabilitation habitat and land Generally not suitable for Koalas. Under the *Planning Regulation 2017*, the development must not involve clearing of non-juvenile koala habitat trees within bushland habitat areas. Therefore, the proposed infrastructure must be limited to areas located outside the mapped bushland habitat areas within the site; this can be achieved by adjusting the development footprint to be located further to the north.
- > Consistent with the Site's designation as a 'High Risk' area by the Protected Plants Flora Survey Trigger Map, one threatened flora species, Swamp tea-tree (*Melaleuca irbyana*), listed as Vulnerable under the provisions of the NC Act, was detected within Lot 1. As such, completion of a dedicated protected plants flora survey within the clearing impact area in accordance with the Department of Environment and Science's (DES's) *Flora Survey Guidelines – Protected Plants* is required. The clearing impact area is defined as the disturbance area and 100m buffer. If a protected plant is observed within the clearing impact area, a Clearing permit, supported by an Impact Management Plan, must be obtained prior to clearing works.
- > Consistent with the Regulated Vegetation Management Map prepared by the Department of Natural Resources, Mines and Energy (DNRME) and pursuant to the *Vegetation Management Act 1999* (VM Act) the western side of the property has been cleared and contains non-remnant, Category X vegetation. The eastern and southern portions of the Site contain extensive Category B (remnant) and Category C (high-value regrowth) vegetation, respectively. It is understood that the Category B (remnant) will be retained as part of the proposal and that a portion of Category C (high-value regrowth) may be impacted by the works. Clearing of Category B and C areas are not considered exempt clearing work and will require a development application for clearing native vegetation.
- > The eastern extent of the Site contains stream Order 1 Watercourses, as shown on the Regulated Vegetation Map. The watercourse within the site has been modified into the two existing dams, and an additional dam is located adjoining the southern boundary of the site. It is understood that the small dam may be filled as part of the proposed works. Dewatering of the dam will require a Low-risk Species Management Plan and the presence of a fauna spotter catcher. The extent of the on-ground watercourses have been mapped as part of this assessment.
- > The site contains a number of weed species declared under the *Biosecurity Act 2014*.
- > The Site supports a number of potential animal breeding places including hollow-bearing trees and stags. Animal breeding places must be managed in accordance with a Species Management Program (SMP) – Low Risk of Impacts.
- > Vegetation within the Site provides connectivity throughout the broader landscape and habitat for a range of fauna species, therefore it is recommended that the design is consolidated within the previously cleared areas of the site within the western portion of the Site.

- > The Ipswich Planning Scheme has not integrated the requirements of the *State Planning Policy 2017* (SPP) and therefore assessment against Part E: State Interest Policies and assessment benchmarks of the SPP will be required as part of the development application specifically for Biodiversity and Natural Hazards Risk and Resilience State Interests.

1 Introduction

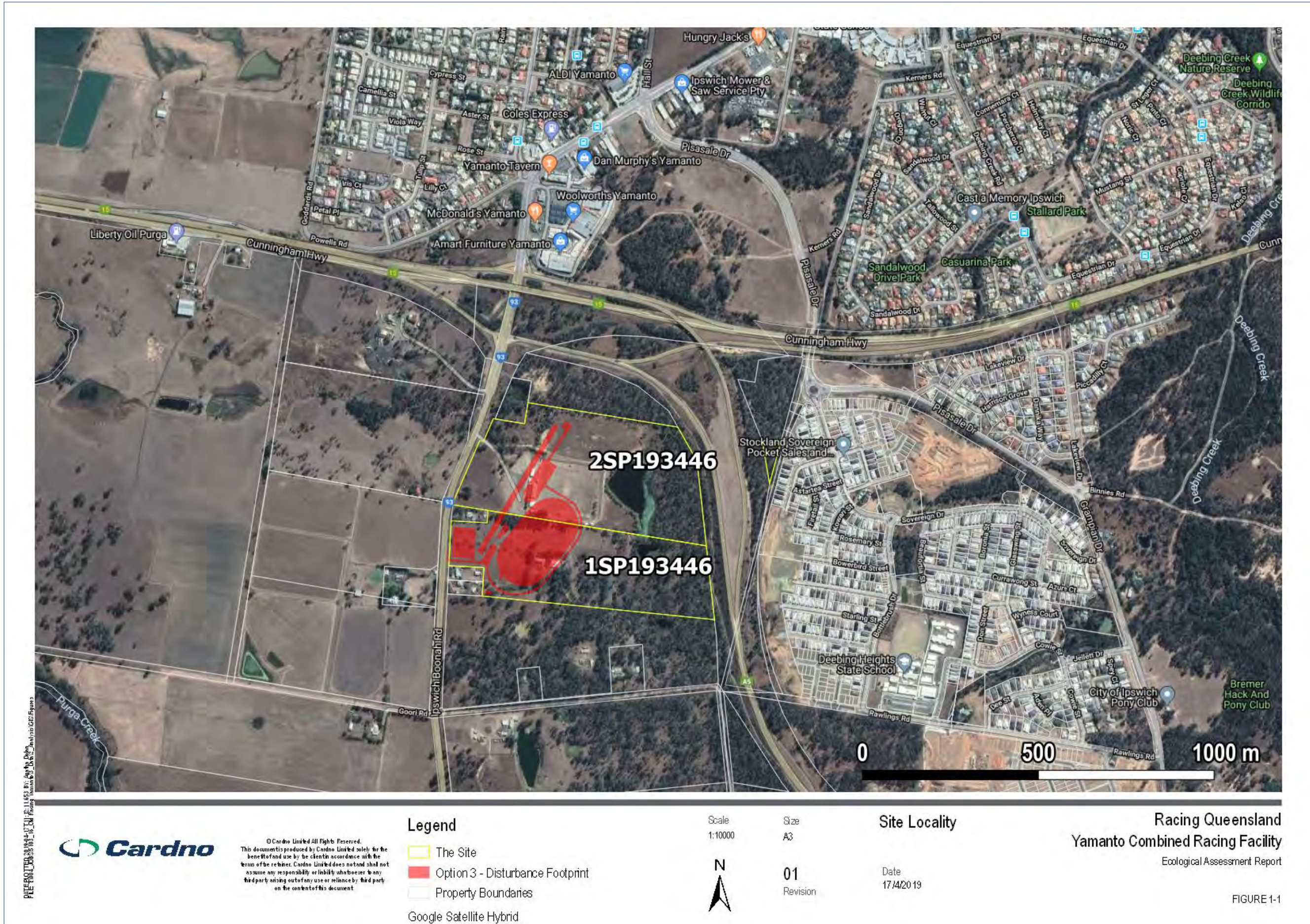
Cardno Pty Ltd was commissioned by Racing Queensland to conduct an Ecological Assessment for the proposed Yamanto Combined Racing Facility, located at 40-76 Ipswich Boonah Road, Purga. The project includes the development of a combined harness and greyhound racing facility (the Project). According to the Development Masterplan – Option 3c, the Project will be located within two adjoining properties, including Lots 1 and 2 on SP193446 (Lots 1 and 2) - collectively referred to as 'the Site'. The Development Masterplan has been provided as **Appendix A**. The location of the Site, including the surrounding locality, is indicated in **Figure 1-1**.

This Ecological Assessment Report (EAR) is intended to provide Racing Queensland with information that will inform the development footprint, design and layout of the Project. As such, the Ecological Assessment was conducted with particular attention to the Regulated Vegetation communities and the Koala Conservation in South East Queensland State Planning Regulatory Provisions (SPRP) medium-value bushland habitat along the Site's eastern boundary.

This EAR provides the following information as follows:

- > Section 2 – a description of the Site locality;
- > Section 3 – the methodology employed for the ecological assessment;
- > Section 4- the results of the ecological assessment;
- > Section 5 – a discussion regarding the known and likely ecological and legislative constraints associated with the proposed works; and
- > Section 6 – the recommendations and conclusions arising from the completion of the ecological assessment.

Figure 1-1 Site Locality.



2 Site Description

The Site is located along Ipswich Boonah Road, Purga within the Ipswich City Council Local Government Area (LGA). The Yamanto township is approximately 1km north of the Site and includes low density residential and commercial land-uses. The site is comprised of two adjacent Freehold lots, with Lot 2 on SP193446 located directly north of Lot 1. Lot 2 on SP193446 comprises two parts, separated from each other by the Centenary Highway (**Figure 1-1**). The lot sizes are 16 and 20 hectares (ha), respectively.

The Site is bound by:

- > Freehold rural property to the north;
- > Centenary Highway to the immediate east;
- > Ipswich-Boonah Road to the west; and
- > existing rural properties to the south.

The land within the surrounding locality is predominantly used for residential and agricultural purposes. The broader landscape, particularly to the Site's southeast, supports extensive remnant vegetation and undisturbed habitat.

The Site has been subject to previous disturbance consistent with the current land-uses of Lots 1 and 2 as a residential property and sporting facility, respectively. The western extent of both Lots 1 and 2 have been heavily disturbed, and the centre of the Lot 2 contains a recreational sporting facility consisting of a regularly mowed grass field, related ancillary structures, surrounding fencing and associated viewing facilities. Lot 1 contains a residential property within the central portion of the property.

The eastern extent of Lot 2 supports a large waterbody (approximately 1.5 ha) adjacent to a substantial patch (approximately 3.4ha) of Category B (remnant) and C (high-value regrowth) Regulated Vegetation under the *Vegetation Management Act 1999* (VM Act). The eastern end of Lot 1 also contains a waterbody, although it is considerably smaller (approximately 0.2ha) than that within Lot 2. Lot 1 also contains two smaller waterbodies (both <1 ha); one is along the eastern end of the site near the highway and the other is inside the south-western corner. The waterbody in the south-western corner of the Site may be filled depending on the final development layout. Both the eastern and southern portions of Lot 1 contain considerable amounts of Category C and B vegetation (approximately 5.3ha), although the majority of the Site is dominated by exotic grassland.

3 Methodology

3.1 Desktop Assessment

The desktop assessment included review of publically available mapping and database records including:

- > Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (PMST) (owing to the broad scale of this search tool only species and communities identified by the PMST as having habitat which is 'known' or 'likely' to occur in the area have been considered in the desktop assessment);
- > the Regulated Vegetation Management Map prepared by the Department of Natural Resources, Mines and Energy (DNRME) pursuant to the *Vegetation Management Act 1999*;
- > the Protected Plants Flora Survey Trigger Map administered by DES;
- > Atlas of Living Australia database and mapping;
- > Australian Virtual Herbarium;
- > the DES Wildlife online databases;
- > the Ipswich City Council Planning Scheme; and
- > Historical and contemporary aerial imagery.

All mapping searches were centred on -27.6697, 152.7407 with a 5 km buffer, or using Lot 1 on SP193446. The mapping and database outputs resulting from the desktop assessments have been provided in **Appendix B**.

The process of refining the list of flora and fauna species to be targeted during field surveys involved review of the known and specific habitat requirements for each species against the known or expected availability of such resources within the Site and immediate surrounds. For each of the identified species, a Likelihood of Occurrence Assessment was undertaken with each species being assigned to one of the following categories.

- > **Known:** The species has been positively recorded within the site by a qualified ecologist during past 30 years.
- > **Likely:** Suitable habitat for the species occurs on site and proximate records exist.
- > **Possible:** Suitable habitat for the species occurs on the Site but no recent records from the site or proximate areas exist OR suitable habitat for the species may not occur on the site but recent records from proximate areas exist.
- > **Unlikely:** Suitable habitat for the species does not occur on the site, and no recent records from the site or proximate areas exist.

3.2 Field Survey

A field assessment was completed on 1 April 2019 by two Cardno Ecologists. Field surveys were completed in accordance with Cardno's permits:

- > Scientific Purposes Permit WA0004213; and
- > Animal Ethics Approval SA 2018-09-656.

3.2.1 Vegetation Communities and Regional Ecosystems

The Department of Natural Resources, Mines and Energy's (DNRME's) Vegetation Management Report and Vegetation Management Supporting Map was ground-truthed generally in accordance with the Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities (Nelder *et al.* 2017) using quaternary level site assessments. The dominant species in each strata, strata height and approximate cover were collected at seven quaternary plots.

The Quaternary Plots (QPs) surveyed are shown in **Figure 3-1**.

3.2.1.1 Flora Species

Targeted searches for potentially occurring threatened flora species (identified during the desktop assessment) were undertaken in areas where suitable habitat was identified. All flora species observed within the survey area, including restricted weed species listed under the *Biosecurity Act 2014*, were recorded incidentally.

3.2.2 Fauna and Habitat Assessment

During the field assessment, incidental fauna searches were conducted and all fauna species observed were recorded.

3.2.2.1 Non-juvenile Koala Food Tree Density

Density of non-juvenile Koala habitat trees was measured using the Variable Area Transect (VAT) methodology described by Parker (1979)¹. During VAT surveys, a point along a transect line was chosen at random and the distance from that point to the third Koala habitat food tree within 10 m either side of the transect line was measured. Two VAT surveys were completed within each vegetation community as identified by the Regional Ecosystems and Regrowth vegetation represented within DNRME's Vegetation Management Supporting Map. Following completion of QP surveys, the relative density of non-juvenile Koala habitat trees for each VAT was calculated using the below formula:

$$D = \frac{3n-1}{w \sum (l_i)}$$

D= Estimate of population density for the VAT method;

n= number of random points;

w=Width of transect searched (fixed); and

l_i= Length of transect / searched until the third non-juvenile Koala Food tree was found

3.2.2.2 Identification of Animal Breeding Places

For the purpose of this assessment, an animal breeding place is any place (e.g. a bower, burrow, cave, hollow, nest or other thing) that is commonly used by the animal to incubate or rear the animal's offspring'. As per Section 332 of the *Nature Conservation (Wildlife Management) Regulation 2006*, an animal breeding includes any place where:

- > the animal is preparing, or has prepared, the place for incubating or rearing the animal's offspring; or
- > the animal is breeding, or is about to breed, and is physically occupying the place; or
- > the animal and the animal's offspring are physically occupying the place, even if the occupation is only periodical; or
- > the animal has used the place to incubate or rear the animal's offspring and is of a species generally known to return to the same place to incubate or rear offspring in each breeding season for the animal.

3.2.3 Survey Limitations

The surveys were primarily directed towards ground-truthing vegetation communities, identifying threatened flora/fauna species, animal breeding places, and supporting habitat for flora and fauna. Opportunistic observations of flora and fauna within the Site may be limited by a number of factors including:

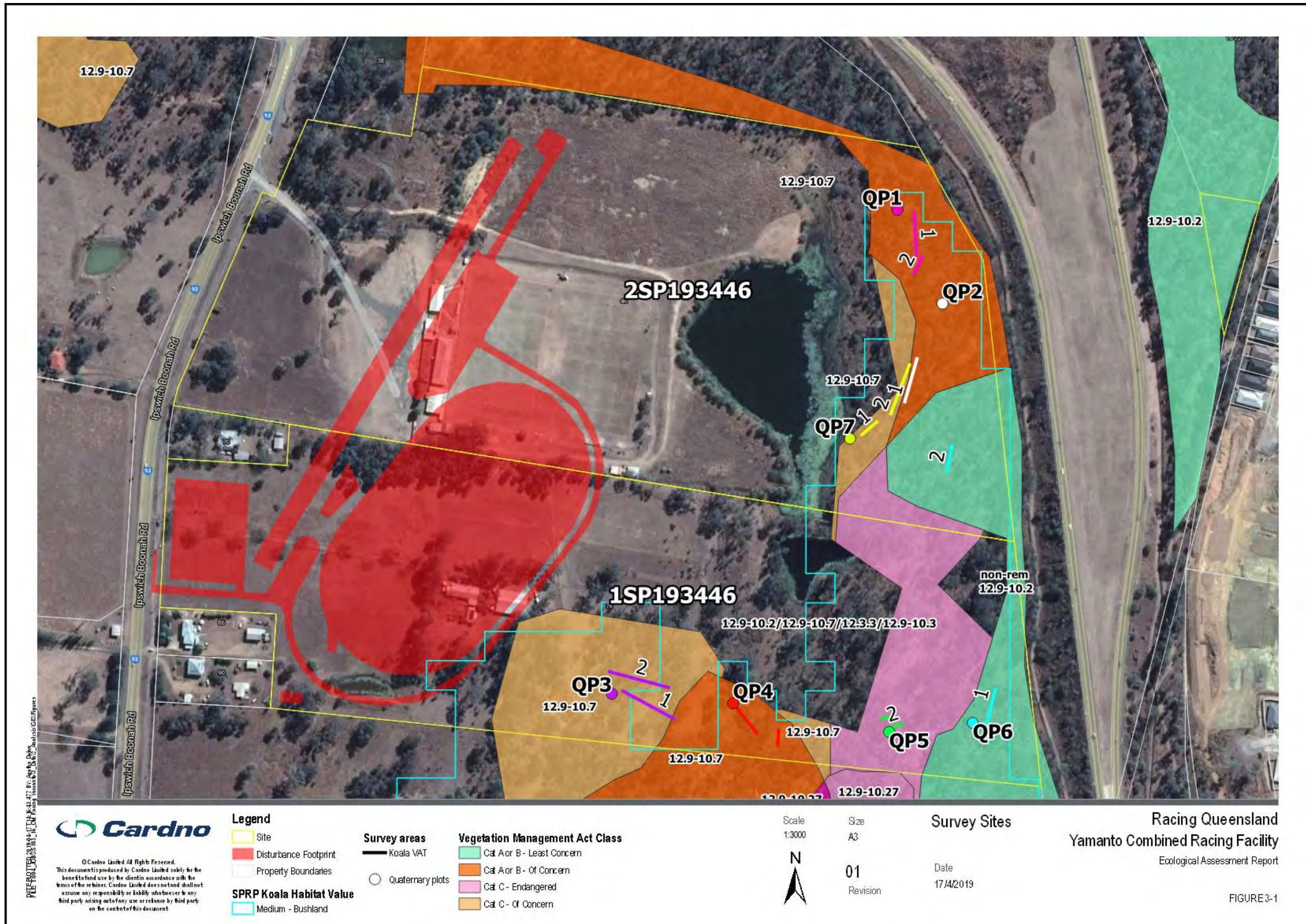
- > Surveys were limited to Lots 1 and 2 on SP193446;

¹ Parker, K. R. (1979). Density estimation by variable area transect. *The Journal of Wildlife Management*, 484-492.

- > Surveys were undertaken over a single day in autumn, with the terrestrial fauna survey component limited to opportunistic survey and targeted searches in areas of suitable habitat;
- > No targeted terrestrial fauna trapping was completed; and
- > The survey period is outside of the optimal timing for the detectability of several flowering species.

Notwithstanding this, the survey methods and effort used are considered adequate for the detection of species identified during the desktop assessment as being either known or likely to occur within the locality. Conduct of surveys on foot across the entire Site ensures adequate coverage and fine-scale mapping of ecological constraints.

Figure 3-1 Survey areas.



4 Results

4.1 Flora

4.1.1 Threatened Ecological Communities

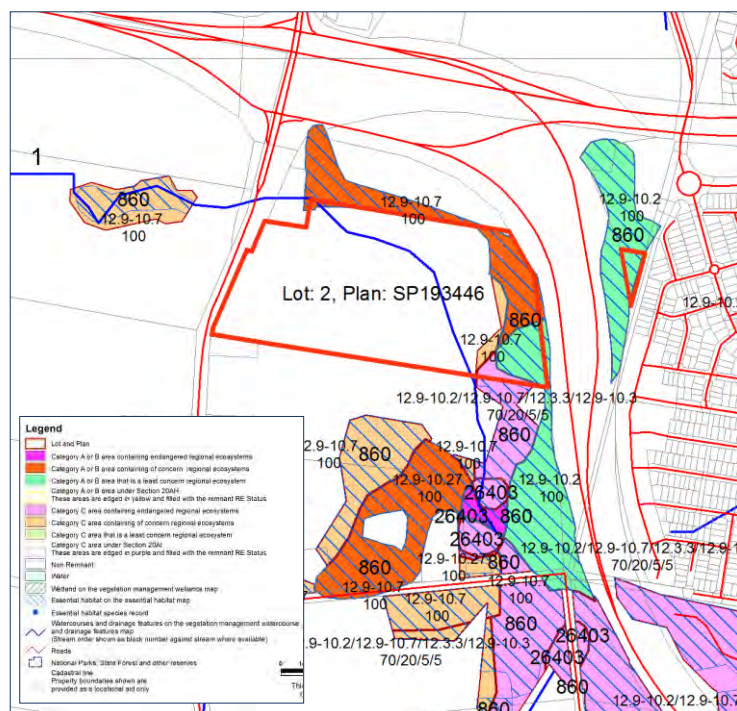
Swamp Tea-tree Forest of Southeast Queensland is a Threatened Ecological Community (TEC) known to occur in the vicinity of the Site. Although Swamp tea-tree was identified on Site, the size of the patch (0.02 ha) was considerably less than the 0.25 ha of vegetation required to constitute a community². No other TECs were identified within the Site.

4.1.2 Regulated Vegetation and Regional Ecosystems

Review of the Regulated Vegetation Management Map and Vegetation Management Supporting Map, produced by DNRME, indicates that the Site largely supports Category X vegetation; however, considerable amounts of Category B (remnant) and Category C (high-value regrowth) vegetation are also present. The Category B area also is mapped as containing Essential Habitat for Koala (*Phascolarctos cinereus*). An Order 1 Watercourse runs through the centre of both Lots 1 and 2.

An extract of the Regulated Vegetation Management map has been provided in **Figure 4-1**.

Figure 4-1 Extract from the Regulated Vegetation Management Map for the Site.



A review of the Remnant Regional Ecosystems map indicates that four Regional Ecosystems (REs) presently occur within the Site. These include RE 12.9-10.7, 12.9-10.27, 12.9-10.2, and a mixed regional ecosystem consisting of REs 12.9-10.2/ 12.9-10.7/12.3.3/12.9-10.3. A short description of each RE according to the Regional Ecosystem Description Database (DES, 2018)³, is provided in **Table 4-1** below.

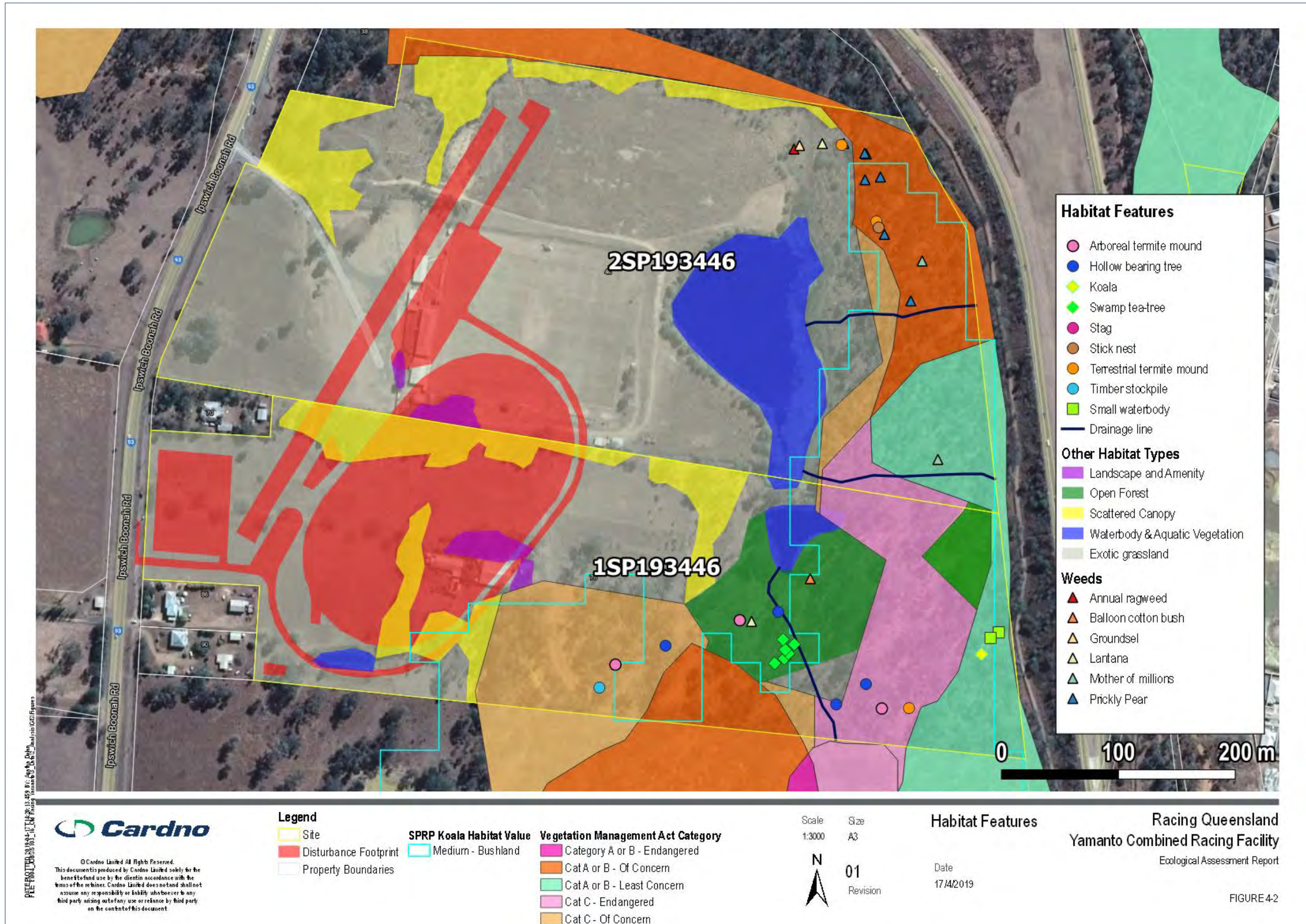
² Logan City Council (n.d.). Guideline for Managing Development Impacts on *Melaleuca irbyana*.

³ Queensland Herbarium (2018) Regional Ecosystem Description Database (REDD). Version 11 (December 2018) (DES: Brisbane).

Table 4-1 Regional ecosystems that currently occur on Site as described in Regional Ecosystem Description Database, 2018.

RE Code	Status	Description
12.9-10.7	Of Concern	<i>Eucalyptus crebra</i> +/- <i>E. tereticornis</i> , <i>Corymbia tessellaris</i> , <i>Angophora leiocarpa</i> , <i>E. melanophloia</i> woodland. Occurs on Cainozoic and Mesozoic sediments.
12.9-10.27	Endangered	<i>Corymbia citriodora</i> subsp. <i>variegata</i> and/or <i>E. moluccana</i> , <i>E. tereticornis</i> , <i>E. crebra</i> open forest with <i>Melaleuca irbyana</i> understorey on sedimentary rocks
12.9-10.2	Least Concern	<i>Corymbia citriodora</i> subsp. <i>variegata</i> +/- <i>Eucalyptus crebra</i> open forest on sedimentary rocks
12.3.3	Endangered	<i>Eucalyptus tereticornis</i> woodland on Quaternary alluvium
12.9-10.3	Of Concern	<i>Eucalyptus moluccana</i> open forest on sedimentary rocks

Figure 4-2 Vegetation communities and habitat features present within the Site extent.



4.1.3 Vegetation Communities

Vegetation communities present within the Site were generally characterised by four communities including open forest, scattered canopy with landscape plantings, aquatic vegetation, and disturbed grassland.

4.1.3.1 Vegetation Community – Open Forest

The field survey generally confirmed the findings of the desktop assessment with regard to vegetation communities present including ground-truthing of mapped Regional Ecosystems. The site supports four REs, including RE 12.9-10.7, RE 12.9-10.27, RE 12.9-10.2/12.9-10.7/12.3.3/12.9-10.3, and RE 12.9-10.2.

Dominant canopy species throughout the eastern extent of the site included those consistent with RE 12.9-10.7 such as *Eucalyptus tereticornis*, *E. crebra*, *Corymbia citriodora* and *E. moluccana*. The sub canopy largely included sub-mature specimens of the same species, as well as *Acacia leiocalyx* and *C. tessellaris*. Additional areas containing native regrowth vegetation were present in numerous areas throughout the Site, although these tended to be continuations of existing mapped Category C vegetation within both Lots 1 and 2. Additional areas containing remnant vegetation were also present among the Category B within the site, as shown in **Figure 4-2**.

The upper shrub layer was dominated by a number of weedy species, including *Lantana camara*, and *Opuntia stricta*. Species within the lower shrub and groundcover layers consisted predominantly of introduced grasses, such as *Bryophyllum delagoense*, *Chloris gayana* and *Megathyrsus maximus*, although native species such as *Chrysocephalum apiculatum* and *Dianella caerulea* were present in considerable densities. Data collected from quaternary plots is provided as **Appendix C**.

The presence of an Order 1 stream was not confirmed to the extent that it is shown in the Vegetation Management Supporting Map (Shown in **Figure 4-1**); however, several waterbodies and associated overland flow paths associated with Regulated Vegetation were observed within the site as shown in **Figure 4-2**.

4.1.3.1.1 RE 12.9-10.7

RE 12.9-10.7 is widespread throughout the site and is present in both remnant and regrowth forms. This RE was surveyed within QPs 1, 2, 3, and 7.

Dominant species within QPs 1 and 2 included remnant *E. crebra*, *E. tereticornis*, and *C. citriodora*. The sub canopy included juveniles of the same species. The upper shrub layer included a number of introduced species, including *L. camara*, and *O. stricta*, and well as the native *A. leiocalyx*. The lower shrub and ground cover layers included *Lomandra longifolia* and *Urochloa decumbens*. Vegetation types were largely the same between QPs 1 and 2, which both contained Category B remnant vegetation.

QP 3, mapped as Category C (high-value regrowth) vegetation, contained similar canopy species to those within QPs 1 and 2 with a sparser understory and ground layer consisting of slashed grass and amenity plantings. The majority of canopy trees within this area were approximately 20 m in height. Several canopy trees supported hollows.

QP 7, also mapped as Category C vegetation, contained similar vegetation to that of QP 3, although *E. tessellaris* was also present. Vegetation within this QP contained consisted of regrowth, and did not contain many notable habitat features.

4.1.3.1.2 RE 12.9-10.27

RE 12.9-10.27 is mapped directly adjacent to the Site according to the RE Vegetation Management supporting map. It was noted that the community surrounding the southern end of the waterbody in Lot 1 indicated characteristics of this RE. This community was surveyed within QP 4. Dominant vegetation within this vegetation type consisted of *C. citriodora* and *E. crebra*. A small section of *M. irbyana* understorey was also present. The sub canopy and shrub layers include some introduced species such as, *L. camara*, *O. stricta*, and *Tipuana tipu*.

4.1.3.1.3 RE 12.9-10.2/12.9-10.7/12.3.3/12.9-10.3

RE 12.9-10.2/12.9-10.7/12.3.3/12.9-10.3 was surveyed within QP 5. This RE contained variable habitat throughout, consistent with its mapping as a mixture of four REs. Dominant vegetation within this vegetation type included mature *C. citriodora*, *E. crebra*, and *E. tereticornis*. The sub-canopy consisted largely of *A. leiocalyx* and sub-mature *C. citriodora*. The most dominant RE within this vegetation type was 12.9-10.2, consistent with the RE ratio of 70/20/5/5. This vegetation type supports numerous hollow bearing trees.

4.1.3.1.4 RE 12.9-10.2

RE 12.9-10.2 was surveyed within QP 6. The dominant canopy species in this vegetation type included remnant *E. crebra*, *E. tereticornis*, *C. citriodora*, and *E. moluccana*. Canopy height was approximately 25 m on average. The vegetation within the mapped boundaries of this RE was consistent with the description of RE 12.9-10.2. This habitat type was observed to support Koala.

4.1.3.2 Vegetation Community – Scattered Canopy with Landscape and Amenity Plantings

Landscape and amenity plantings were sparsely scattered around the residential property in Lot 1, the entry road within Lot 2, and outside of structures in Lot 2 (**Figure 4-5**). Species present within this vegetation community consisted of a variety of native and introduced species. Native species within this community include *E. tereticornis*, *E. crebra*, and *C. citriodora*. Introduced species include *Agave americana*, *Tipuana tipu*, and *Ficus elastica*.

Figure 4-3 Example of an amenity planting within the Site.



4.1.3.3 Vegetation Community – Aquatic Vegetation

Both waterbodies present within the eastern end of Lots 1 and 2 support considerable aquatic vegetation and provide habitat for a variety of waterfowl and amphibians (**Figure 4-6**). The watercourse in Lot 2 appears to be constructed, and has been susceptible to encroachment by numerous aquatic and riparian weeds. Predominant species along the lower bank include smart weed (*Persicaria attenuata*) and Mexican water lily (*Nymphaea mexicana*), although multiple native species, such as Water snowflake (*Nymphoides indica*), are also present.

The canopy along the upper-bank supports a mixture of native and exotic species, including: *Tipuana tipu*, juvenile *E. tereticornis*, and juvenile *Acacia leiocalyx*. *Lantana camara* is prevalent throughout the vegetation along the entire bank.

Figure 4-4 Waterbody and associated aquatic vegetation within the Site.



4.1.3.4 Vegetation Community – Disturbed Grassland

The western and central portions of both Lots 1 and 2 support considerable areas of disturbed grassland that is dominated by a mixture of regularly maintained and unmanaged exotic grasses (**Figure 4-7**). Exotic grasses present within this vegetation community consisted of: Guinea grass (*Megathyrsus maximus*), Rhodes grass (*Chloris gayana*), Pampas grass (*Cortaderia selloana*), Whiskey grass (*Andropogon virginicus*), African lovegrass (*Eragrostis curvula*) and South-African pigeon grass (*Setaria sphacelata*). These areas are considered to be of low habitat value to fauna within the site.

Figure 4-5 Disturbed grassland within the Site.



4.1.4 Flora Species

4.1.4.1 Protected Plants

A review of the databases identified in **Section 3.1** returned records for a number of threatened flora species that may occur within 2km of the Site. The desktop assessment completed in accordance with the methodology outlined in **Section 3.1** determined that one threatened flora species, *Swamp tea-tree*, listed as Vulnerable pursuant to the NC Act may possibly occur within the Site or immediately adjoining land. During the field survey, six specimens of *M. irbyana*, shown in **Figure 4-8**, were detected proximate to the disturbance footprint (approximately 230m east). The exact locations of the specimens are shown in **Figure 4-2**.

Table 4-2 summarises the species that are likely, potential or are known to occur on site as determined by the desktop and field assessments. All documents reviewed as part of the desktop assessment have been provided as **Appendix B**. The complete results of the Likelihood of Occurrence Assessment are provided as **Appendix D**. A full list of species encountered during the field survey has been provided in **Appendix E**.

Table 4-2 Threatened flora that may possible occur or are considered likely to occur within the Site and immediate surrounds.

Scientific Name	Common Name	Status#		Likelihood of Occurrence
		NC Act	EPBC Act	
<i>Melaleuca irbyana</i>	Swamp tea-tree	V	-	Possible – confirmed during Field Survey

NC Act – E = Endangered, NT = Near Threatened. EPBC Act E = Endangered.

Figure 4-6 *Melaleuca irbyana* observed during the field assessment.



4.1.4.2 Introduced Species

Restricted invasive plants are widespread throughout the Site and occur in varying densities depending on the habitat present. All of the vegetation communities encountered onsite support a number of restricted invasive plants listed under the *Biosecurity Act 2014*. The most prevalent and widespread Category 3 Restricted Invasive plant within the Site was *L. camara*, which was recorded in large thickets throughout both lots (**Figure 4-2**). Other Restricted Invasive plants, such as Creeping lantana (*L. montevidensis*), Prickly pear (*O. stricta*), Mother of millions (*Bryophyllum delagoense*), and Groundsel (*Baccharis halimifolia*) were also found within the site extent, albeit in lower densities. A full list of invasive species found during field surveys may be found in **Appendix E**.

4.1.5 Fauna and Habitat Assessment

4.1.5.1 Threatened Fauna

A full summary of the detailed desktop assessment completed in accordance with the methodology outlined in **Section 3.1** is provided in **Table 4-3**. The results of this desktop assessment determined that two species of threatened fauna are considered likely to occur within Site, including the Koala and the Grey-headed flying fox (*Pteropus poliocephalus*). Use of the Site by Koala was confirmed during the field assessment as a result of a direct observation (**Figure 4-9**). The location of this observation is shown in **Figure 4-2**.

There is one active Flying fox camp approximately 2km from the Site. This camp contains recent records of both Grey-headed and black flying foxes (*Pteropus alecto*). While there were no camps observed within the Site, it is likely that Grey-headed flying fox utilize the site for foraging purposes. There were no evident signs of habitat usage by other threatened fauna within the Site extent; however, this may have been the result of limitations associated with the survey (e.g; a nocturnal survey was not completed).

A complete list of the fauna observed on Site is provided as **Appendix E**.

Figure 4-7 Koala observed within the Site.



Table 4-3 Threatened fauna that may occur within the Site and immediate surrounds.

Scientific Name	Common Name	Status#		Likelihood of Occurrence
		NC Act	EPBC Act	
Mammals				
<i>Phascolarctos cinereus</i>	Koala	V	V	Likely
<i>Pteropus poliocephalus</i>	Grey-headed flying fox	-	V	Likely
Aves				
<i>Rhipidura rufifrons</i>	Rufous fantail	SL	Ma, Mi	Possible

NC Act – V = Vulnerable. EPBC Act E = Endangered, V = Vulnerable, MaMi = Marine Migratory

4.1.5.2 Habitat Assessment

The value of the habitat present within the Site is considered to be of high value for a number of fauna. Suitability of the site for use by Koala was confirmed through a direct observation of a Koala feeding on-site. Given that the Site supports substantial mature Koala fodder trees, and it is highly likely that multiple Koala regularly use the area for feeding and transit.

Eastern grey kangaroos (*Macropus giganteus*, and multiple macropod scats were also observed within the site suggesting that multiple species of macropods may use the Site.

It is likely that the Site support other native mammalian fauna, such as the Common brush-tailed possum (*Trichosurus vulpecula*). Due to the high habitat value and large areas of disturbance, presence of introduced species, such as Black rat (*Rattus lutreolus*) and House mouse (*Mus musculus*) is also likely.

Most of the vegetation within the Site would provide reasonable foraging and nesting resources for a variety of avian species. A number of large waterbirds were also observed to use the various waterbodies within both Lots, such as: Wandering whistling duck (*Dendrocygna arcuata*), Pacific black duck (*Anas superciliosa*), Eurasian coot (*Fulica atra*), and Purple swamp hen (*Porphyrio porphyrio*).

No aquatic fauna was present within the dam located in Lot 1, however the watercourse in Lot 2 supports some aquatic fauna, such as the Great brown broodfrog (*Pseudophryne major*) and the Eastern snake-necked turtle (*Chelodina longicollis*). Management of aquatic fauna within the small waterbodies within Lot 1, though unlikely, should be managed in accordance with a Species Management Plan if encountered.

A full list of the fauna encountered during the field surveys has been provided as **Appendix E**.

4.1.5.3 Non-juvenile Koala Food Tree Density

Presence of non-juvenile Koala food trees within the Site was confirmed through identification throughout the mapped Regulated vegetation and Bushland Habitat Areas for Koala in the eastern and southern extents of the Site. The density of non-juvenile Koala Food Trees was highest near QPs 4, 5 and 6 within the south-eastern corner of Lot 1. The density of non-juvenile Koala Food trees was lowest near QP 3, near the dwelling in the centre of Lot 1. Locations of VATs are shown in **Figure 4-2**.

Table 4-4 Non-juvenile Koala Food Tree density within the Site.

Quaternary Plot	Relative Density	Dominant Species
1	0.005 per m ²	<i>E. crebra</i> , <i>E. tereticornis</i> , <i>C. citriodora</i>
2	0.005 per m ²	<i>E. crebra</i> , <i>E. tereticornis</i> , <i>C. citriodora</i>
3	0.003 per m ²	<i>E. crebra</i> , <i>C. citriodora</i> , <i>E. tereticornis</i>
4	0.013 per m ²	<i>C. citriodora</i> , <i>E. crebra</i>
5	0.013 per m ²	<i>C. citriodora</i> , <i>E. crebra</i> , <i>E. tereticornis</i>
6	0.01 per m ²	<i>E. crebra</i> , <i>E. tereticornis</i> , <i>C. citriodora</i> , <i>E. moluccana</i>
7	0.004 per m ²	<i>E. crebra</i> , <i>C. tessellaris</i> , <i>E. tereticornis</i>

4.1.5.4 Identification of Animal Breeding Places

Several possible breeding features were encountered within the Site at the time of the field survey, including a number of hollow-bearing trees and stags. It is also likely that additional hollows and nests are located in the trees that were not detectable during the field survey. A substantial number of hollow nesting avian species were incidentally observed throughout the field survey, including the Laughing kookaburra (*Dacelo novaeguineae*), Eastern rosella (*Platycercus eximius*), Pale-headed rosella (*Platycercus adscitus*), Rainbow lorikeet (*Trichoglossus moluccanus*), and Galah (*Eolophus roseicapilla*).

5 Legislative Constraints

5.1 Commonwealth Legislation

5.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legislative framework to protect and manage nationally and internationally significant flora, fauna, ecological communities and heritage places. The EPBC Act defines these as Matters of National Environmental Significance (MNES).

The EPBC Act Policy Statement 1.1, the 'Significant Impact Guidelines' further lists a set of 'significant impact criteria' for each of the nine listed MNES. The MNES which are applicable to the proposed works include the potential to impact upon:

- > nationally threatened species and ecological communities; and
- > migratory species.

These matters and each species recorded as 'known' or 'likely' to occur on the Site have been assessed against the significant impact guidelines. For fauna and flora species, their likely presence within the Site and any impact resultant of the proposed works has been considered.

One Koala, listed as Vulnerable pursuant to the EPBC Act, was detected proximate to the area wherein the proposed works are to occur. If a proposed project is likely to have a significant or uncertain effect on MNES, it would be necessary to refer to proposal to the Commonwealth Minister for the Environment for a determination as to whether or not formal assessment and approval of the proposal is required. Prior to making such a referral, it is appropriate for the proponent to undertake an EPBC Act Significant Impact Self-Assessment against the *MNES Significant Impact Guidelines*⁴ to determine whether or not such a referral is required. Under certain circumstances, a proponent may wish to consider lodging an EPBC Referral in order to obtain legal certainty that the proposed works cannot be delayed or otherwise affected by factors that could potentially arise if a formal Referral is not lodged and considered by the Minister. Cardno have determined that a significant impact on the abovementioned MNES is uncertain and as such a self-assessment against the Significant Impact Guidelines must occur to determine whether a referral to the Department of Environment and Energy will be required State Legislation

5.2 Queensland Legislation

5.2.1 *Nature Conservation Act 1992*

5.2.1.1 *Flora*

Consistent with the Site's designation as a 'High Risk' area by the Protected Plants Flora Survey Trigger Map, a survey completed in accordance with DES *Flora Survey Guidelines – Protected Plants* (i.e. of the full disturbance area and 100m buffer to same) is required. The identification of *M. irbyana* (or other protected plant) within the clearing impact area will necessitate that a clearing permit, supported by an Impact Management Plan, be required prior to clearing works. It is relevant to note that while the methodology employed for these surveys sought to identify all plants within the disturbance area, a dedicated protected plants flora survey, fully in accordance with the DES *Flora Survey Guidelines – Protected Plants* of the clearing impact area was not completed at the date of this report; however, this will be required prior to commencement of works.

5.2.1.2 *Fauna*

With respect to fauna, the DES Information sheet: *Species Management Program Requirements for tampering with a protected animal breeding place in Queensland* provides additional guidance relating to Species Management Programs (SMP). Specifically, it should be noted that an SMP is required for any proposed activity that will impact on breeding places of protected animals that are classified as extinct in the wild, endangered, vulnerable, near threatened (EVNT), special least concern, colonial breeder or least

⁴ http://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf

concern under the NC Act. An SMP is required if a breeding place that is permanently or intermittently used by any native Least Concern fauna species if being cleared. Because no breeding EVNT fauna were observed within the Site, an application for a Low Risk - SMP must be made in writing to DES following a breeding place survey undertaken by a 'suitably qualified' person.

Management of potential aquatic fauna during dewatering of the dam in the southwestern corner of Lot 1 should occur under the supervision of a spotter catch.

5.2.2 Planning Act 2016

In accordance with the *Koala Conservation in South East Queensland State Planning Regulatory Provisions* the site is mapped within a Koala Assessable Development Area. Further, the site is mapped as Medium Value Bushland Habitat, Low Value Rehabilitation habitat and Generally not suitable for Koalas. Under the South East Queensland Regional Plan, the site is within the Regional landscape and rural production area. In accordance with Ipswich Planning Scheme the Site is predominantly within the Rural Zone with an area within the Special Use Zone.

The *Planning Regulation 2017*, Schedule 11, Part 7 (3), lists assessment benchmarks for development in Koala Assessable Development Areas. The following assessment benchmarks are applicable to the proposed development:

- a) *The development does not involve clearing non-juvenile koala habitat trees in an area that –*
 - i. *is a bushland habitat area; and*
 - ii. *is not in the SEQ urban footprint; and*
 - iii. *is not designated in a local instrument for urban purposes.*

Therefore, the development must not involve clearing within the Bushland habitat areas, this can be achieved by moving the development footprint to the north in order to avoid clearing of Bushland habitat areas.

5.2.3 Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act) provides a framework for the description, identification and mapping of Regulated Vegetation, Regional Ecosystems (REs) and Essential Habitat. It prevents land degradation, maintains biodiversity, preserves ecological processes and promotes Ecologically Sustainable Development (ESD) through the State Assessment and Referral Agency (SARA) Development Assessment process.

The Site contains Category B (remnant), Category C (high-value regrowth) and Category X vegetation. In accordance with the *Planning Regulation 2017* (Planning Regulation) clearing Regulated Vegetation has the following requirements:

- > Category B and C areas are not considered exempt clearing work and will require a development application for clearing native vegetation within the mapped Category B and C areas on the Site; and
- > Category X area is considered exempt clearing work under schedule 21, part 2, s2 (d) of the Planning Regulation.

Under the *Significant Residual Impact Guideline - For matters of state environmental significance and prescribed activities assessable Queensland Environmental Offsets Policy December 2014* (SRI Guideline) Regulated Vegetation excludes regrowth vegetation; as such a Significant Residual Impact (SRI) is not applicable to regrowth vegetation. Notwithstanding, it is recommended that the design retains RE, including the mapped regrowth vegetation within the Site.

Pursuant to the SRI Guideline the proposed development may have a SRI on endangered or of concern RE where:

- a. clearing of more than 5 ha of 'Endangered' or 'Of Concern' RE vegetation;
- b. clearing that results in an overall area (not confined to property boundaries) of 'Endangered' or 'Of Concern' RE vegetation of less than 5ha; OR
- c. clearing that results in the physical separation of 'Endangered' and 'Of Concern' RE communities within and on adjoining sites.

The current Development Layout does not impact any Category B vegetation and it is further recommended that the design avoids clearing Category C regrowth vegetation.

5.2.4 Biosecurity Act 2014

A number of invasive plant species, of which five are Category 3 restricted invasive plants under the *Biosecurity Act 2014*, were detected in the Site. Category 3 restricted matters must not be distributed or disposed of unless the distribution or disposal is performed in the way prescribed under a regulation. Prescribed disposal for Category 3 restricted matter - invasive plants includes:

- > burying the matter in the ground at a depth that ensures any seeds or vegetative material being disposed of cannot grow; or
- > transporting the matter directly to a waste facility if the matter is—
 - in a sealed container or a covered vehicle; or
 - covered in a way that prevents the restricted matter from being lost or released during transport; or

sealing the matter in plastic and leaving the matter in the sun until any vegetative material being disposed has decomposed.

5.2.5 Water Act 2000

The dams and overland flow channels within the site are not mapped as either watercourses or drainage features under the *Water Act 2000*. Further, the *Water Act 2000*, defines a watercourse as, ‘...a river, creek or other stream, including a stream in the form of an anabranch or a tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events—

(a) in a natural channel, whether artificially modified or not; or

(b) in an artificial channel that has changed the course of the stream.’

As the dam located in the southwest corner of Lot 1 does not indicate permanent or intermittent flow, it is not considered a watercourse under the *Water Act 2000* and therefore doesn't not require a Riverine Protection Permit for the filling of this dam.

5.2.6 Fisheries Act 1994

The current development layout may necessitate that the waterbody in the southwest corner of Lot 1 be filled. Development of this waterbody does not constitute assessable Waterway Barrier Works (WWBW) under the *Fisheries Act 1994*. As such, no further action in relation to WWBW is required at this time; however, should this dam be filled, it is recommended that a spotter-catcher be present to relocate any displaced aquatic fauna.

5.3 Local Planning Scheme

5.3.1 Ipswich Planning Scheme

Part 3 of the Ipswich Planning Scheme details the Desired Environmental Outcomes and Performance indicators. The desired environmental outcomes are based on ecological sustainability established by the *Integrated Planning Act 1997* (IPA) and are the basis for the measures of the planning scheme. Desired environmental outcomes for the Ipswich LGA relevant to the Project include:

- (a) The values of significant natural features, including the principal conservation features are not compromised,
- (b) adverse effects on the natural environment are minimised or prevented with respect to the loss of natural vegetation and associated habitat, soil degradation, air pollution and water pollution owing to erosion, chemical contamination, acidification, salinity, sewage and wastewater treatment, management and effluent disposal and the like; and
- (m) rural areas are conserved and protected from incompatible uses such as urban and residential.

Where development has occurred, Performance Indicators (relevant to the Project) under the planning scheme evaluate the whether the development has:

- (a) adversely affected the significant natural features in the LGA;
- (b) resulted in soil degradation, water pollution, air pollution or inappropriate clearing of natural vegetation;
- (l) adversely impacted on access to, and the availability of, public spaced or placed; or

(m) adversely affected the rural areas.

These Performance Indicators are likely to be met if the Project avoids the clearing of Regulated Vegetation and Bushland habitat (as mentioned in Sections 5.2.2 and 5.2.3) and limits the Development layout to previously cleared areas.

5.3.2 State Planning Policy

A single State Planning Policy 2013 (SPP) came into effect in Queensland in December 2013 and was subsequently updated in 2017. The State Planning Policy (SPP) provides local governments with guidance on a variety of State Interests and how they are to be dealt with in local planning schemes. The SPP mapping for the Site indicates that the site is within the following Environmental layers;

5.3.2.1 Biodiversity

- > MSES – Wildlife habitat; and
- > MSES – Regulated vegetation (category B and C);

5.3.2.2 Natural Hazards Risk and Resilience

- > Flood hazard area - Local Government flood mapping area; and
- > Bushfire prone area.

Cardno acknowledges that the SPPs have not been integrated in to the requirements of the Ipswich Planning scheme and therefore assessment against Part E: State Interest Policies and assessment benchmarks of the SPP (2017) will be required as part of the development application.

6 Potential Impacts, Recommendations and Mitigation Measures

This EAR for the proposed development and the immediate surrounds has been carried out for a number of purposes including:

- > Documentation of ecological values that may impact upon the proposed Development layout; and
- > Documentation of ecological values including habitat values for threatened flora and fauna species either known or considered to potentially utilise the Site and immediate surrounds.

Two species of conservation significance, including the Koala and *M. irbyana* were detected within the Site extent. In the absence of suitable controls, the Project has the potential to negatively impact flora and fauna within the site and immediate surrounds; as such, it is recommended that the following impact management and mitigation measures be implemented as part of the Project:

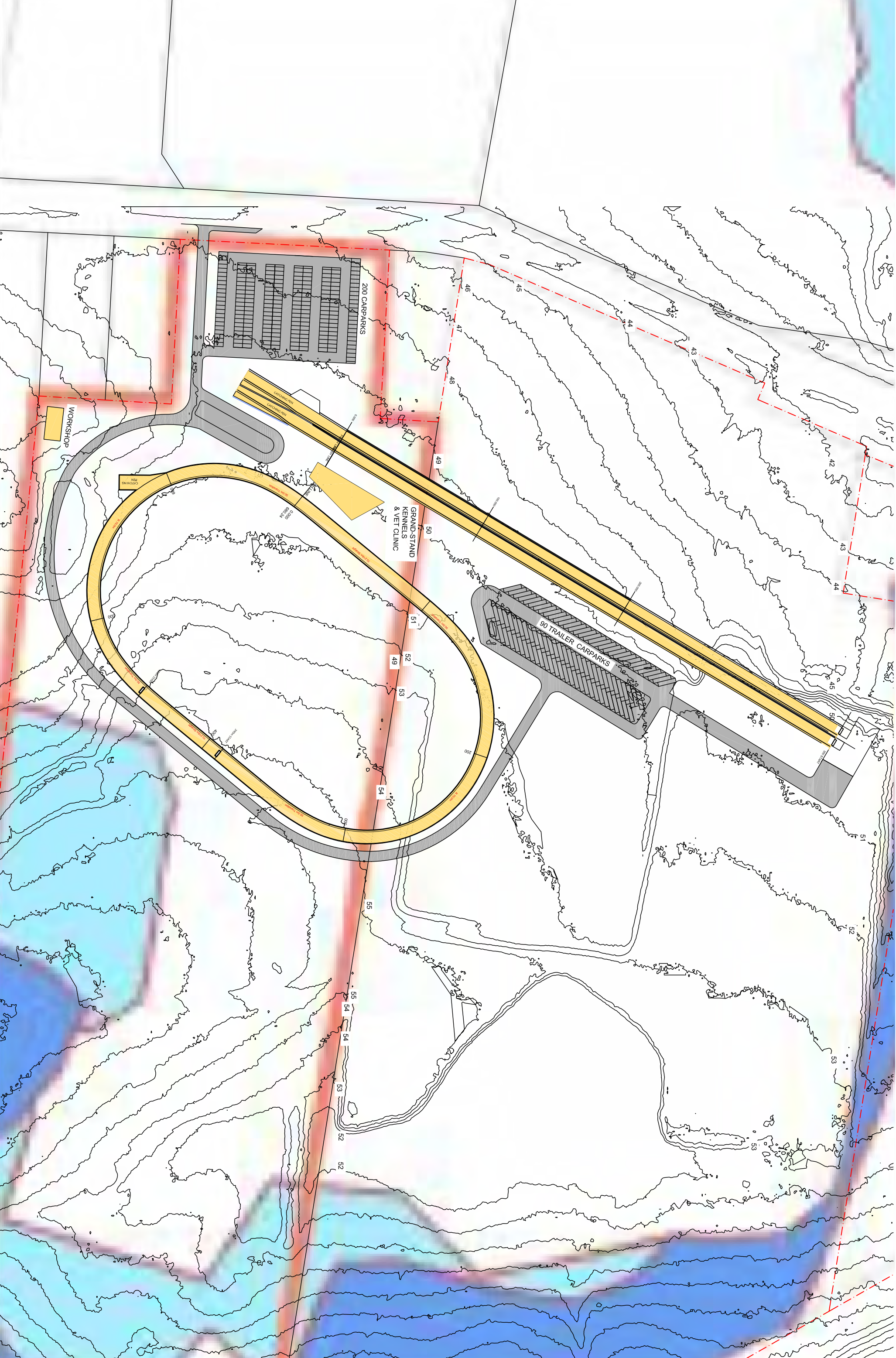
1. The proposed works may have a significant or uncertain impact on matters of MNES and it may be necessary to refer the proposed works to the Commonwealth Minister for the Environment for a determination as to whether or not formal assessment and approval is required under the relevant provisions of the EPBC Act. Prior to making such a referral, proponents should undertake a formal self-assessment that examines the potential for the proposed works to have a significant impact on MNES. This self-assessment must be completed against the *Matters of National Environmental Significance Significant Impact Guidelines 1.1*.
2. The presence of the Site within a High-risk trigger area necessitates the completion of a dedicated protected plants flora survey, fully in accordance with the *DES Flora Survey Guidelines – Protected Plants* (i.e. of the full disturbance area and 100m buffer to same). This must be completed within the 12-month period prior to the commencement of works. If a protected plant species is observed within the clearing impact area, a Clearing permit, supported by an Impact Management Plan, must be obtained prior to any clearing work.
3. The current Development Layout impacts upon an area of SPRP Medium value Koala bushland habitat. The development must be limited to outside of the mapped Bushland habitat areas. This can be achieved by adjusting the proposed layout to the north to remain outside of this mapped area. It should be noted that there is no allowance for clearing within the Bushland habitat area within the Site.
4. Given that Koalas are known to occur within the Site, clearing works must be undertaken in accordance with the requirements of the *Nature Conservation (Koala) Conservation Plan 2006*.
5. Given the high abundance of potential arboreal refuge features throughout the Site and potential dewatering of a small dam, an SMP – Low Risk Impact, will be required. While no evidence of EVNT fauna (with the exception of the Koala) was observed during the field assessment, it should be noted that several species of hollow-nesting avian species were identified during the field assessment. If EVNT species are observed breeding on Site, they must be managed in accordance with an SMP – High Risk Impact if observed within the Site.
6. While the mapped extent of the Order 1 watercourse did not reflect site conditions, the maintenance of a 10m buffer from the defining banks of the large waterbodies within Lots 1 and 2 is recommended in accordance with Accepted Development Vegetation Clearing Codes (ADVCC).
7. It is recommended that a suitably qualified and authorised spotter catcher be utilised during the felling of any canopy trees and to inspect the location for ground-nesting fauna.
8. A suitably qualified fauna spotter catcher must undertake a pre-clearing inspection prior to clearing and supervise all vegetation clearing. Vegetation should be felled away from any vegetation which is to be retained.
9. A suitably qualified fauna spotter catcher should be present to relocate aquatic fauna during the dewatering of any waterbodies within the Site.
10. Works within the vicinity of trees to be retained should be undertaken in accordance with AS 4970 - 2009 Protection of Trees on Development Sites. This can be achieved by the completion of Tree Retention Plan or Vegetation Management Plan which will likely be conditioned as part of a development application to Council.

11. Manage soil erosion and sediment loss during all works as per a specific Construction Environmental Management Plan (CEMP) and Erosion Sediment Control Plan (ESC).
12. All vehicles and plant used during the proposed Action should be inspected for weed seed / soil that may result in the introduction of weeds / plant pathogens and if required should be washed-down prior to leaving the Works areas.
13. Any fill / bedding / topsoil materials used as part of the proposed Action should be certified to be clean (i.e. free from weed seeds, pathogens and other contaminants) prior to use.

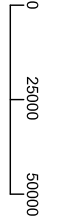
APPENDIX

A

PROPOSED DEVELOPMENT LAYOUT



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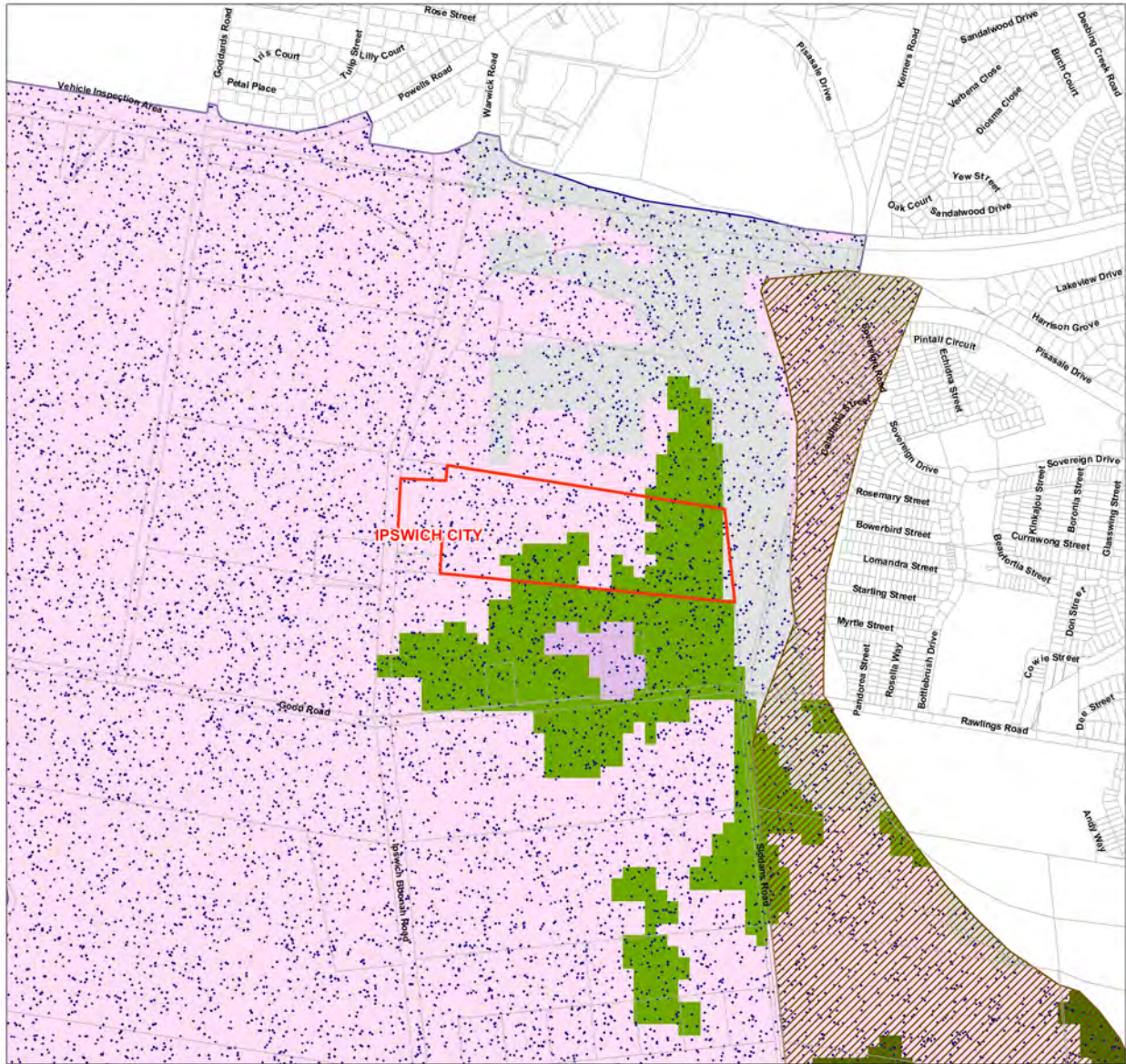
REV	DATE	DETAILS
A	21/02/2019	ISSUE FOR INFORMATION
B	25/02/2019	ISSUE FOR INFORMATION
C	27/02/2019	ISSUE FOR INFORMATION



APPENDIX

B

DESKTOP SEARCHES



Koala Conservation in South East Queensland State Planning Regulatory Provisions

- Lot and Plan
- Priority Koala Assessable Development Areas
- Koala Assessable Development Areas
- Outside SPRP Koala Assessable Development Areas
- Koala SPRP - Identified Broad-Hectare Areas**
- Koala SPRP - Identified Broad-Hectare Areas
- Koala SPRP - Habitat Values**
- Bushland Habitat**
- High Value Bushland
- Medium Value Bushland
- Low Value Bushland
- Suitable for Rehabilitation**
- High Value Rehabilitation
- Medium Value Rehabilitation
- Low Value Rehabilitation
- Other Areas of Value**
- High Value Other
- Medium Value Other
- Low Value Other
- Generally not suitable
- Water
- Cadastral Boundaries
- Local Government Boundaries



This product is projected into GDA 1994 MGA Zone 56

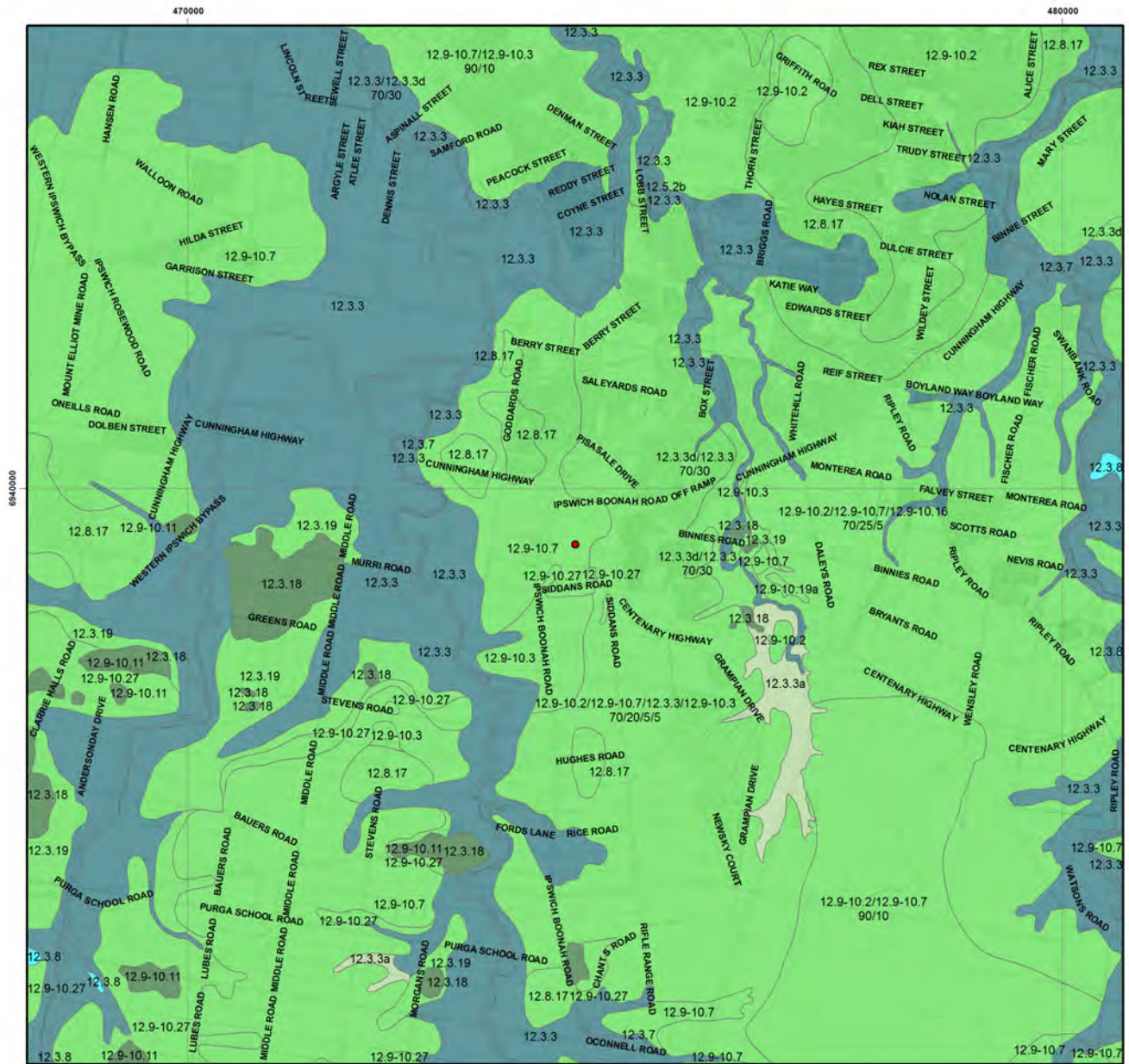
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Based on or contains data provided by the State of Queensland 2010.

Note - These maps are not regulatory. Regulatory maps and requirements can be downloaded from the DES website. Further information in relation to regulatory requirements for development and planning activities should be sought from the relevant Local Government Authority or the Department of Environment and Science.

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Pre-clearing Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups BVG5M Description (BVG1M codes)

- Coordinates
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Water
- Cadastral Boundaries



This product is projected into GDA 1994 MGA Zone 56

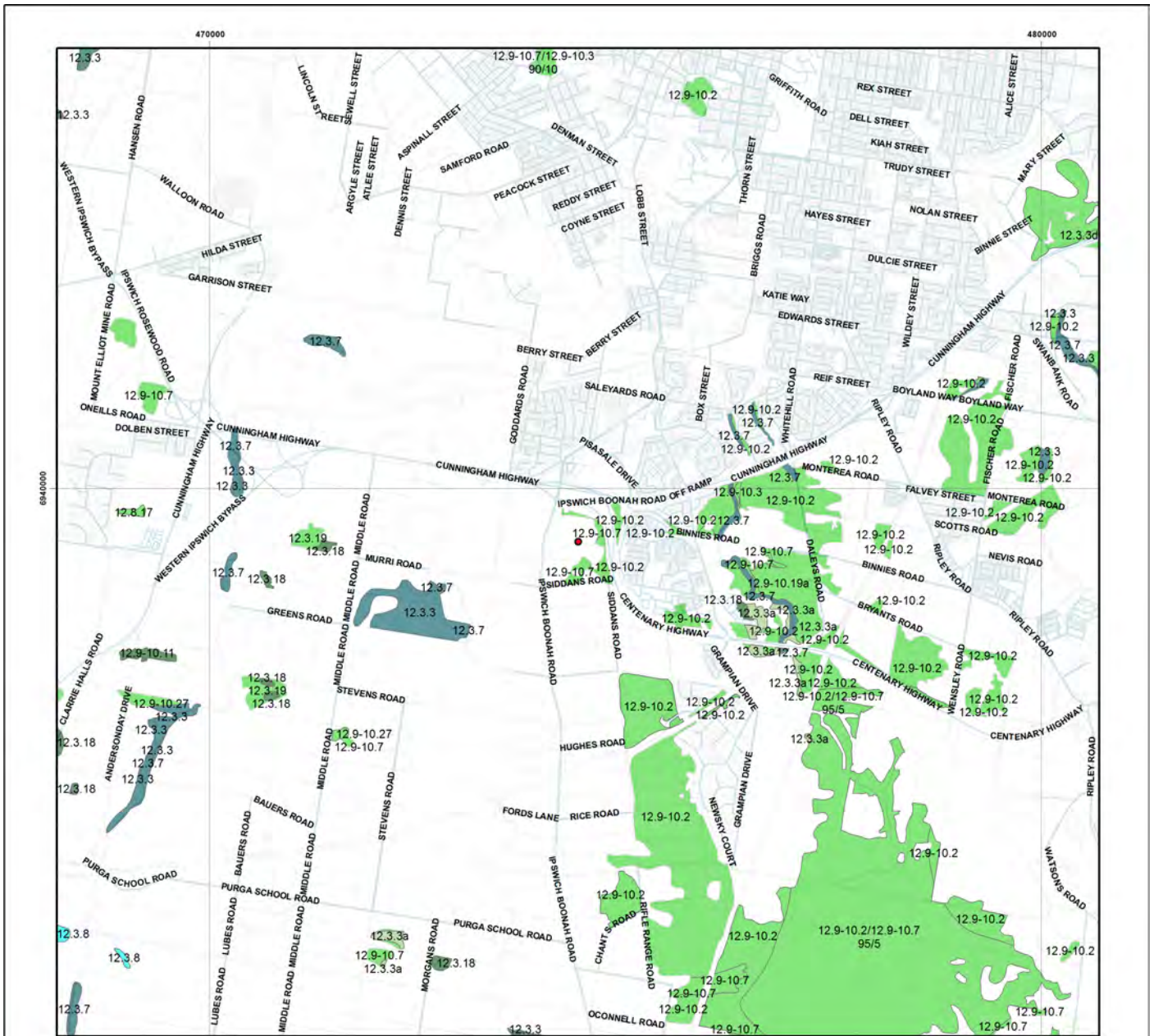
Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled.

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.

Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.

The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".

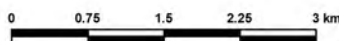
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.



Remnant 2017 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups BVG5M Description (BVG1M codes)

- Coordinates
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries



This product is projected into GDA 1994 MGA Zone 56

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled.

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.

Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".

Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 15/03/19 16:58:17

[Summary](#)

[Details](#)

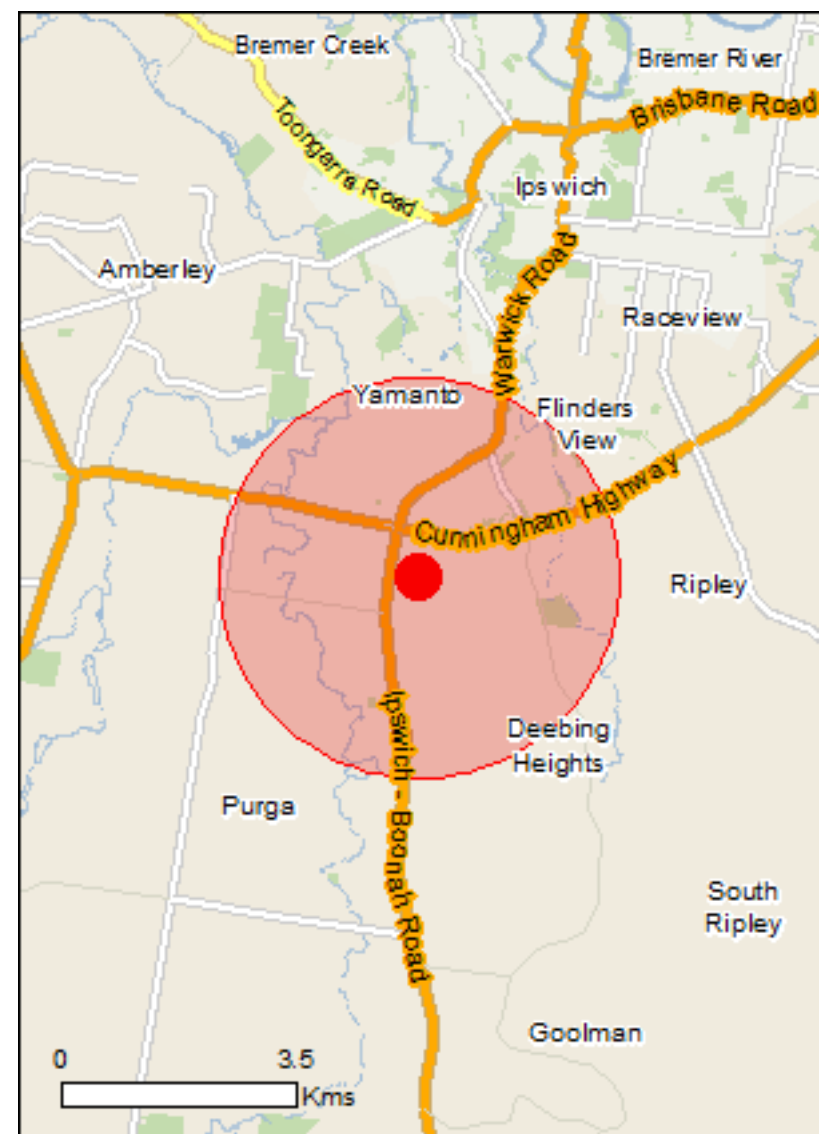
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 3.0Km



Summary

Matters of National Environmental 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:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	30
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 <http://www.environment.gov.au/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 Land:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	22
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	31
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Moreton bay	40 - 50km upstream

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.

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species

 [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
Erythrorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species

Name	Status	Type of Presence
		habitat may occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Neoceratodus forsteri Australian Lungfish, Queensland Lungfish [67620]	Vulnerable	Species or species habitat known to occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within 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]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area

Reptiles

Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species

Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area

Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

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.

Name
Defence - AMBERLEY - AP3 REMOTE RECEIVERS SITE
Defence - AMBERLEY - RAAF BASE

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species

Name	Threatened	Type of Presence
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		habitat may occur within area Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

Invasive Species

[[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Plants		
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area

Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-27.6697 152.7407

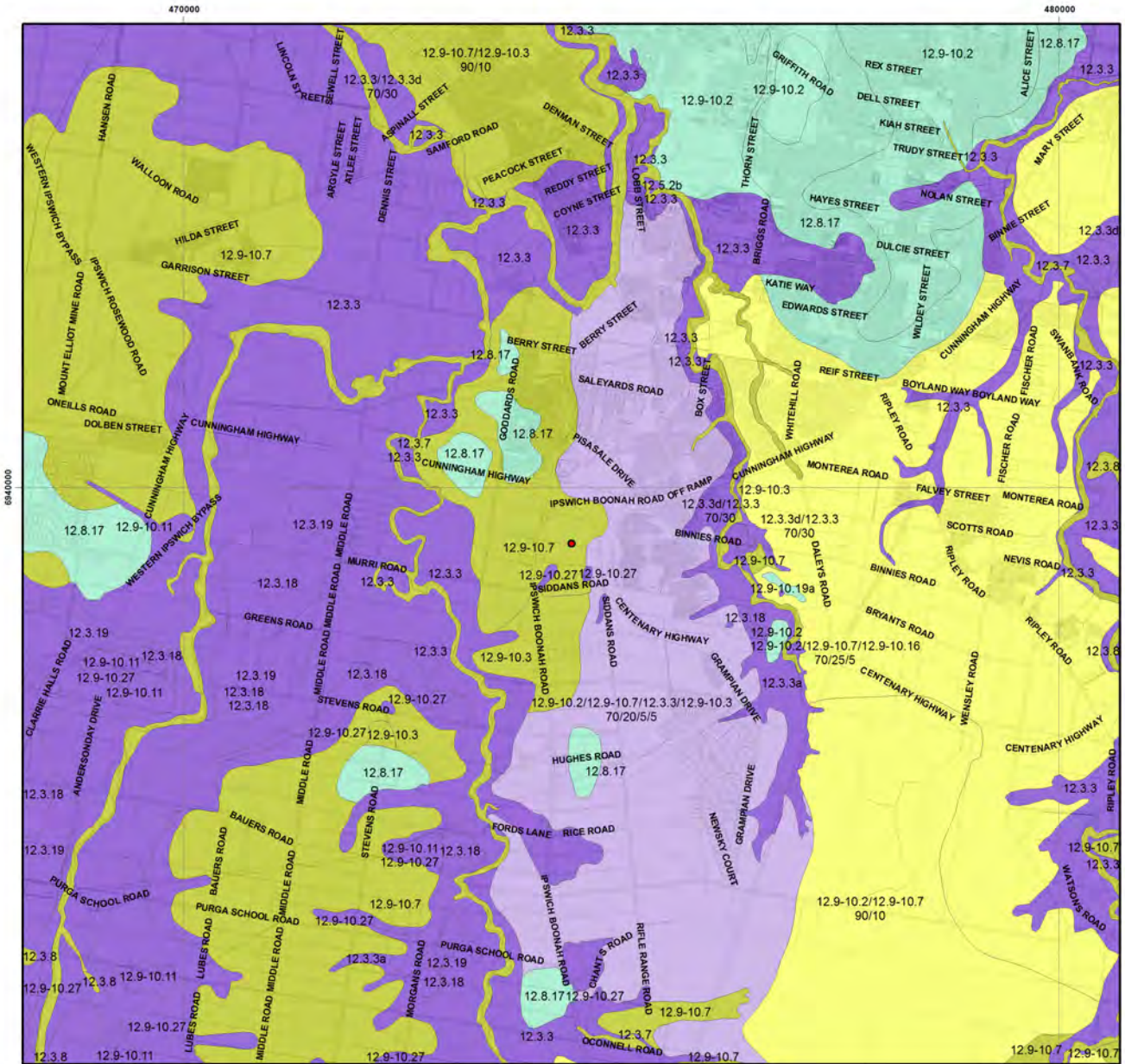
Acknowledgements

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.

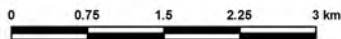
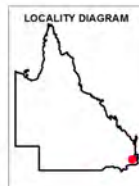
Please feel free to provide feedback via the [Contact Us](#) page.



Pre-clearing Regional Ecosystems

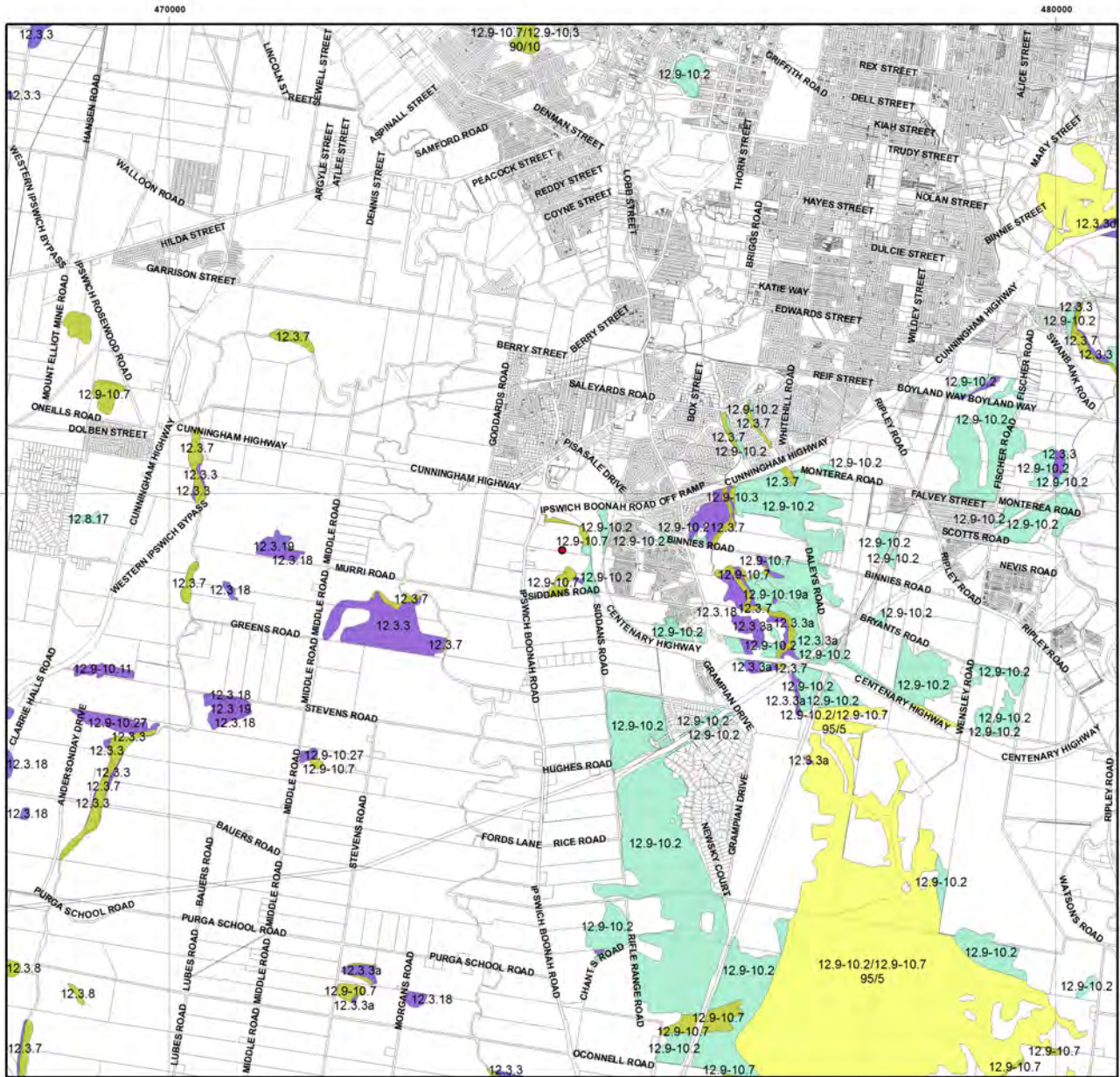
Biodiversity Status

- Coordinates
- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Water
- Cadastral Boundaries



This product is projected into GDA 1994 MGA Zone 56

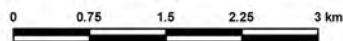
Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The polygons are labelled by regional ecosystem (RE); where more than one RE occurs, the percentage of each is labelled. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.



Remnant 2017 Regional Ecosystems

Biodiversity Status

- Coordinates
- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Non-remnant vegetation, cultivated or built environment
- Plantation
- Water
- Cadastral Boundaries



This product is projected into GDA 1994 MGA Zone 56

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.

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Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.



Vegetation management report

For Lot: 1 Plan: SP193446

Current as at 15/03/2019

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Recent changes

New vegetation clearing laws

New vegetation management laws were passed by the Queensland Parliament on 3 May 2018 and may affect the clearing you can undertake on your property.

For more information, read about the new vegetation management laws

(<https://www.dnrme.qld.gov.au/land-water/initiatives/vegetation-management-laws/>) or call 135VEG (13 58 34) between 8.30am and 4.30pm Monday to Friday.

Updated mapping

The Regulated Vegetation Management Map and Supporting Map was updated in March 2018 to reflect the most up to date information available in relation to regional ecosystems, essential habitat and wetland mapping (Version 10).

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

- *Vegetation management framework* - an explanation of the application of the framework.
- *Property details* - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s), catchment(s), coastal or non coastal status, and any applicable area management plans associated with your property.
- *Vegetation management details for the specified Lot on Plan* - specific information about your property including vegetation categories, regional ecosystems, watercourses, wetlands, essential habitat, and protected plants.
- *Contact information*.
- *Maps* - a series of colour maps to assist in identifying regulated vegetation on your property.
- *Other legislation contact information*.

This information will assist you to determine your options for managing vegetation under the vegetation management framework, which may include:

- exempt clearing work
- accepted development vegetation clearing code
- an area management plan
- a development approval.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as Queensland's Protected Plants framework or the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 6 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Vegetation management framework

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2012, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem prescribed under Schedule 5 of the Vegetation Management Regulation 2012; and
- a mangrove.

1.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify DNRME or obtain an approval approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 5.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval approval under the vegetation management framework. For all other land tenures, contact DNRME before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

<https://www.qld.gov.au/environment/land/vegetation/exemptions/>.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Contact DNRME prior to clearing in any of these areas.

1.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

<https://www.qld.gov.au/environment/land/vegetation/codes/>

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify DNRME before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at

<https://apps.dnrm.qld.gov.au/vegetation/>

1.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

As a result of the new laws, AMPs for fodder harvesting, managing thickened vegetation and managing encroachment will continue for 2 years. New notifications cannot be made for these AMPs.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an area management plan applies to your property for which you can make a new notification, it will be listed in Section 2.2 of this report. Before clearing under one of these AMPs, you must first notify the DNRME and then follow the conditions and requirements listed in the AMP.

<https://www.qld.gov.au/environment/land/vegetation/area-plans/>

1.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at

<https://www.qld.gov.au/environment/land/vegetation/applying/>

2. Property details

2.1 Tenure

All of the lot, plan and tenure information associated with property Lot: 1 Plan: SP193446, including links to relevant Smart Maps, are listed in Table 1. The tenure of the property (whether it is freehold, leasehold, or other) may be viewed by clicking on the Smart Map link(s) provided.

Table 1: Lot, plan and tenure information for the property

Lot	Plan	Tenure	Link to property on SmartMap
1	SP193446	Freehold	https://apps.information.qld.gov.au/data/cadastre/GenerateSmartMap?q=1\SP193446

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

2.2 Property location

Table 2 provides a summary of the locations for property Lot: 1 Plan: SP193446, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Ipswich City

Bioregion(s)	Subregion(s)
Southeast Queensland	Moreton Basin

Catchment(s)
Brisbane

For the purposes of the accepted development vegetation clearing codes and the State Development Assessment Provisions (SDAP), this property is regarded as*
Coastal

*See also Map 5.4

Area Management Plan(s): Nil

3. Vegetation management details for Lot: 1 Plan: SP193446

3.1 Vegetation categories

Vegetation categories are shown on the regulated vegetation management map in section 5.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 15.71ha

Vegetation category	Area (ha)
Category B	1.45
Category C	3.53
Category X	10.73

Table 4

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact DNRME to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact DNRME to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

This report does not confirm if a Property Map of Assessable Vegetation (PMAV) exists on a lot. To confirm whether or not a PMAV exists on a lot, please check the PMAV layer on the Queensland Globe2, or contact DNRME on 135VEG (135 834).

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 5.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/>

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
12.3.3	Endangered	C	0.09	Eucalyptus tereticornis woodland on Quaternary alluvium	Sparse
12.9-10.2	Least concern	B	0.86	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.2	Least concern	C	1.22	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.3	Of concern	C	0.09	Eucalyptus moluccana open forest on sedimentary rocks	Mid-dense
12.9-10.7	Of concern	B	0.59	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp., E. melanophloia woodland on sedimentary rocks	Sparse
12.9-10.7	Of concern	C	2.13	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp., E. melanophloia woodland on sedimentary rocks	Sparse
non-rem	None	X	10.73	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work
- accepted development vegetation clearing codes
- performance outcomes in State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 5.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992 (NCA)*, and includes endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 5.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map as assessable vegetation -

- 1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
- 2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	Phascolarctos cinereus	koala	V	SEQ: Open eucalypt forest and woodland that has: a) multiple strata layers containing Eucalyptus, Corymbia, Angophora, Lophostemon or Melaleuca trees that-at 1.3 metres above the ground-have a diameter both greater and less than 30 centimetres; and b) at least 1 of the following species: Eucalyptus tereticornis, E. fibrosa, E. propinqua; E. umbra, E. grandis, E. microcorys, E. tindaliae, E. resinifera, E. populnea, E. robusta, E. nigra, E. racemosa, E. crebra, E. exserta, E. seeana, Lophostemon confertus, L. suaveolens, Melaleuca quinquenervia. Outside SEQ: Open eucalypt forest and woodland that contains Eucalyptus &/or Corymbia spp. Tree species used for food varies across State and can include Eucalyptus tereticornis, E. camaldulensis, E. coolabah; E. drepanophylla, E. platyphylla, E. orgadophilla, E. thozetiana, E. melanophloia, E. populnea, E. melliodora, E. dealbata, E. microtheca, E. crebra, E. exserta, E. blakelyi, E. papuana, Corymbia tessellaris, C. citriodora, Melaleuca quinquenervia, M. leucadendra.	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.
26403	Melaleuca irbyana	bush house paperbark	E	Belah scrub with Callitris sp. and Eucalyptus melanophloia; woodland to open forest of Eucalyptus tereticornis, E. melanophloia, or Eucalyptus moluccana or Eucalyptus siderophloia and Eucalyptus moluccana	0 to 600 m	sandy, clay loam, sandy clay to clay soil	creek bank, poorly drained or seasonally flooded areas in undulating terrain, hill slope

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	SEQ: 11.3.2, 11.3.4, 11.3.25, 11.3.26, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.9.9, 12.2.5, 12.2.6, 12.2.7, 12.2.8, 12.2.10, 12.3.2, 12.3.3, 12.3.4, 12.3.5, 12.3.6, 12.3.7, 12.3.9, 12.3.10, 12.3.11, 12.3.14, 12.3.18, 12.3.19, 12.3.20, 12.5.1, 12.5.2, 12.5.3, 12.5.4, 12.5.6, 12.5.7, 12.5.10, 12.5.12, 12.8.1, 12.8.8, 12.8.9, 12.8.11, 12.8.12, 12.8.14, 12.8.16, 12.8.17, 12.8.20, 12.8.24, 12.8.25, 12.9-10.1, 12.9-10.2, 12.9-10.3, 12.9-10.4, 12.9-10.5, 12.9-10.7, 12.9-10.8, 12.9-10.11, 12.9-10.12, 12.9-10.14, 12.9-10.17, 12.9-10.18, 12.9-10.19, 12.9-10.21, 12.9-10.25, 12.9-10.26, 12.9-10.27, 12.9-10.28, 12.9-10.29, 12.11.2, 12.11.3, 12.11.5, 12.11.6, 12.11.7, 12.11.8, 12.11.9, 12.11.14, 12.11.16, 12.11.17, 12.11.18, 12.11.22, 12.11.23, 12.11.24, 12.11.25, 12.11.26, 12.11.27, 12.11.28, 12.12.2, 12.12.3, 12.12.5, 12.12.6, 12.12.7, 12.12.8, 12.12.9, 12.12.11, 12.12.12, 12.12.14, 12.12.15, 12.12.23, 12.12.24, 12.12.25, 12.12.28. Outside SEQ: 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.4.1, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.57, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 8.1.5, 8.2.3, 8.2.6, 8.2.7, 8.2.8, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.3.1, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.8, 8.3.10, 8.3.11, 8.3.13, 8.5.1, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.9.1, 8.10.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.11.10, 8.11.12, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 8.12.26, 8.12.27, 8.12.29, 8.12.31, 8.12.32, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.10, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.27, 9.4.1, 9.4.2, 9.4.3, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.15, 9.5.16, 9.5.17, 9.7.1, 9.7.2, 9.7.3, 9.7.4, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.3, 9.8.4, 9.8.5, 9.8.9, 9.8.10, 9.8.11, 9.8.13, 9.10.1, 9.10.3, 9.10.4, 9.10.5, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.12, 9.11.13, 9.11.14, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.21, 9.11.22, 9.11.23, 9.11.24, 9.11.25, 9.11.26, 9.11.28, 9.11.29, 9.11.30, 9.11.31, 9.11.32, 9.12.1, 9.12.2, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.14, 9.12.15, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.23, 9.12.24, 9.12.25, 9.12.26, 9.12.27, 9.12.28, 9.12.29, 9.12.30, 9.12.31, 9.12.32, 9.12.33, 9.12.35, 9.12.36, 9.12.37, 9.12.38, 9.12.39, 9.12.44, 10.3.2, 10.3.3, 10.3.5, 10.3.6, 10.3.9, 10.3.10, 10.3.11, 10.3.12, 10.3.13, 10.3.14, 10.3.15, 10.3.17, 10.3.20, 10.3.27, 10.3.28, 10.4.3, 10.4.9, 10.5.1, 10.5.2, 10.5.4, 10.5.5, 10.5.7, 10.5.8, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 10.7.1, 10.7.2, 10.7.3, 10.7.4, 10.7.5, 10.7.9, 10.7.10, 10.7.11, 10.7.12, 10.9.2, 10.9.3, 10.9.5, 10.10.1, 10.10.3, 10.10.4, 10.10.5, 10.10.7, 11.2.1, 11.2.5, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.5, 11.3.6, 11.3.7, 11.3.9, 11.3.10, 11.3.12, 11.3.13, 11.3.14, 11.3.15, 11.3.16, 11.3.17, 11.3.18, 11.3.19, 11.3.21, 11.3.23, 11.3.25, 11.3.26, 11.3.27, 11.3.28, 11.3.29, 11.3.30, 11.3.32, 11.3.33, 11.3.35, 11.3.36, 11.3.37, 11.3.38, 11.3.39, 11.4.2, 11.4.3, 11.4.7, 11.4.8, 11.4.9, 11.4.10, 11.4.12, 11.4.13, 11.5.1, 11.5.2, 11.5.3, 11.5.4, 11.5.5, 11.5.7, 11.5.8, 11.5.9, 11.5.12, 11.5.13, 11.5.14, 11.5.17, 11.5.18, 11.5.20, 11.5.21, 11.7.1, 11.7.2, 11.7.3, 11.7.4, 11.7.6, 11.7.7, 11.8.1, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.8.11, 11.8.12, 11.8.14, 11.8.15, 11.9.1, 11.9.2, 11.9.3, 11.9.5, 11.9.6, 11.9.7, 11.9.9, 11.9.10, 11.9.11, 11.9.13, 11.9.14, 11.10.1, 11.10.2, 11.10.3, 11.10.4, 11.10.5, 11.10.6, 11.10.7, 11.10.9, 11.10.11, 11.10.12, 11.10.13, 11.11.1, 11.11.2, 11.11.3, 11.11.4, 11.11.6, 11.11.7, 11.11.8, 11.11.9, 11.11.10, 11.11.11, 11.11.12, 11.11.13, 11.11.14, 11.11.15, 11.11.16, 11.11.17, 11.11.19, 11.11.20, 11.12.1, 11.12.2, 11.12.3, 11.12.5, 11.12.6, 11.12.7, 11.12.8, 11.12.9, 11.12.10, 11.12.13, 11.12.14, 11.12.15, 11.12.16, 11.12.17, 11.12.19, 11.12.20, 13.3.1, 13.3.2, 13.3.3, 13.3.4, 13.3.5, 13.3.7, 13.9.2, 13.11.1, 13.11.2, 13.11.3, 13.11.4, 13.11.5, 13.11.6, 13.11.8, 13.11.9, 13.12.1, 13.12.2, 13.12.3, 13.12.4, 13.12.5, 13.12.6, 13.12.8, 13.12.9, 13.12.10.
26403	11.10.1, 12.3.11, 12.3.19, 12.9-10.7, 12.9-10.11, 12.11.5, 12.11.18

3.6 Protected plants (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA), with clearing of protected plants in the wild regulated by the [Nature Conservation \(Wildlife Management\) Regulation 2006](#). These requirements apply irrespective of the classification of the vegetation under the *Vegetation Management Act 1999*.

Prior to clearing, if the plants proposed to be cleared are in the wild (see [Operational policy: When a protected plant in Queensland is considered to be 'in the wild'](#)) and the exemptions under the [Nature Conservation \(Wildlife Management\) Regulation 2006](#) are not applicable to the proposed clearing, you must check the flora survey trigger map to determine if any part of the area to be cleared is within a high risk area. The trigger map for this property is provided in section 5.5. The exemptions relate to:

- imminent risk of death or serious injury (refer s261A)
- imminent risk of serious damage to a building or other structure on land, or to personal property (refer s261B)
- *Fire and Emergency Service Act 1990* (refer 261C)
- previously cleared areas (refer s261ZB)
- maintenance activities (refer s261ZC)
- firebreak or fire management line (refer s261ZD)
- accepted development vegetation clearing code (refer s261ZE)
- conservation purposes (refer s261ZG)
- authorised in particular circumstances (refer s385).

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) from the *Vegetation Management Act 1999* (i.e. listed in the Planning Regulations 2017) while some are different.

If the proposed area to be cleared is shown as blue (i.e. high risk) on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken in accordance with the flora survey guidelines. The main objective of a flora survey is to locate any endangered, vulnerable or near threatened plants (EVNT plants) that may be present in the clearing impact area.

If a flora survey identifies that EVNT plants are not present within the clearing impact area or clearing within 100m of EVNT plants can be avoided, the clearing activity is exempt from a permit. An [exempt clearing notification form](#) must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing. The clearing must be conducted within two years after the flora survey report was submitted.

If a flora survey identifies that EVNT plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the [application form clearing permit](#).

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that EVNT plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

Further information on protected plants is available at

<http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/>

For assistance on the protected plants flora survey trigger map for this property, please contact the Department of Environment and Science at palm@des.qld.gov.au.

3.7 Emissions Reduction Fund (ERF)

The ERF is an Australian Government scheme which offers incentives for businesses and communities across the economy to reduce emissions.

Under the ERF, landholders can earn money from activities such as planting (and keeping) trees, managing regrowth vegetation and adopting more sustainable agricultural practices.

The purpose of a project is to remove greenhouse gases from the atmosphere. Each project will provide new economic opportunities for farmers, forest growers and land managers.

Further information on ERF is available at <https://www.qld.gov.au/environment/land/state/use/carbon-rights/>.

4. Contact information for DNRME

For further information on vegetation management:

Phone 135VEG (135 834)

Email vegetation@dnrme.qld.gov.au

Visit www.dnrme.qld.gov.au/our-department/contact-us/vegetation-contacts to submit an online enquiry.

For contact details for other State and Commonwealth agencies, please see Section 6.

5. Maps

The maps included in this report may also be requested individually at:

<https://www.dnrme.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form>

and

<http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/map-request.php>

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new [property maps of assessable vegetation \(PMAV\)](#).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

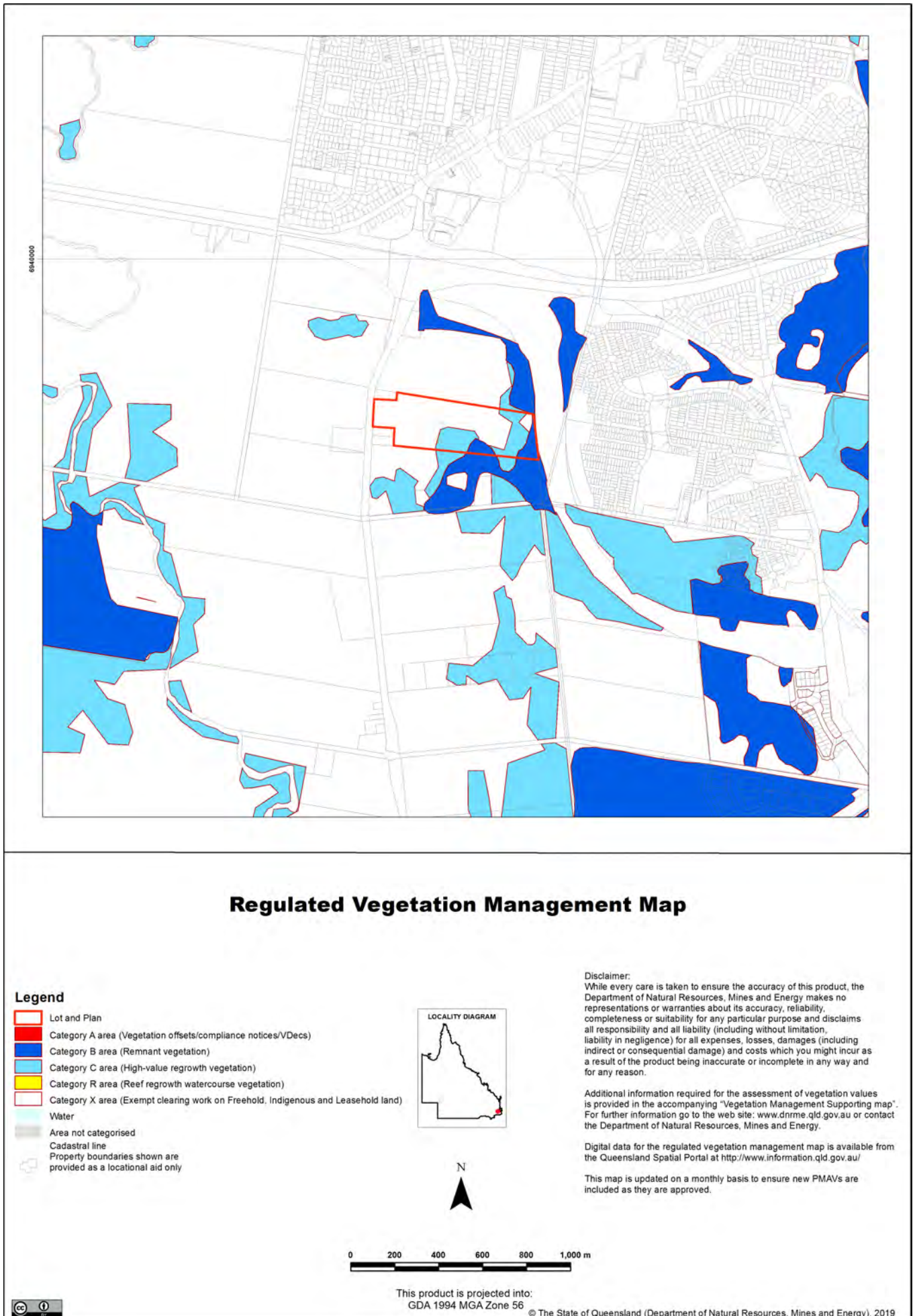
Coastal/non coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and the State Development Assessment Provisions (SDAP).

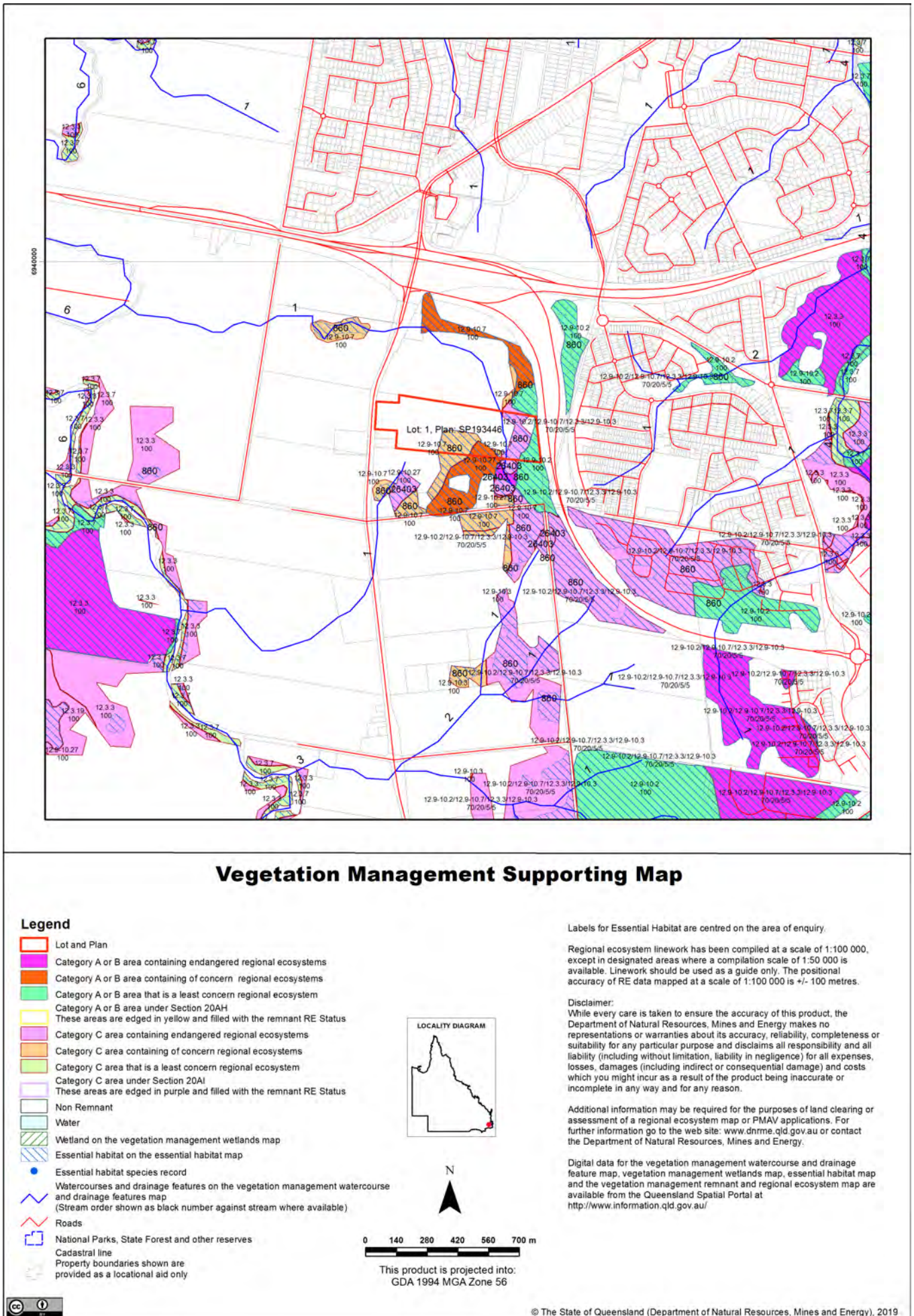
Protected plants map

The protected plants map shows areas where particular provisions of the *Nature Conservation Act 1992* apply to the clearing of protected plants.

5.1 Regulated vegetation management map



5.2 Vegetation management supporting map








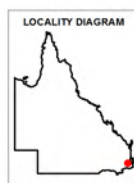
5.3 Coastal/non coastal map



Coastal/Non Coastal Map

Legend

-  Lot and Plan
-  Coastal
-  Non Coastal
-  Cadastral line
-  Property boundaries shown are provided as a locational aid only



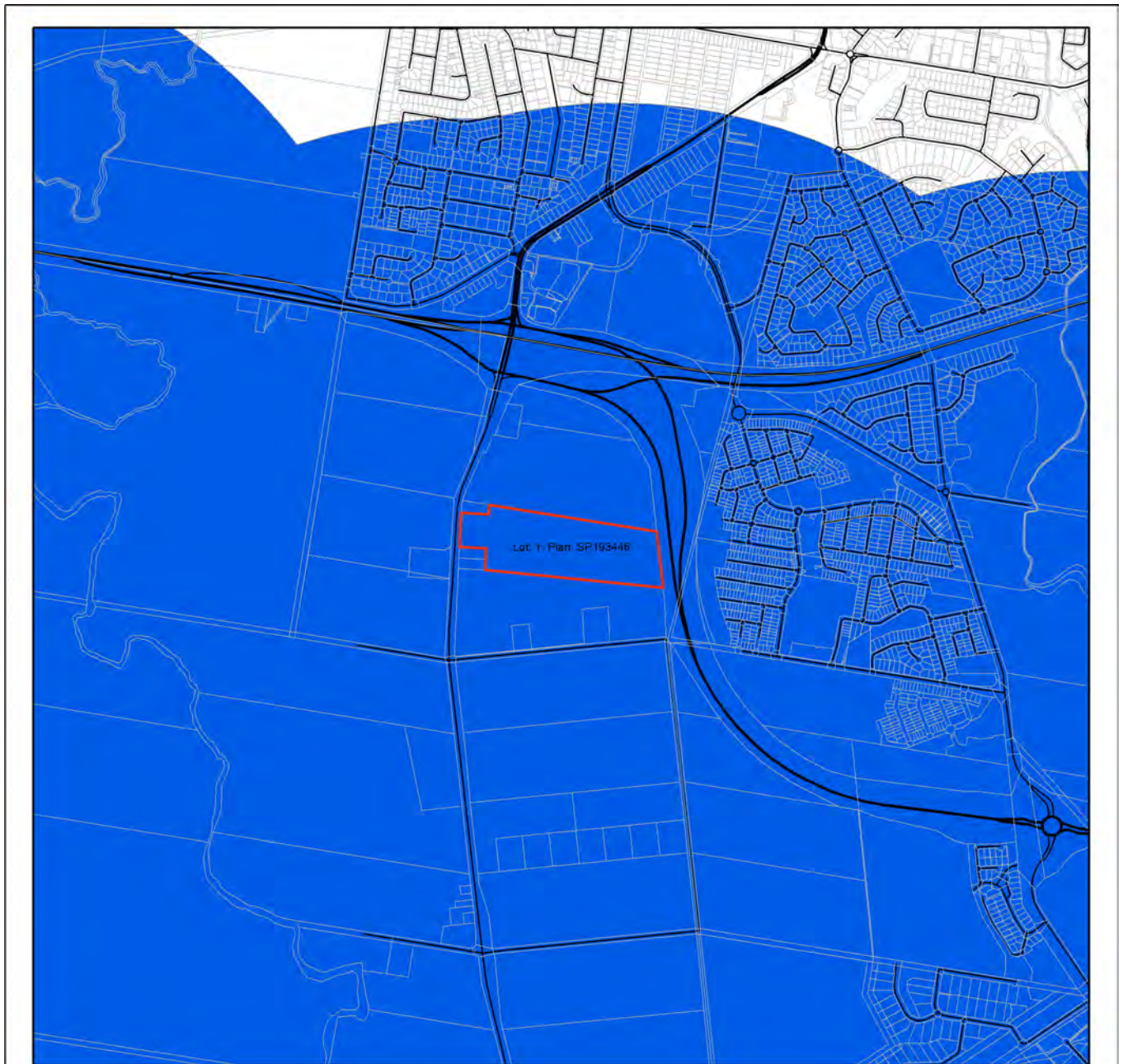
This product is projected into:
GDA 1994 MGA Zone 56

Disclaimer:

While every care is taken to ensure the accuracy of this product, the Department of Natural Resources, Mines and Energy makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.








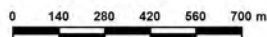
5.4 Protected plants map administered by DES



Protected Plants Flora Survey Trigger Map

Legend

-  Lot and Plan
-  High risk area
-  Cadastral line
Property boundaries shown are provided as a locational aid only
-  Freeways / motorways / highways
-  Secondary roads / streets



This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@ehp.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

6. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
Interference with overland flow Earthworks, significant disturbance	<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Natural Resources, Mines and Energy (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dnrme.qld.gov.au
Indigenous Cultural Heritage	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Aboriginal and Torres Strait Islander Partnerships (Queensland Government)	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
Mining and environmentally relevant activities Infrastructure development (coastal) Heritage issues Protected plants and protected areas ¹	<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i> <i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
Interference with fish passage in a watercourse, mangroves Forestry activities ²	<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
Matters of National Environmental Significance including listed threatened species and ecological communities	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
Development and planning processes	<i>Planning Act 2016</i> <i>State Development and Public Works Organisation Act 1971</i>	Department of State Development, Manufacturing, Infrastructure and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
Local government requirements	<i>Local Government Act 2009</i> <i>Planning Act 2016</i>	Department of Local Government, Racing and Multicultural Affairs (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office

1. In Queensland, all plants that are native to Australia are protected plants under the [Nature Conservation Act 1992](#), which endeavours to ensure that protected plants (whether whole plants or protected plants parts) are not illegally removed from the wild, or illegally traded. Prior to clearing, you should check the flora survey trigger map to determine if the clearing is within a high-risk area by visiting www.des.qld.gov.au. For further information or assistance on the protected plants flora survey trigger map for your property, please contact the Department of Environment and Science on 13QGOV (13 74 68) or email palm@des.qld.gov.au.

2. Contact the Department of Agriculture and Fisheries before clearing:

- Any sandalwood on state-owned land (including leasehold land)
- On freehold land in a 'forest consent area'
- More than five hectares on state-owned land (including leasehold land) containing commercial timber species listed in parts 2 or 3 of Schedule 6 of the Vegetation Management Regulation 2012 and located within any of the following local government management areas-Banana, Bundaberg Regional, Fraser Coast Regional, Gladstone Regional, Isaac Regional, North Burnett Regional, Somerset Regional, South Burnett Regional, Southern Downs Regional, Tablelands Regional, Toowoomba Regional, Western Downs Regional.



Vegetation management report

For Lot: 2 Plan: SP193446

Current as at 15/03/2019

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Recent changes

New vegetation clearing laws

New vegetation management laws were passed by the Queensland Parliament on 3 May 2018 and may affect the clearing you can undertake on your property.

For more information, read about the new vegetation management laws

(<https://www.dnrme.qld.gov.au/land-water/initiatives/vegetation-management-laws/>) or call 135VEG (13 58 34) between 8.30am and 4.30pm Monday to Friday.

Updated mapping

The Regulated Vegetation Management Map and Supporting Map was updated in March 2018 to reflect the most up to date information available in relation to regional ecosystems, essential habitat and wetland mapping (Version 10).

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

- *Vegetation management framework* - an explanation of the application of the framework.
- *Property details* - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s), catchment(s), coastal or non coastal status, and any applicable area management plans associated with your property.
- *Vegetation management details for the specified Lot on Plan* - specific information about your property including vegetation categories, regional ecosystems, watercourses, wetlands, essential habitat, and protected plants.
- *Contact information*.
- *Maps* - a series of colour maps to assist in identifying regulated vegetation on your property.
- *Other legislation contact information*.

This information will assist you to determine your options for managing vegetation under the vegetation management framework, which may include:

- exempt clearing work
- accepted development vegetation clearing code
- an area management plan
- a development approval.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as Queensland's Protected Plants framework or the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 6 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Vegetation management framework

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2012, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem prescribed under Schedule 5 of the Vegetation Management Regulation 2012; and
- a mangrove.

1.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify DNRME or obtain an approval approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 5.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval approval under the vegetation management framework. For all other land tenures, contact DNRME before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

<https://www.qld.gov.au/environment/land/vegetation/exemptions/>.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Contact DNRME prior to clearing in any of these areas.

1.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

<https://www.qld.gov.au/environment/land/vegetation/codes/>

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify DNRME before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at

<https://apps.dnrm.qld.gov.au/vegetation/>

1.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

As a result of the new laws, AMPs for fodder harvesting, managing thickened vegetation and managing encroachment will continue for 2 years. New notifications cannot be made for these AMPs.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an area management plan applies to your property for which you can make a new notification, it will be listed in Section 2.2 of this report. Before clearing under one of these AMPs, you must first notify the DNRME and then follow the conditions and requirements listed in the AMP.

<https://www.qld.gov.au/environment/land/vegetation/area-plans/>

1.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at

<https://www.qld.gov.au/environment/land/vegetation/applying/>

2. Property details

2.1 Tenure

All of the lot, plan and tenure information associated with property Lot: 2 Plan: SP193446, including links to relevant Smart Maps, are listed in Table 1. The tenure of the property (whether it is freehold, leasehold, or other) may be viewed by clicking on the Smart Map link(s) provided.

Table 1: Lot, plan and tenure information for the property

Lot	Plan	Tenure	Link to property on SmartMap
2	SP193446	Freehold	https://apps.information.qld.gov.au/data/cadastre/GenerateSmartMap?q=2\SP193446

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

2.2 Property location

Table 2 provides a summary of the locations for property Lot: 2 Plan: SP193446, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Ipswich City

Bioregion(s)	Subregion(s)
Southeast Queensland	Moreton Basin

Catchment(s)
Brisbane

For the purposes of the accepted development vegetation clearing codes and the State Development Assessment Provisions (SDAP), this property is regarded as*
Coastal

*See also Map 5.4

Area Management Plan(s): Nil

3. Vegetation management details for Lot: 2 Plan: SP193446

3.1 Vegetation categories

Vegetation categories are shown on the regulated vegetation management map in section 5.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 20.13ha

Vegetation category	Area (ha)
Category B	2.93
Category C	0.69
Category X	16.51

Table 4

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact DNRME to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact DNRME to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

This report does not confirm if a Property Map of Assessable Vegetation (PMAV) exists on a lot. To confirm whether or not a PMAV exists on a lot, please check the PMAV layer on the Queensland Globe2, or contact DNRME on 135VEG (135 834).

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 5.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/>

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
12.3.3	Endangered	C	0.01	Eucalyptus tereticornis woodland on Quaternary alluvium	Sparse
12.9-10.2	Least concern	B	1.30	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.2	Least concern	C	0.20	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.3	Of concern	C	0.01	Eucalyptus moluccana open forest on sedimentary rocks	Mid-dense
12.9-10.7	Of concern	B	1.63	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp., E. melanophloia woodland on sedimentary rocks	Sparse
12.9-10.7	Of concern	C	0.47	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp., E. melanophloia woodland on sedimentary rocks	Sparse
non-rem	None	X	16.51	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work
- accepted development vegetation clearing codes
- performance outcomes in State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 5.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992 (NCA)*, and includes endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 5.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map as assessable vegetation -

- 1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
- 2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	<i>Phascolarctos cinereus</i>	koala	V	SEQ: Open eucalypt forest and woodland that has: a) multiple strata layers containing <i>Eucalyptus</i> , <i>Corymbia</i> , <i>Angophora</i> , <i>Lophostemon</i> or <i>Melaleuca</i> trees that-at 1.3 metres above the ground-have a diameter both greater and less than 30 centimetres; and b) at least 1 of the following species: <i>Eucalyptus tereticornis</i> , <i>E. fibrosa</i> , <i>E. propinqua</i> ; <i>E. umbra</i> , <i>E. grandis</i> , <i>E. microcorys</i> , <i>E. tindaliae</i> , <i>E. resinifera</i> , <i>E. populnea</i> , <i>E. robusta</i> , <i>E. nigra</i> , <i>E. racemosa</i> , <i>E. crebra</i> , <i>E. exserta</i> , <i>E. seeana</i> , <i>Lophostemon confertus</i> , <i>L. suaveolens</i> , <i>Melaleuca quinquenervia</i> . Outside SEQ: Open eucalypt forest and woodland that contains <i>Eucalyptus</i> &/or <i>Corymbia</i> spp. Tree species used for food varies across State and can include <i>Eucalyptus tereticornis</i> , <i>E. camaldulensis</i> , <i>E. coolabah</i> ; <i>E. drepanophylla</i> , <i>E. platyphylla</i> , <i>E. orgadophylla</i> , <i>E. thozetiana</i> , <i>E. melanophloia</i> , <i>E. populnea</i> , <i>E. melliodora</i> , <i>E. dealbata</i> , <i>E. microtheca</i> , <i>E. crebra</i> , <i>E. exserta</i> , <i>E. blakelyi</i> , <i>E. papuana</i> , <i>Corymbia tessellaris</i> , <i>C. citriodora</i> , <i>Melaleuca quinquenervia</i> , <i>M. leucadendra</i> .	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	SEQ: 11.3.2, 11.3.4, 11.3.25, 11.3.26, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.9.9, 12.2.5, 12.2.6, 12.2.7, 12.2.8, 12.2.10, 12.3.2, 12.3.3, 12.3.4, 12.3.5, 12.3.6, 12.3.7, 12.3.9, 12.3.10, 12.3.11, 12.3.14, 12.3.18, 12.3.19, 12.3.20, 12.5.1, 12.5.2, 12.5.3, 12.5.4, 12.5.6, 12.5.7, 12.5.10, 12.5.12, 12.8.1, 12.8.8, 12.8.9, 12.8.11, 12.8.12, 12.8.14, 12.8.16, 12.8.17, 12.8.20, 12.8.24, 12.8.25, 12.9-10.1, 12.9-10.2, 12.9-10.3, 12.9-10.4, 12.9-10.5, 12.9-10.7, 12.9-10.8, 12.9-10.11, 12.9-10.12, 12.9-10.14, 12.9-10.17, 12.9-10.18, 12.9-10.19, 12.9-10.21, 12.9-10.25, 12.9-10.26, 12.9-10.27, 12.9-10.28, 12.9-10.29, 12.11.2, 12.11.3, 12.11.5, 12.11.6, 12.11.7, 12.11.8, 12.11.9, 12.11.14, 12.11.16, 12.11.17, 12.11.18, 12.11.22, 12.11.23, 12.11.24, 12.11.25, 12.11.26, 12.11.27, 12.11.28, 12.12.2, 12.12.3, 12.12.5, 12.12.6, 12.12.7, 12.12.8, 12.12.9, 12.12.11, 12.12.12, 12.12.14, 12.12.15, 12.12.23, 12.12.24, 12.12.25, 12.12.28. Outside SEQ: 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.4.1, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.29, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.6.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.57, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 8.1.5, 8.2.3, 8.2.6, 8.2.7, 8.2.8, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.3.1, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.8, 8.3.10, 8.3.11, 8.3.13, 8.5.1, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.9.1, 8.10.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.11.10, 8.11.12, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 8.12.26, 8.12.27, 8.12.29, 8.12.31, 8.12.32, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.10, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.27, 9.4.1, 9.4.2, 9.4.3, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.15, 9.5.16, 9.5.17, 9.7.1, 9.7.2, 9.7.3, 9.7.4, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.3, 9.8.4, 9.8.5, 9.8.9, 9.8.10, 9.8.11, 9.8.13, 9.10.1, 9.10.3, 9.10.4, 9.10.5, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.12, 9.11.13, 9.11.14, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.21, 9.11.22, 9.11.23, 9.11.24, 9.11.25, 9.11.26, 9.11.28, 9.11.29, 9.11.30, 9.11.31, 9.11.32, 9.12.1, 9.12.2, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.14, 9.12.15, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.23, 9.12.24, 9.12.25, 9.12.26, 9.12.27, 9.12.28, 9.12.30, 9.12.31, 9.12.32, 9.12.33, 9.12.35, 9.12.36, 9.12.37, 9.12.38, 9.12.39, 9.12.44, 10.3.2, 10.3.3, 10.3.5, 10.3.6, 10.3.9, 10.3.10, 10.3.11, 10.3.12, 10.3.13, 10.3.14, 10.3.15, 10.3.17, 10.3.20, 10.3.27, 10.3.28, 10.4.3, 10.4.9, 10.5.1, 10.5.2, 10.5.4, 10.5.5, 10.5.7, 10.5.8, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 10.7.1, 10.7.2, 10.7.3, 10.7.4, 10.7.5, 10.7.9, 10.7.10, 10.7.11, 10.7.12, 10.9.2, 10.9.3, 10.9.5, 10.10.1, 10.10.3, 10.10.4, 10.10.5, 10.10.7, 11.2.1, 11.2.5, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.5, 11.3.6, 11.3.7, 11.3.9, 11.3.10, 11.3.12, 11.3.13, 11.3.14, 11.3.15, 11.3.16, 11.3.17, 11.3.18, 11.3.19, 11.3.21, 11.3.23, 11.3.25, 11.3.26, 11.3.27, 11.3.28, 11.3.29, 11.3.30, 11.3.32, 11.3.33, 11.3.35, 11.3.36, 11.3.37, 11.3.38, 11.3.39, 11.4.2, 11.4.3, 11.4.7, 11.4.8, 11.4.9, 11.4.10, 11.4.12, 11.4.13, 11.5.1, 11.5.2, 11.5.3, 11.5.4, 11.5.5, 11.5.7, 11.5.8, 11.5.9, 11.5.12, 11.5.13, 11.5.14, 11.5.17, 11.5.18, 11.5.20, 11.5.21, 11.7.1, 11.7.2, 11.7.3, 11.7.4, 11.7.6, 11.7.7, 11.8.1, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.8.11, 11.8.12, 11.8.14, 11.8.15, 11.9.1, 11.9.2, 11.9.3, 11.9.5, 11.9.6, 11.9.7, 11.9.9, 11.9.10, 11.9.11, 11.9.13, 11.9.14, 11.10.1, 11.10.2, 11.10.3, 11.10.4, 11.10.5, 11.10.6, 11.10.7, 11.10.9, 11.10.11, 11.10.12, 11.10.13, 11.11.1, 11.11.2, 11.11.3, 11.11.4, 11.11.6, 11.11.7, 11.11.8, 11.11.9, 11.11.10, 11.11.11, 11.11.12, 11.11.13, 11.11.14, 11.11.15, 11.11.16, 11.11.17, 11.11.19, 11.11.20, 11.12.1, 11.12.2, 11.12.3, 11.12.5, 11.12.6, 11.12.7, 11.12.8, 11.12.9, 11.12.10, 11.12.13, 11.12.14, 11.12.15, 11.12.16, 11.12.17, 11.12.19, 11.12.20, 13.3.1, 13.3.2, 13.3.3, 13.3.4, 13.3.5, 13.3.7, 13.9.2, 13.11.1, 13.11.2, 13.11.3, 13.11.4, 13.11.5, 13.11.6, 13.11.8, 13.11.9, 13.12.1, 13.12.2, 13.12.3, 13.12.4, 13.12.5, 13.12.6, 13.12.8, 13.12.9, 13.12.10.

3.6 Protected plants (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA), with clearing of protected plants in the wild regulated by the [Nature Conservation \(Wildlife Management\) Regulation 2006](#). These requirements apply irrespective of the classification of the vegetation under the *Vegetation Management Act 1999*.

Prior to clearing, if the plants proposed to be cleared are in the wild (see [Operational policy: When a protected plant in Queensland is considered to be 'in the wild'](#)) and the exemptions under the [Nature Conservation \(Wildlife Management\) Regulation 2006](#) are not applicable to the proposed clearing, you must check the flora survey trigger map to determine if any part of the area to be cleared is within a high risk area. The trigger map for this property is provided in section 5.5. The exemptions relate to:

- imminent risk of death or serious injury (refer s261A)
- imminent risk of serious damage to a building or other structure on land, or to personal property (refer s261B)
- *Fire and Emergency Service Act 1990* (refer 261C)
- previously cleared areas (refer s261ZB)
- maintenance activities (refer s261ZC)
- firebreak or fire management line (refer s261ZD)
- accepted development vegetation clearing code (refer s261ZE)
- conservation purposes (refer s261ZG)
- authorised in particular circumstances (refer s385).

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) from the *Vegetation Management Act 1999* (i.e. listed in the Planning Regulations 2017) while some are different.

If the proposed area to be cleared is shown as blue (i.e. high risk) on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken in accordance with the flora survey guidelines. The main objective of a flora survey is to locate any endangered, vulnerable or near threatened plants (EVNT plants) that may be present in the clearing impact area.

If a flora survey identifies that EVNT plants are not present within the clearing impact area or clearing within 100m of EVNT plants can be avoided, the clearing activity is exempt from a permit. An [exempt clearing notification form](#) must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing. The clearing must be conducted within two years after the flora survey report was submitted.

If a flora survey identifies that EVNT plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the [application form clearing permit](#).

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that EVNT plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

Further information on protected plants is available at

<http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/>

For assistance on the protected plants flora survey trigger map for this property, please contact the Department of Environment and Science at palm@des.qld.gov.au.

3.7 Emissions Reduction Fund (ERF)

The ERF is an Australian Government scheme which offers incentives for businesses and communities across the economy to reduce emissions.

Under the ERF, landholders can earn money from activities such as planting (and keeping) trees, managing regrowth vegetation and adopting more sustainable agricultural practices.

The purpose of a project is to remove greenhouse gases from the atmosphere. Each project will provide new economic opportunities for farmers, forest growers and land managers.

Further information on ERF is available at <https://www.qld.gov.au/environment/land/state/use/carbon-rights/>.

4. Contact information for DNRME

For further information on vegetation management:

Phone 135VEG (135 834)

Email vegetation@dnrme.qld.gov.au

Visit www.dnrme.qld.gov.au/our-department/contact-us/vegetation-contacts to submit an online enquiry.

For contact details for other State and Commonwealth agencies, please see Section 6.

5. Maps

The maps included in this report may also be requested individually at:

<https://www.dnrme.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form>

and

<http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/map-request.php>

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new [property maps of assessable vegetation \(PMAV\)](#).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

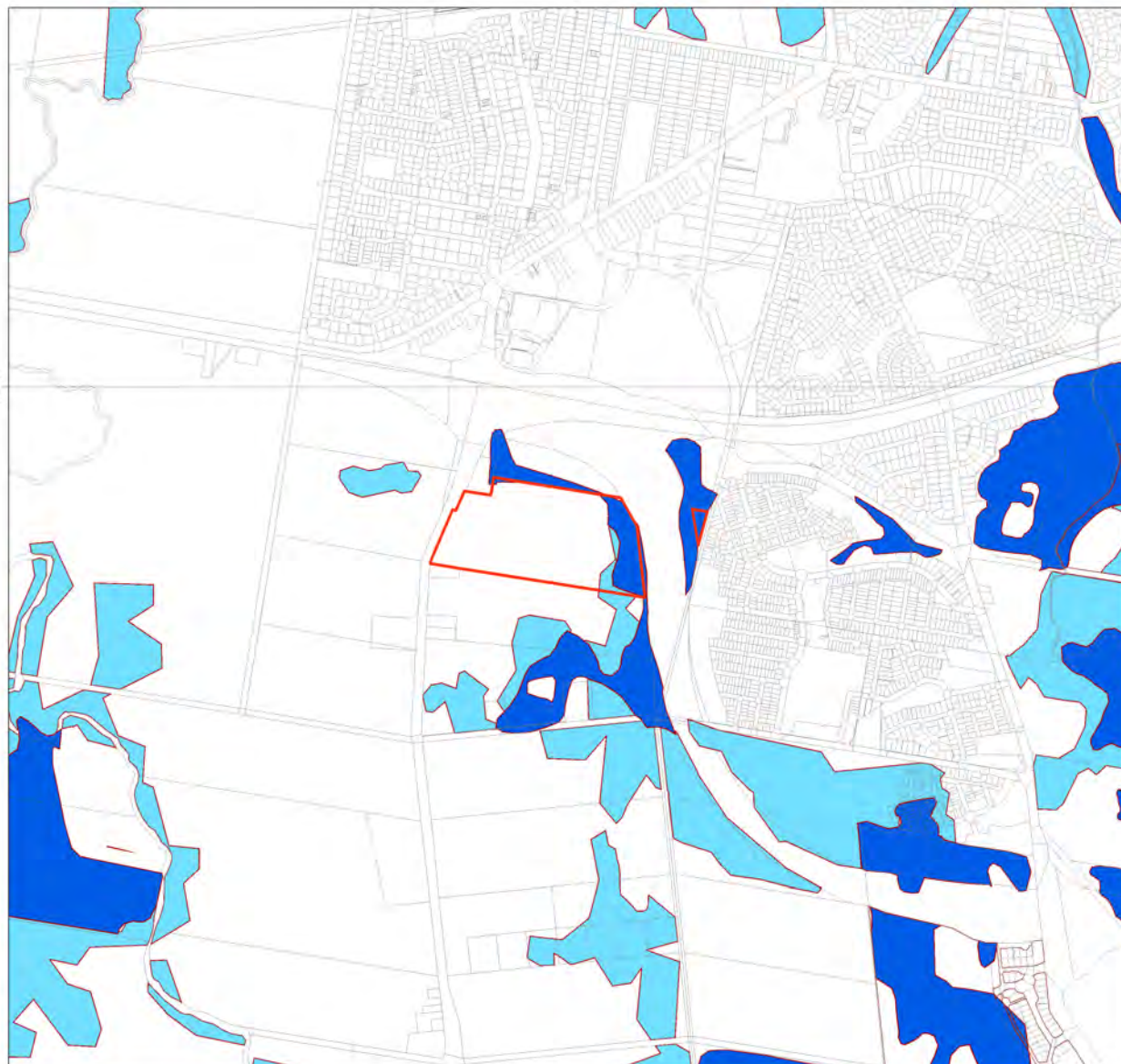
Coastal/non coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and the State Development Assessment Provisions (SDAP).

Protected plants map











The protected plants map shows areas where particular provisions of the *Nature Conservation Act 1992* apply to the clearing of protected plants.

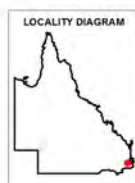
5.1 Regulated vegetation management map



Regulated Vegetation Management Map

Legend

-  Lot and Plan
-  Category A area (Vegetation offsets/compliance notices/VDecs)
-  Category B area (Remnant vegetation)
-  Category C area (High-value regrowth vegetation)
-  Category R area (Reef regrowth watercourse vegetation)
-  Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
-  Water
-  Area not categorised
-  Cadastral line
-  Property boundaries shown are provided as a locational aid only



Disclaimer:

While every care is taken to ensure the accuracy of this product, the Department of Natural Resources, Mines and Energy makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.dnrm.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

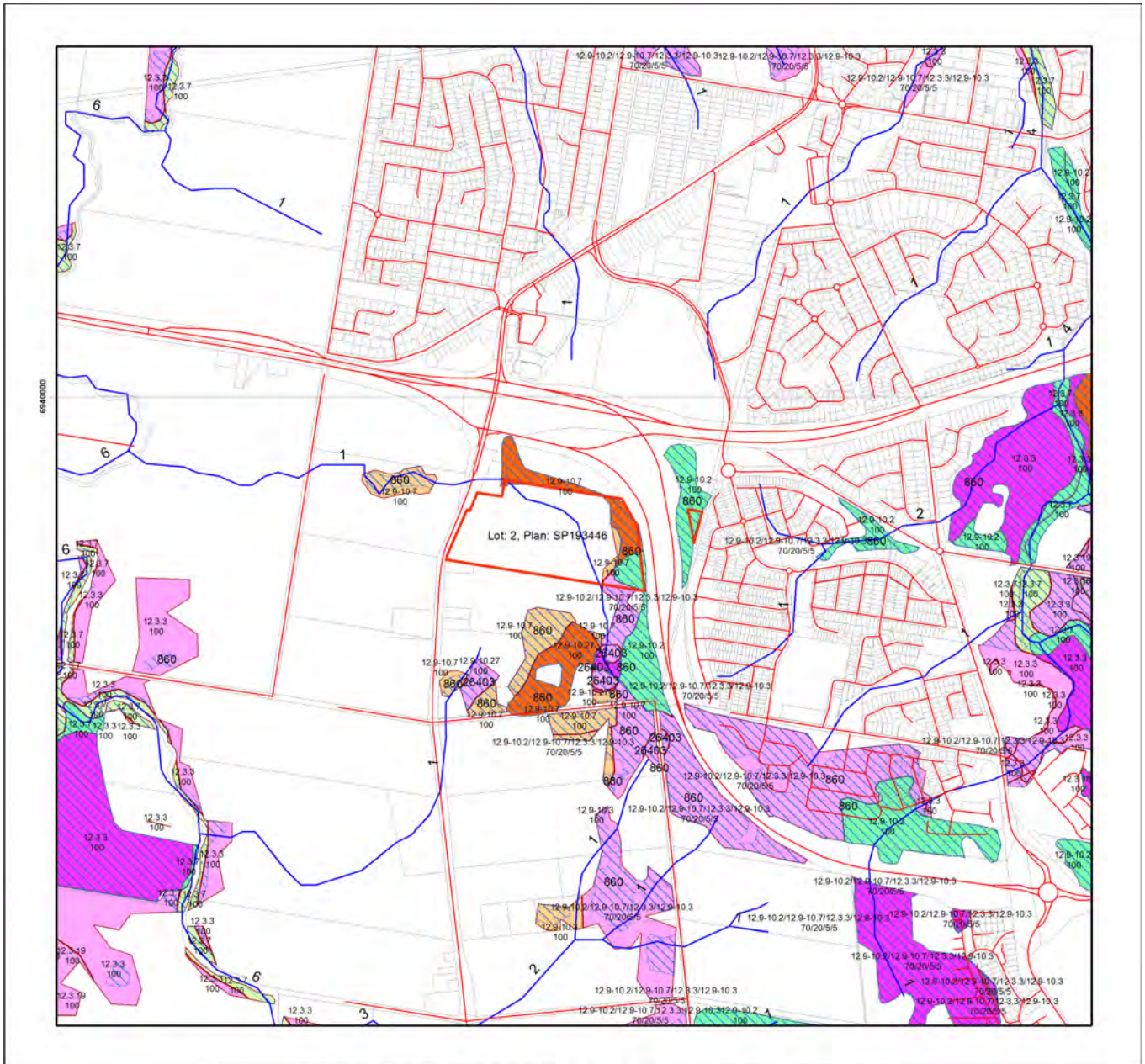
This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.



This product is projected into:
GDA 1994 MGA Zone 56

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5.2 Vegetation management supporting map



Vegetation Management Supporting Map

Legend

- Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area under Section 20AH
These areas are edged in yellow and filled with the remnant RE Status
- Category C area containing endangered regional ecosystems
- Category C area containing of concern regional ecosystems
- Category C area that is a least concern regional ecosystem
- Category C area under Section 20AI
These areas are edged in purple and filled with the remnant RE Status
- Non Remnant
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map
(Stream order shown as black number against stream where available)
- Roads
- National Parks, State Forest and other reserves
- Cadastral line
- Property boundaries shown are provided as a locational aid only



0 140 280 420 560 700 m

This product is projected into:
GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

Disclaimer:

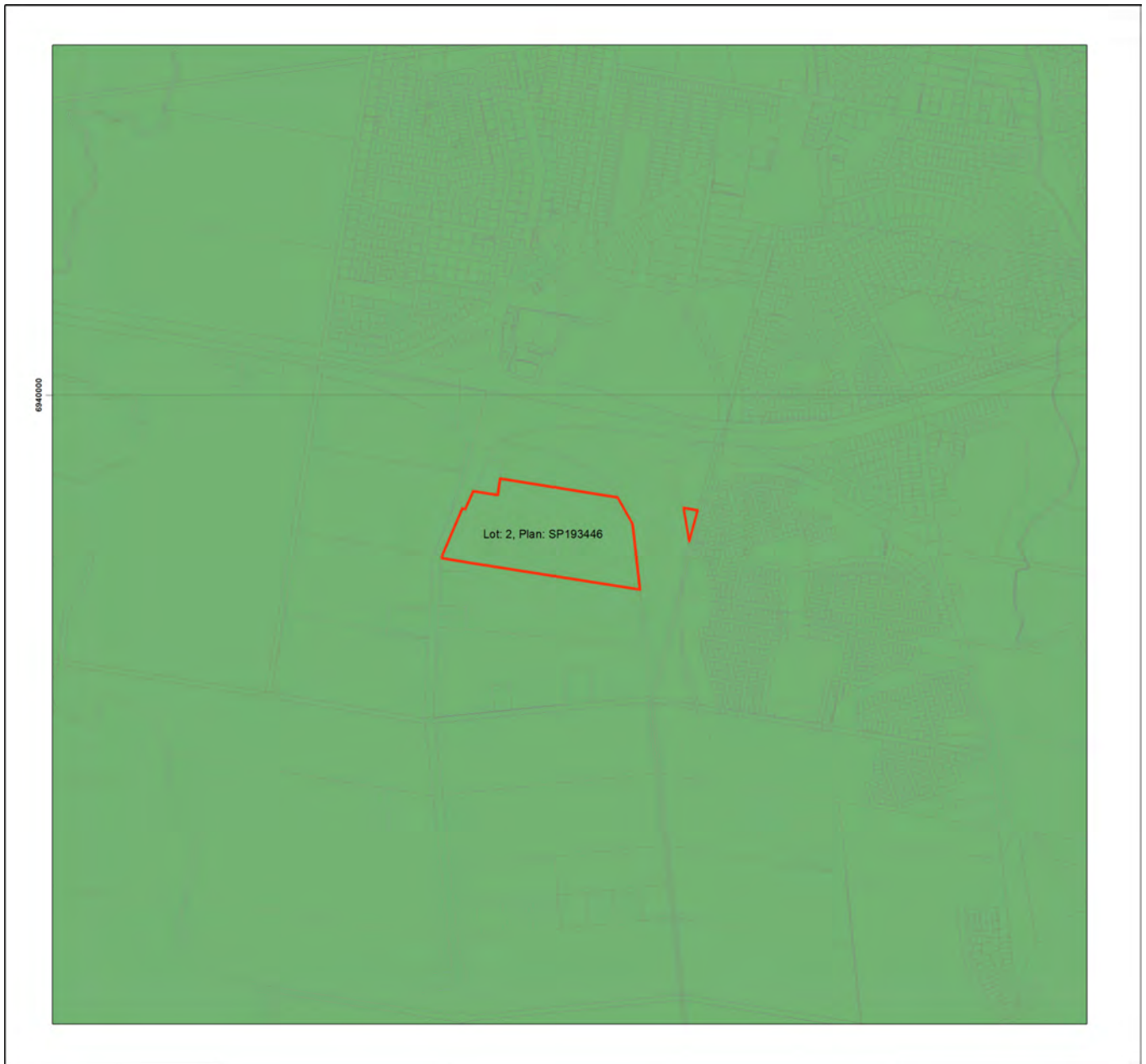
While every care is taken to ensure the accuracy of this product, the Department of Natural Resources, Mines and Energy makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>








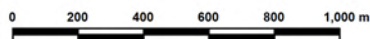
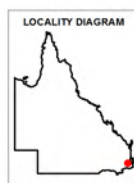
5.3 Coastal/non coastal map



Coastal/Non Coastal Map

Legend

-  Lot and Plan
-  Coastal
-  Non Coastal
-  Cadastral line
-  Property boundaries shown are provided as a locational aid only



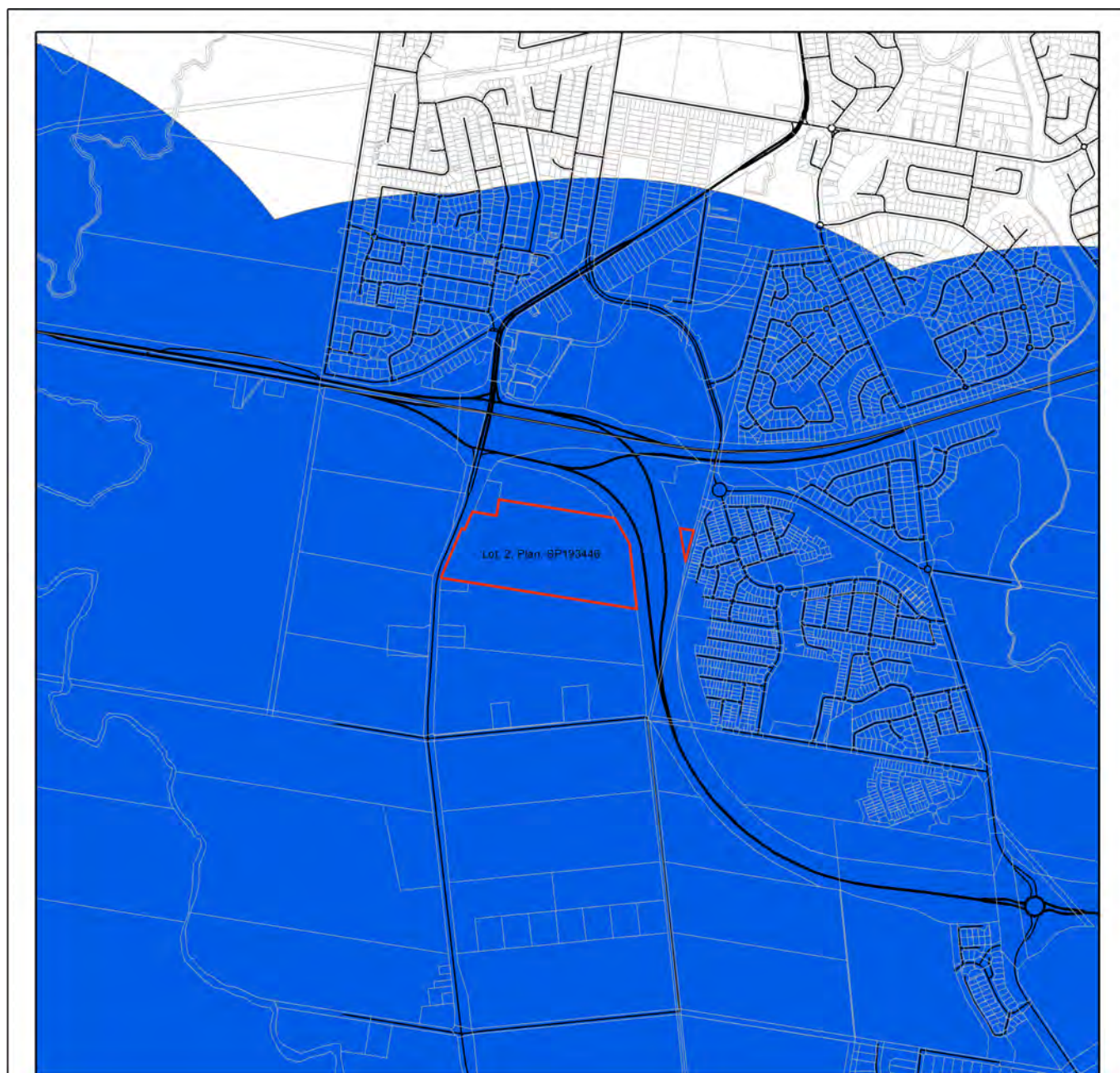
This product is projected into:
GDA 1994 MGA Zone 56

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5.4 Protected plants map administered by DES



Protected Plants Flora Survey Trigger Map

Legend

-  Lot and Plan
-  High risk area
-  Cadastral line
Property boundaries shown are provided as a locational aid only
-  Freeways / motorways / highways
-  Secondary roads / streets



0 140 280 420 560 700 m

This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@ehp.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

6. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
Interference with overland flow Earthworks, significant disturbance	<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Natural Resources, Mines and Energy (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dnrme.qld.gov.au
Indigenous Cultural Heritage	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Aboriginal and Torres Strait Islander Partnerships (Queensland Government)	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
Mining and environmentally relevant activities Infrastructure development (coastal) Heritage issues Protected plants and protected areas ¹	<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i> <i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
Interference with fish passage in a watercourse, mangroves Forestry activities ²	<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
Matters of National Environmental Significance including listed threatened species and ecological communities	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
Development and planning processes	<i>Planning Act 2016</i> <i>State Development and Public Works Organisation Act 1971</i>	Department of State Development, Manufacturing, Infrastructure and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
Local government requirements	<i>Local Government Act 2009</i> <i>Planning Act 2016</i>	Department of Local Government, Racing and Multicultural Affairs (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office

1. In Queensland, all plants that are native to Australia are protected plants under the [Nature Conservation Act 1992](#), which endeavours to ensure that protected plants (whether whole plants or protected plants parts) are not illegally removed from the wild, or illegally traded. Prior to clearing, you should check the flora survey trigger map to determine if the clearing is within a high-risk area by visiting www.des.qld.gov.au. For further information or assistance on the protected plants flora survey trigger map for your property, please contact the Department of Environment and Science on 13QGOV (13 74 68) or email palm@des.qld.gov.au.

2. Contact the Department of Agriculture and Fisheries before clearing:

- Any sandalwood on state-owned land (including leasehold land)
- On freehold land in a 'forest consent area'
- More than five hectares on state-owned land (including leasehold land) containing commercial timber species listed in parts 2 or 3 of Schedule 6 of the Vegetation Management Regulation 2012 and located within any of the following local government management areas-Banana, Bundaberg Regional, Fraser Coast Regional, Gladstone Regional, Isaac Regional, North Burnett Regional, Somerset Regional, South Burnett Regional, Southern Downs Regional, Tablelands Regional, Toowoomba Regional, Western Downs Regional.



Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point

Species: All

Type: All

Status: All

Records: All

Date: All

Latitude: -27.6697

Longitude: 152.7407

Distance: 3

Email: agatha.dolan@cardno.com.au

Date submitted: Wednesday 20 Mar 2019 15:16:46

Date extracted: Wednesday 20 Mar 2019 15:20:03

The number of records retrieved = 148

Disclaimer

As the DSITIA is still in a process of collating and vetting data, it is possible the information given is not complete. The information provided should only be used for the project for which it was requested and it should be appropriately acknowledged as being derived from Wildlife Online when it is used.

The State of Queensland does not invite reliance upon, nor accept responsibility for this information. Persons should satisfy themselves through independent means as to the accuracy and completeness of this information.

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufo	<i>Rhinella marina</i>	cane toad	Y			1
animals	amphibians	Hylidae	<i>Litoria nasuta</i>	striped rocketfrog		C		2
animals	amphibians	Hylidae	<i>Litoria dentata</i>	bleating treefrog		C		2
animals	amphibians	Hylidae	<i>Litoria rubella</i>	ruddy treefrog		C		1
animals	amphibians	Hylidae	<i>Litoria caerulea</i>	common green treefrog		C		3
animals	amphibians	Hylidae	<i>Litoria wilcoxii</i>	eastern stony creek frog		C		1
animals	amphibians	Hylidae	<i>Litoria fallax</i>	eastern sedgefrog		C		3
animals	amphibians	Hylidae	<i>Litoria gracilenta</i>	graceful treefrog		C		1
animals	amphibians	Limnodynastidae	<i>Limnodynastes peronii</i>	striped marshfrog		C		2
animals	amphibians	Limnodynastidae	<i>Platyplectrum ornatum</i>	ornate burrowing frog		C		2
animals	amphibians	Limnodynastidae	<i>Limnodynastes tasmaniensis</i>	spotted grassfrog		C		1
animals	amphibians	Limnodynastidae	<i>Limnodynastes terraereginae</i>	scarlet sided pobblebonk		C		1
animals	amphibians	Myobatrachidae	<i>Crinia signifera</i>	clicking froglet		C		1
animals	amphibians	Myobatrachidae	<i>Crinia parinsignifera</i>	beeping froglet		C		3
animals	birds	Acanthizidae	<i>Acanthiza chrysorrhoa</i>	yellow-rumped thornbill		C		1
animals	birds	Acanthizidae	<i>Gerygone olivacea</i>	white-throated gerygone		C		1
animals	birds	Acanthizidae	<i>Chthonicola sagittata</i>	speckled warbler		C		1
animals	birds	Acanthizidae	<i>Smicromis brevirostris</i>	weebill		C		1
animals	birds	Accipitridae	<i>Elanus axillaris</i>	black-shouldered kite		C		1
animals	birds	Accipitridae	<i>Accipiter fasciatus</i>	brown goshawk		C		1
animals	birds	Acrocephalidae	<i>Acrocephalus australis</i>	Australian reed-warbler		C		1
animals	birds	Anatidae	<i>Anas superciliosa</i>	Pacific black duck		C		2
animals	birds	Anatidae	<i>Chenonetta jubata</i>	Australian wood duck		C		5
animals	birds	Ardeidae	<i>Egretta novaehollandiae</i>	white-faced heron		C		2
animals	birds	Ardeidae	<i>Bubulcus ibis</i>	cattle egret		C		1
animals	birds	Artamidae	<i>Strepera graculina</i>	pieb currawong		C		2
animals	birds	Artamidae	<i>Cracticus tibicen</i>	Australian magpie		C		6
animals	birds	Artamidae	<i>Cracticus nigrogularis</i>	pieb butcherbird		C		6
animals	birds	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird		C		3
animals	birds	Cacatuidae	<i>Eolophus roseicapilla</i>	galah		C		1
animals	birds	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike		C		4
animals	birds	Charadriidae	<i>Vanellus miles</i>	masked lapwing		C		1
animals	birds	Charadriidae	<i>Vanellus miles novaehollandiae</i>	masked lapwing (southern subspecies)		C		2
animals	birds	Cisticolidae	<i>Cisticola exilis</i>	golden-headed cisticola		C		2
animals	birds	Columbidae	<i>Phaps chalcoptera</i>	common bronzewing		C		1
animals	birds	Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove		C		1
animals	birds	Columbidae	<i>Columba livia</i>	rock dove	Y			1
animals	birds	Columbidae	<i>Streptopelia chinensis</i>	spotted dove	Y			6
animals	birds	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon		C		3
animals	birds	Corvidae	<i>Corvus orru</i>	Torresian crow		C		7
animals	birds	Cuculidae	<i>Eudynamys orientalis</i>	eastern koel		C		1
animals	birds	Cuculidae	<i>Scythrops novaehollandiae</i>	channel-billed cuckoo		C		1
animals	birds	Dicruridae	<i>Dicrurus bracteatus</i>	spangled drongo		C		2
animals	birds	Estrildidae	<i>Taeniopygia bichenovii</i>	double-barred finch		C		1
animals	birds	Estrildidae	<i>Neochmia temporalis</i>	red-browed finch		C		2
animals	birds	Estrildidae	<i>Lonchura castaneothorax</i>	chestnut-breasted mannikin		C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Falconidae	<i>Falco peregrinus</i>	peregrine falcon		C		1
animals	birds	Halcyonidae	<i>Dacelo novaeguineae</i>	laughing kookaburra		C		3
animals	birds	Halcyonidae	<i>Dacelo leachii</i>	blue-winged kookaburra		C		1
animals	birds	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher		C		2
animals	birds	Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow		C		1
animals	birds	Maluridae	<i>Malurus lamberti</i>	variegated fairy-wren		C		3
animals	birds	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren		C		2
animals	birds	Maluridae	<i>Malurus cyaneus</i>	superb fairy-wren		C		8
animals	birds	Meliphagidae	<i>Plectorhyncha lanceolata</i>	striped honeyeater		C		1
animals	birds	Meliphagidae	<i>Melithreptus brevirostris</i>	brown-headed honeyeater		C		1
animals	birds	Meliphagidae	<i>Ptilotula fusca</i>	fuscous honeyeater		C		1
animals	birds	Meliphagidae	<i>Caligavis chrysops</i>	yellow-faced honeyeater		C		2
animals	birds	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater		C		4
animals	birds	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater		C		6
animals	birds	Meliphagidae	<i>Melithreptus lunatus</i>	white-naped honeyeater		C		1
animals	birds	Meliphagidae	<i>Philemon corniculatus</i>	noisy friarbird		C		8
animals	birds	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner		C		5
animals	birds	Meliphagidae	<i>Myzomela sanguinolenta</i>	scarlet honeyeater		C		4
animals	birds	Meliphagidae	<i>Melithreptus albogularis</i>	white-throated honeyeater		C		1
animals	birds	Meropidae	<i>Merops ornatus</i>	rainbow bee-eater		C		2
animals	birds	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark		C		7
animals	birds	Nectariniidae	<i>Dicaeum hirundinaceum</i>	mistletoebird		C		6
animals	birds	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird		C		2
animals	birds	Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler		C		1
animals	birds	Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote		C		6
animals	birds	Passeridae	<i>Passer domesticus</i>	house sparrow	Y			1
animals	birds	Petroicidae	<i>Eopsaltria australis</i>	eastern yellow robin		C		1
animals	birds	Petroicidae	<i>Microeca fascinans</i>	jacky winter		C		2
animals	birds	Phasianidae	<i>Coturnix ypsilophora</i>	brown quail		C		1
animals	birds	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth		C		1
animals	birds	Pomatostomidae	<i>Pomatostomus temporalis</i>	grey-crowned babbler		C		1
animals	birds	Psittacidae	<i>Alisterus scapularis</i>	Australian king-parrot		C		1
animals	birds	Psittacidae	<i>Parvipsitta pusilla</i>	little lorikeet		C		3
animals	birds	Psittacidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet		C		12
animals	birds	Psittacidae	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet		C		4
animals	birds	Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella		C		3
animals	birds	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail		C		3
animals	birds	Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail		SL		2
animals	birds	Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail		C		3
animals	birds	Strigidae	<i>Ninox boobook</i>	southern boobook		C		1
animals	birds	Sturnidae	<i>Acridotheres tristis</i>	common myna	Y			7
animals	birds	Sturnidae	<i>Sturnus vulgaris</i>	common starling	Y			1
animals	birds	Threskiornithidae	<i>Threskiornis spinicollis</i>	straw-necked ibis		C		2
animals	birds	Threskiornithidae	<i>Threskiornis molucca</i>	Australian white ibis		C		1
animals	birds	Timaliidae	<i>Zosterops lateralis</i>	silveryeye		C		3
animals	insects	Nymphalidae	<i>Danaus plexippus</i>	monarch	Y			1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	mammals	Canidae	<i>Vulpes vulpes</i>	red fox	Y			2
animals	mammals	Emballonuridae	<i>Saccolaimus flaviventris</i>	yellow-bellied sheath-tail bat		C		1
animals	mammals	Leporidae	<i>Lepus europaeus</i>	European brown hare	Y			2
animals	mammals	Macropodidae	<i>Macropus giganteus</i>	eastern grey kangaroo		C		1
animals	mammals	Macropodidae	<i>Macropus rufogriseus</i>	red-necked wallaby		C		3
animals	mammals	Macropodidae	<i>Macropus parryi</i>	whiptail wallaby		C		1
animals	mammals	Miniopteridae	<i>Miniopterus australis</i>	little bent-wing bat		C		1
animals	mammals	Molossidae	<i>Tadarida australis</i>	white-striped freetail bat		C		3
animals	mammals	Petauridae	<i>Petaurus norfolcensis</i>	squirrel glider		C		3
animals	mammals	Phalangeridae	<i>Trichosurus caninus</i>	short-eared possum		C		1
animals	mammals	Phalangeridae	<i>Trichosurus vulpecula</i>	common brushtail possum		C		3
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		V	V	82
animals	mammals	Pteropodidae	<i>Pteropus poliocephalus</i>	grey-headed flying-fox		C	V	17
animals	mammals	Pteropodidae	<i>Pteropus alecto</i>	black flying-fox		C		18
animals	mammals	Tachyglossidae	<i>Tachyglossus aculeatus</i>	short-beaked echidna		SL		2
animals	ray-finned fishes	Anguillidae	<i>Anguilla reinhardtii</i>	longfin eel				3
animals	ray-finned fishes	Anguillidae	<i>Anguilla australis</i>	southern shortfin eel				2
animals	ray-finned fishes	Atherinidae	<i>Craterocephalus stercusmuscarum</i>	flyspecked hardyhead				1
animals	ray-finned fishes	Cichlidae	<i>Oreochromis mossambica</i>	Mozambique mouthbrooder	Y			1
animals	ray-finned fishes	Cyprinidae	<i>Carassius auratus</i>	goldfish	Y			1
animals	ray-finned fishes	Eleotridae	<i>Philypnodon grandiceps</i>	flathead gudgeon				1
animals	ray-finned fishes	Eleotridae	<i>Hypseleotris compressa</i>	empire gudgeon				2
animals	ray-finned fishes	Eleotridae	<i>Hypseleotris galii</i>	firetail gudgeon				2
animals	ray-finned fishes	Eleotridae	<i>Hypseleotris sp.</i>					1
animals	ray-finned fishes	Eleotridae	<i>Gobiomorphus australis</i>	striped gudgeon				1
animals	ray-finned fishes	Melanotaeniidae	<i>Melanotaenia duboulayi</i>	crimsonspotted rainbowfish				1
animals	ray-finned fishes	Percichthyidae	<i>Macquaria novemaculeata</i>	Australian bass				1
animals	ray-finned fishes	Poeciliidae	<i>Xiphophorus maculatus</i>	platy	Y			1
animals	ray-finned fishes	Poeciliidae	<i>Gambusia holbrooki</i>	mosquitofish	Y			3
animals	reptiles	Agamidae	<i>Pogona barbata</i>	bearded dragon		C		1
animals	reptiles	Agamidae	<i>Intellagama lesueurii</i>	eastern water dragon		C		2
animals	reptiles	Boidae	<i>Morelia spilota</i>	carpet python		C		1
animals	reptiles	Colubridae	<i>Dendrelaphis punctulatus</i>	green tree snake		C		4
animals	reptiles	Colubridae	<i>Boiga irregularis</i>	brown tree snake		C		1
animals	reptiles	Elapidae	<i>Pseudechis guttatus</i>	spotted black snake		C		1/1
animals	reptiles	Elapidae	<i>Cacophis harriettae</i>	white-crowned snake		C		1
animals	reptiles	Gekkonidae	<i>Gehyra dubia</i>	dubious dtella		C		2
animals	reptiles	Scincidae	<i>Cryptoblepharus pulcher pulcher</i>	elegant snake-eyed skink		C		1
animals	reptiles	Scincidae	<i>Lampropholis sp.</i>			C		1
animals	reptiles	Scincidae	<i>Carlia vivax</i>	tussock rainbow-skink		C		1
animals	reptiles	Scincidae	<i>Lampropholis delicata</i>	dark-flecked garden sunskink		C		2
animals	reptiles	Scincidae	<i>Ctenotus spaldingi</i>	straight-browed ctenotus		C		2
animals	reptiles	Varanidae	<i>Varanus varius</i>	lace monitor		C		1
fungi	lecanoromycetes	Cladoniaceae	<i>Cladia muelleri</i>			C		1/1
plants	Equisetopsida	Asteraceae	<i>Leiocarpa brevicompta</i>			C		1/1
plants	Equisetopsida	Celastraceae	<i>Hippocratea barbata</i>	knotvine		C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Equisetopsida	Chenopodiaceae	<i>Maireana microphylla</i>			C		1/1
plants	Equisetopsida	Lamiaceae	<i>Ajuga australis</i>	Australian bugle		C		1/1
plants	Equisetopsida	Lauraceae	<i>Cryptocarya triplinervis</i> var. <i>pubens</i>			C		1/1
plants	Equisetopsida	Myrtaceae	<i>Melaleuca irbyana</i>			E		1/1
plants	Equisetopsida	Poaceae	<i>Calypochloa gracillima</i> subsp. <i>ipsviciensis</i>			C		2/2
plants	Equisetopsida	Pteridaceae	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>			C		1/1
plants	Equisetopsida	Pteridaceae	<i>Cheilanthes distans</i>	bristly cloak fern		C		1/1
plants	Equisetopsida	Rosaceae	<i>Prunus persica</i> var. <i>persica</i>		Y			1/1
plants	Equisetopsida	Scrophulariaceae	<i>Buddleja madagascariensis</i>	buddleia	Y			1/1
plants	Equisetopsida	Vitaceae	<i>Cayratia clematidea</i>	slender grape		C		1/1

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 in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ().

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

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).

This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.

This number is output as 999 if it equals or exceeds this value.

APPENDIX

C

QUATERNARY PLOT DATA

Quaternary Plot 1



Attribute	Comments
Date	1/04/2019
Collectors	MT & AD
Coordinates	-27.6677, 152.743
Site ID	QP1
Remnant/Regrowth?	Remnant
RE Code	12.9-10.7
T1 = Canopy	<i>Eucalyptus crebra</i> , <i>Eucalyptus tereticornis</i> , <i>Corymbia citriodora</i>
T2 = Subcanopy	<i>Corymbia tessellaris</i> , <i>E. crebra</i> , <i>Acacia leiocalyx</i> , <i>C. citriodora</i>
S2 = Upper Shrub	<i>Lantana camara</i> , <i>A. leiocalyx</i> , <i>Opuntia stricta</i>
S1 = Lower Shrub	<i>Lomandra longifolia</i>
G = Groundcover	<i>Urochloa decumbens</i>
Height T1	18m
% T1 cover	50%
Notes	<i>E. crebra</i> dominant. No <i>Melaleuca irbyana</i> present. One large stag present.

Quaternary Plot 2



Attribute	Comments
Date	1/04/2019
Collectors	MT & AD
Coordinates	-27.6685, 152.74337
Site ID	QP2
Remnant/Regrowth?	Remnant
RE Code	12.9-10.7
T1 = Canopy	<i>E. crebra</i> , <i>E. tereticornis</i> , <i>C. citriodora</i>
T2 = Subcanopy	<i>C. tessellaris</i> , <i>E. crebra</i> , <i>A. leiocalyx</i> , <i>C. citriodora</i>
S2 = Upper Shrub	<i>L. camara</i> , <i>A. leiocalyx</i> , <i>O. stricta</i>
S1 = Lower Shrub	<i>L. longifolia</i>
G = Groundcover	<i>U. decumbens</i>
Height T1	18m
% T1 cover	50%
Notes	Same as QP1

Quaternary Plot 3



Attribute	Comments
Date	1/04/2019
Collectors	MT & AD
Coordinates	-27.67152, 152.7405
Site ID	QP3
Remnant/Regrowth?	Remnant
RE Code	12.9-10.7
T1 = Canopy	<i>E. crebra</i> , <i>C. citriodora</i> , <i>E. tereticornis</i>
T2 =Subcanopy	<i>C. citriodora</i>
S2 = Upper Shrub	<i>O. stricta</i> , <i>Agave Americana</i> ,
S1 = Lower Shrub	Slashed grass
G = Groundcover	Slashed grass, <i>Bryophyllum delagoense</i>
Height T1	20 m
% T1 cover	60%
Notes	Timber stockpile present. Most vegetation appears to be remnant, although the area is mapped at Category C. The area immediately adjacent contains high-value regrowth.

Quaternary Plot 4



Attribute	Comments
Date	1/04/2019
Collectors	MT & AD
Coordinates	-27.67124, 152.74128
Site ID	QP 4
Remnant/Regrowth?	Mainly Remnant - clearing and Regrowth along southern boundary
RE Code	12.9-10.27
T1 = Canopy	<i>C. citriodora</i> , <i>E. crebra</i>
T2 = Subcanopy	<i>C. Citriodora</i> , <i>Tipuana tipu</i>
S2 = Upper Shrub	<i>C. Citriodora</i>
S1 = Lower Shrub	<i>L. camara</i> , <i>O. stricta</i>
G = Groundcover	<i>Imperata cylindrica</i>
Height T1	50m
% T1 cover	20%
Notes	Some clearing along southern section - <i>M. Irbyana</i> outside of mapped Regional Ecosystem, downslope towards the dam. <i>M. irbyana</i> likely to be present in neighbouring property.

Quaternary Plot 5



Attribute	Comments
Date	1/04/2019
Collectors	MT & AD
Coordinates	-27.669, 152.74274
Site ID	QP5
Remnant/Regrowth?	Remnant – with patchy regrowth
RE Code	12.9-10.2/12.9/10.7/12.3.3/12.9-10.3
T1 = Canopy	<i>C. Citriodora</i> , <i>E. Crebra</i> , <i>E. Tereticornis</i>
T2 =Subcanopy	<i>C. Citriodora</i> , <i>A. leiocalyx</i>
S2 = Upper Shrub	<i>A. leiocalyx</i>
S1 = Lower Shrub	<i>L. camara</i>
G = Groundcover	<i>Lantana montevidensis</i> , <i>Chrysocephalum apiculatum</i>
Height T1	23m
% T1 cover	60%

Quaternary Plot 6



Attribute	Comments
Date	1/04/2019
Collectors	MT & AD
Coordinates	-27.67056, 152.7434
Site ID	QP 6
Remnant/Regrowth?	Remnant
RE Code	12.9-10.7
T1 = Canopy	<i>E. Crebra</i> , <i>E. Tereticornis</i> , <i>C. Citriodora</i> , <i>E. Moluccana</i>
T2 =Subcanopy	<i>C. Citriodora</i> , <i>E. Crebra</i>
S2 = Upper Shrub	<i>Alphitonia excelsa</i>
S1 = Lower Shrub	<i>L. camara</i>
G = Groundcover	<i>L. montevidensis</i> , <i>Imperata cylindrica</i> , <i>Dianella caerulea</i>
Height T1	25 m
% T1 cover	40%
Notes	Koala (<i>Phascolarctos cinereus</i>) present in forest – foraging in <i>E. moluccana</i>

Quaternary Plot 7



Attribute	Comments
Date	1/04/2019
Collectors	MT & AD
Coordinates	-27.6697, 152.7427
Site ID	QP7
Remnant/Regrowth?	Regrowth
RE Code	12.9-10.7
T1 = Canopy	<i>E. Crebra</i> , <i>c. Tessellaris</i> , <i>E. Tereticornis</i>
T2 =Subcanopy	<i>C. Tessellaris</i> , <i>Acacia leiocalyx</i> , <i>E. Crebra</i> ,
S2 = Upper Shrub	<i>L. camara</i> , <i>Sida cordifolia</i>
S1 = Lower Shrub	<i>Conyza sumatrensis</i> , <i>Conyza sumatrensis</i>
G = Groundcover	<i>Megathyrsus maximus</i> , <i>Dianella caerulea</i>
Height T1	19 m
% T1 cover	30%
Notes	Area appears to appears to be historically grazed. Cow patties present. Lacking habitat features.

APPENDIX

D

FLORA AND FAUNA LIKELIHOOD OF OCCURRENCE
ASSESSMENT

Scientific Name	Common Name	Status		Source^	General habitat requirements	Are these requirements known or expected to be present on site?	Recorded on Wildlife online within 3km of site?	Is a suitable landzone present?	Are known or expected associated species present?	Likelihood of Occurrence of Suitable Habitat
		NC Act	EPBC Act							
Flora										
<i>Melaleuca irbyana</i>	0	E	CE	WO	Open eucalypt forest in clay, sandstone or alluvial soils.	yes	no	yes	yes	Possible
<i>Bosistoa transversa</i>	three-leaved bosistoa	-	V	PMST	Wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 m in altitude. Associated vegetation includes <i>Argyrodendron trifoliolatum</i> , <i>Syzygium hodgkinsoniae</i> , <i>Endiandra pubens</i> , <i>Dendrocnide photinophylla</i> , <i>Acmena ingens</i> , <i>Diploglottis australis</i> and <i>Diospyros mabacea</i> .	possible	no	no	yes	Unlikely
<i>Dichanthium setosum</i>	bluegrass	V	-	PMST	Grown on heavy basaltic black soils and red-brown loams with clay in <i>Eucalyptus</i> spp. woodlands and grasslands. Commonly associated species include White Box (<i>Eucalyptus albens</i>), Silver-leaved Ironbark (<i>Eucalyptus melanophloia</i>), Yellow Box (<i>Eucalyptus melliodora</i>), Manna Gum (<i>Eucalyptus viminalis</i>), Amulla (<i>Myoporum debile</i>), Purple Wire-grass (<i>Aristida ramosa</i>), Kangaroo Grass (<i>Themeda triandra</i>), Fine-leaved Tussock-grass (<i>Poa sieberiana</i>), Red-leg Grass (<i>Bothriochloa ambigua</i>), Pitted Blue-grass (<i>Bothriochloa decipiens</i>), <i>Macrozamia stenomera</i> , Small Woolly Burr-medic (<i>Medicago minima</i>), Scaly Buttons (<i>Leptorhynchos squamatus</i>), <i>Lomandra</i> aff. <i>longifolia</i> , Australian Bugle (<i>Ajuga australis</i>), Bogan-flea (<i>Calotis hispidula</i>) and <i>Austrodanthonia</i> spp., <i>Dichopogon</i> spp., <i>Brachyscome</i> spp., <i>Vittadinia</i> spp., <i>Wahlenbergia</i> spp. and <i>Psoralea</i> spp.	possible	no	no	no	Unlikely
<i>Notelaea lloydii</i>	Lloyd's olive	V	V	PMST	Hilly, steep terrain or gullies and dry gentle slopes (rarely rocky outcrops) on shallow, well-drained rocky soils. Often found in	yes	no	no	no	Unlikely

					ecotone between eucalypt forest and vine thickets. Recorded with <i>Eucalyptus crebra</i> , <i>Corymbia maculata</i> , <i>E. acmenoides</i> , <i>C. citriodora</i> , <i>Acacia concurren</i> , and associated trees and shrubs <i>Brachychiton populneus</i> , <i>Alphitonia excelsa</i> , <i>A. aulacocarpa</i> , <i>A. falcata</i> , & <i>Diospyros ferrea</i> var. <i>geminata</i> .					
<i>Samadera bidwillii</i>	Quassia	V	V	PMST	Occurs in lowland rainforest often with <i>Araucaria cunninghamii</i> or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland, it is commonly found in areas adjacent to both temporary and permanent watercourses up to 510 m altitude	no	no	no	no	Unlikely
Mammals										
<i>Phascolarctos cinereus</i>	Koala	V	V	PMST	Eucalypt woodland, forest with an abundance of Food and shelter trees of the genus's <i>Eucalyptus</i> , <i>Corymbia</i> and <i>Lophostemon</i> .	yes	yes	yes	yes	Likely
<i>Pteropus poliocephalus</i>	grey-headed flying fox	-	V	PMST	Suitable foraging resources and roosting sites are provided by a variety of forest types including rainforests, open forests, closed and open woodlands, <i>Melaleuca</i> swamps and <i>Banksia</i> woodlands. The primary food source is blossom from <i>Eucalyptus</i> and related genera.	yes	yes	yes	yes	Likely
<i>Chalinolobus dwyeri</i>	Large-eared pied bat	V	V	PMST	Natural roosts may depend heavily on sandstone outcrops. Foraging in higher altitude moist tall open forest adjacent to rainforest.	possible	no	no	no	Unlikely
<i>Dasyurus maculatus</i>	Spotted-tailed quoll	V	E	PMST	Intact eucalypt forests and woodlands, coastal heathlands and rainforests.	possible	no	no	no	Unlikely
<i>Petauroides volans</i>	Greater glider	V	V	PMST	Largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers. During the day it shelters in tree hollows, with a particular selection for large hollows in large, old trees	possible	no	no	yes	Unlikely
Birds										

<i>Phipidura rufifrons</i>	Rufous fantail	SL	Ma, Mi	WO	Found mainly in wet sclerophyll forests, often in gullies, sometimes found in subtropical and temperate rainforest.	yes	no	yes	yes	Possible
<i>Botaurus poiciloptilus</i>	Australasian bittern	-	E	PMST	Freshwater wetlands with tall dense vegetation	yes	no	no	yes	Unlikely
<i>Erythroriorchis radiatus</i>	Red goshawk	E	V	PMST	Forest and woodland with a mosaic of vegetation types, large prey populations (birds), and permanent water. The vegetation types include eucalypt woodland, open forest, tall open forest, gallery rainforest, swamp sclerophyll forest, and rainforest margins.	yes	no	no	yes	Unlikely
<i>Lathamus discolor</i>	Swift parrot	E	CE	PMST	A variety of woodlands with mature eucalypts, where nectar production is plentiful and reliable.	yes	no	no	yes	Unlikely
<i>Turnix melanogaster</i>	Black-breasted button quail	V	V	PMST	Drier low closed forests, particularly semi-evergreen vine thicket, low microphyll vine forest, Araucarian microphyll vine forest and Araucarian notophyll vine forest mostly in areas with 770-1200 mm rainfall per annum.	possible	no	no	possible	Unlikely
Fish										
<i>Neoceratodus forsteri</i>	Australian lungfish	-	V	PMST	Requires still or slow-flowing, shallow, vegetated pools with clear or turbid water in which to spawn and feed. The species is restricted to areas of permanent water and cannot live in saline waters or migrate through sea water. Principally in the Mary and Burnett River systems.	yes	no	no	yes	Unlikely
# E = Endangered, V = Vulnerable under both NC Act and EPBC Act. CE = Critically Endangered under the EPBC Act. NT = Near Threatened; LC = Least Concern under the NC Act. ^WO = Wildlife Online; PM = EPBC Protected Matters Report										

APPENDIX

E

FLORA AND FAUNA SPECIES LIST

Family	Scientific name	Common name	Status	Restricted Invasive?
Flora				
Fabaceae	<i>Acacia fimbriata</i>	Brisbane Golden Wattle	LC	
Fabaceae	<i>Acacia irrorata</i>	Green Wattle	LC	
Fabaceae	<i>Acacia leiocalyx</i>	Black wattle	LC	
Agavaceae	<i>Agave americana</i>	Century Plant	*	
Asteraceae	<i>Ageratum houstonianum</i>	Blue billy goat weed	*	
Casuarinaceae	<i>Allocasuarina torulosa</i>	Forest oak	LC	
Rhamnaceae	<i>Alphitonia excelsa</i>	Red Ash	LC	
Poaceae	<i>Andropogon virginicus</i>	Whiskey grass	*	
Polygonaceae	<i>Antigonon leptopus</i>	Coral vine	*	
Poaceae	<i>Aristida vagans</i>	Threeawn speargrass	LC	
Aristolochiaceae	<i>Aristolochia meridionalis</i> subsp. <i>meridionalis</i>		LC	
Asteraceae	<i>Baccharis halimifolia</i>	Groundsel	*	Y
Crassulaceae	<i>Bryophyllum delagoense</i>	Mother of millions	*	Y
Poaceae	<i>Chloris gayana</i>	Rhodes grass	*	
Asteraceae	<i>Chrysocephalum apiculatum</i>	Yellow buttons	LC	
Asteraceae	<i>Cirsium vulgare</i>	Spear thistle	*	
Asteraceae	<i>Conyza sumatrensis</i>	Tall fleabane	*	
Poaceae	<i>Cortaderia selloana</i>	Pampas grass	*	
Myrtaceae	<i>Corymbia citriodora</i>	Lemon-scented gum	LC	
Myrtaceae	<i>Corymbia tessellaris</i>	Moreton bay ash	LC	
Fabaceae	<i>Crotalaria lanceolata</i> subsp. <i>lanceolata</i>	Rattle pod	*	
Convolvulaceae	<i>Cuscuta campestris</i>	Golden dodder	*	
Cyperaceae	<i>Cyperus brevifolius</i>	Mullumbimby couch	*	
Cyperaceae	<i>Cyperus rotundus</i>	Nut grass	*	
Hemerocallidaceae	<i>Dianella caerulea</i>	Blue flax lilly	LC	
Convolvulaceae	<i>Dichondra repens</i>	Kidney Weed	LC	
Poaceae	<i>Eragrostis curvula</i>	African lovegrass	*	
Myrtaceae	<i>Eucalyptus crebra</i>	Narrow-leaved ironbark	LC	
Myrtaceae	<i>Eucalyptus moluccana</i>	Gum-topped box	LC	
Myrtaceae	<i>Eucalyptus tereticornis</i>	Forest red gum	LC	
Santalaceae	<i>Exocarpos cupressiformis</i>	Native Cherry	LC	
Moraceae	<i>Ficus elastica</i>	Rubber fig	*	
Rutaceae	<i>Flindersia australis</i>	Crows Ash	LC	
Glycine	<i>Glycine tabacina</i>	Variable glycine	LC	
Apocynaceae	<i>Gomphocarpus physocarpus</i>	Balloon cotton-bush	*	
Poaceae	<i>Imperata cylindrica</i>	Blady Grass	LC	
Verbenaceae	<i>Lantana camara</i>	Lantana	*	Y

Verbenaceae	<i>Lantana montevidensis</i>	Creeping lantana	*	Y
Fabaceae	<i>Leucaena leucocephala</i>	Leucana	*	
Laxmanniaceae	<i>Lomandra filiformis</i>	Wattle mat-rush	LC	
Laxmanniaceae	<i>Lomandra longifolia</i>	Spiny-headed mat-rush	LC	
Onagraceae	<i>Ludwigia peruviana</i>	Primrose willow	*	
Fabaceae	<i>Macroptilium atropurpureum</i>	Siratro	*	
Poaceae	<i>Megathysus maximus</i>	Guinea grass	*	
Myrtaceae	<i>Melaleuca irbyana</i>	Bushhouse paperbark	E	
Nymphaeaceae	<i>Nymphaea mexicana</i>	Mexican water lilly	*	
Menyanthaceae	<i>Nymphoides indica</i>		LC	
Cactaceae	<i>Opuntia stricta</i>	Prickly pear	*	Y
Apocynaceae	<i>Parsonia straminea</i>	Monkey rope vine	LC	
Polygonaceae	<i>Persicaria attenuata</i>	Smartweed	LC	
Euphorbiaceae	<i>Petalostigma pubescens</i>	Bitter Bark	LC	
Portulacaceae	<i>Portulaca pilosa</i>	Hairy portulaca	*	
Fabaceae	<i>Pultenaea uchila</i>	Orange pultenea	LC	
Euphorbiaceae	<i>Ricinus communis</i>	Castor oil	*	
Poaceae	<i>Setaria sphacelata</i>	South African pigeon grass	*	
Malvaceae	<i>Sida cordifolia</i>	Flannel weed	*	
Myrtaceae	<i>Syzygium australe</i>	Bush cherry	LC	
Fabaceae	<i>Tipuana tipu</i>	Tipuana	*	
Typhaceae	<i>Typha spp.</i>	Cumbungi	*	
Poaceae	<i>Urochloa decumbens</i>	Signal Grass	*	
Verbenaceae	<i>Verbena bonariensis</i>	Purple top verbena	*	
Aves				
Accipitridae	<i>Lophoictinia isura</i>	Square tailed kite	LC	
Anatidae	<i>Anas superciliosa</i>	Pacific black duck	LC	
Corvidae	<i>Corvus orru</i>	Torresian crow	LC	
Artamidae	<i>Cracticus nigrogularis</i>	Pied butcherbird	LC	
Artamidae	<i>Cracticus tibicen</i>	Australian magpie	LC	
Artamidae	<i>Cracticus torquatus</i>	Grey butcherbird	LC	
Alcedinidae	<i>Dacelo novaeguineae</i>	Laughing kookaburra	LC	
Anatidae	<i>Dendrocygna arcuata</i>	Wandering whistling duck	LC	
Psittaculidae	<i>Eolophus roseicapilla</i>	Galah	LC	
Rallidae	<i>Fulica atra</i>	Eurasian coot	LC	
Meliphagidae	<i>Manorina melanocephala</i>	Noisy miner	*	
Petroicidae	<i>Petroica rosea</i>	Rose robin	LC	
Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	Black cormorant	LC	
Psittaculidae	<i>Platycercus adscitus</i>	Pale headed rosella	LC	

Psittaculidae	<i>Platycercus eximius</i>	Eastern rosella	LC
Rallidae	<i>Porphyrio porphyrio</i>	Purple swamphen	LC
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey fantail	LC
Rhipiduridae	<i>Rhipidura leucophrys</i>	Willy wagtail	LC
Psittaculidae	<i>Trichoglossus moluccanus</i>	Rainbow lorikeet	LC
Mammals			
Macropodidae	<i>Macropud giganteus</i>	Eastern grey kangaroo	LC
Phascolarctidae	<i>Phascolarctos cinereus</i>	Koala	V
Amphibians			
Myobatrachidae	<i>Pseudophryne major</i>	Great Brown Broodfrog	LC

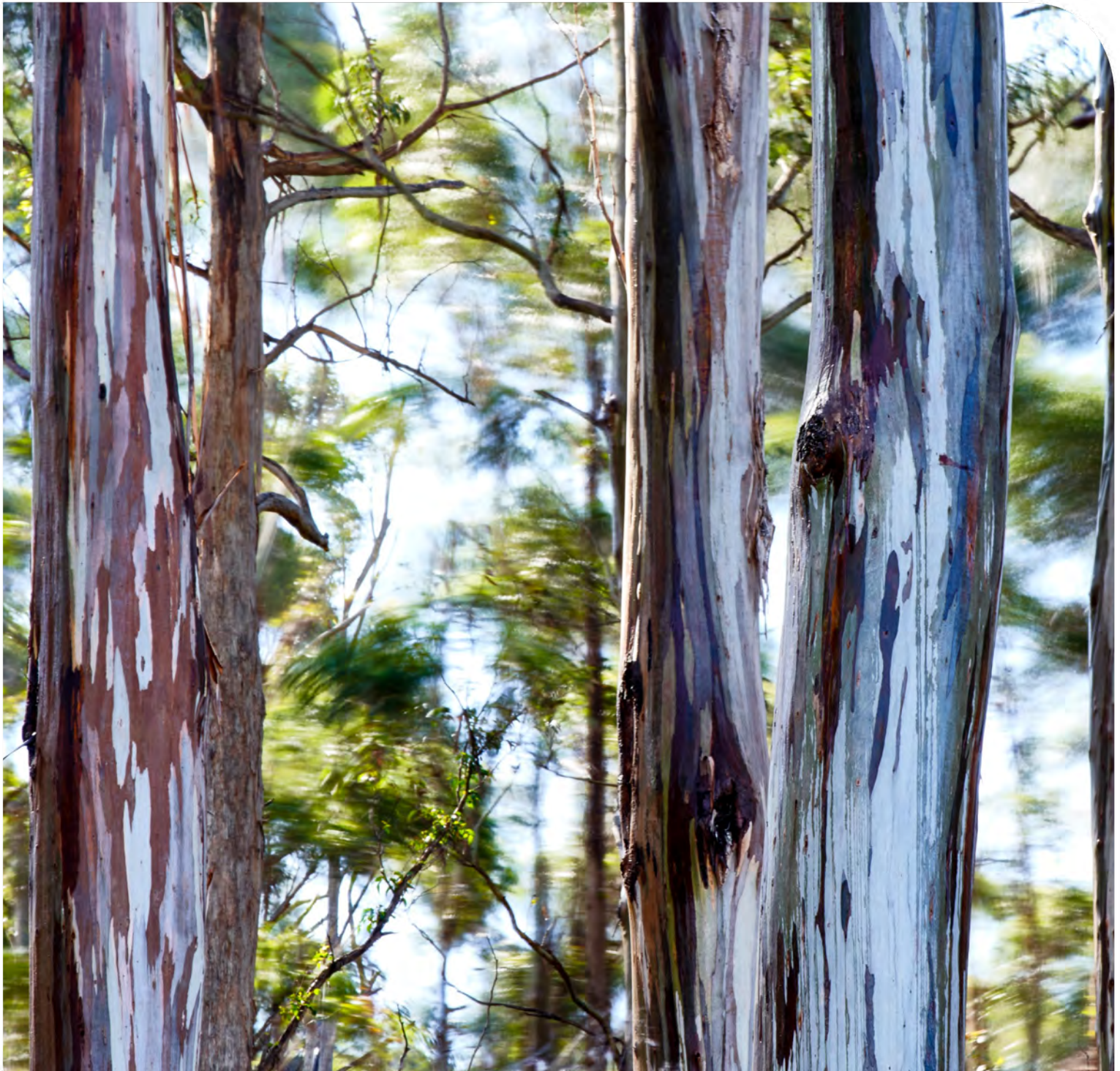
Appendix J Environmental Assessment Report

Excellence in your environment



GBGC
Environmental Assessment Report

Prepared for ADG Engineers/Racing Queensland | 20 October 2021



Document control

Project number	Client	Project manager	LGA
6117	ADG/Racing Queensland	Lisa Carter	Ipswich

Version	Author	Review	Status	Comments	Date
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Executive summary

Project outline

ADG Engineers (ADG) are assisting Racing Queensland in developing the GBGC at 40-76 Ipswich-Boonah Road, Purga Queensland (the Project) (Figure 1). The Project will be located within the following three (3) land parcels:

- Lot 1 on SP193446;
- Lot 2 on SP193446; and
- Lot 3 RP127928.

An Ecological Assessment Report (EcoAR) was undertaken for the Project by Cardno in April 2019. Cardno's EcoAR provided Racing Queensland (RQ) with information to inform the Development Footprint, design and layout of the Project. As such, the EcoAR was conducted with particular attention to the Regulated Vegetation communities under the *Vegetation Management Act 1999* and Koala (*Phascolarctus cinereus*) habitat according to the South East Queensland Koala Conservation State Planning Regulatory Provisions (SPRP). The Koala Conservation SPRP has been repealed and replaced with the *Nature Conservation (Koala) Conservation Plan 2017*, therefore an assessment addressing this updated legislation has been provided as part of this report.

Cardno's EcoAR was referenced and utilised to contribute to the overall field survey effort of the ecological assessment purposes only, however the desktop mapping and potential development options assessed within Cardno's EcoAR are no longer relevant to the current Project design options and therefore it has not been considered further. ADG/Racing Queensland have commissioned Niche to assess outstanding environmental requirements for the Project based on:

- Amended design and scope of works for the Project;
- Updated legislative triggers associated to changes within the Queensland regulatory system (particularly relating to Koalas); and
- A broader scope of environmental values requiring assessment (for example, those relating to watercourses and associated legislative triggers).

This Environmental Assessment Report (EnvAR) reports on desktop and field assessment findings for the amended Project scope, updated legislative triggers and any outstanding ecological values/assessment required for the Project.

This EnvAR will form part of the Ministerial Designation process currently being undertaken for the Project.

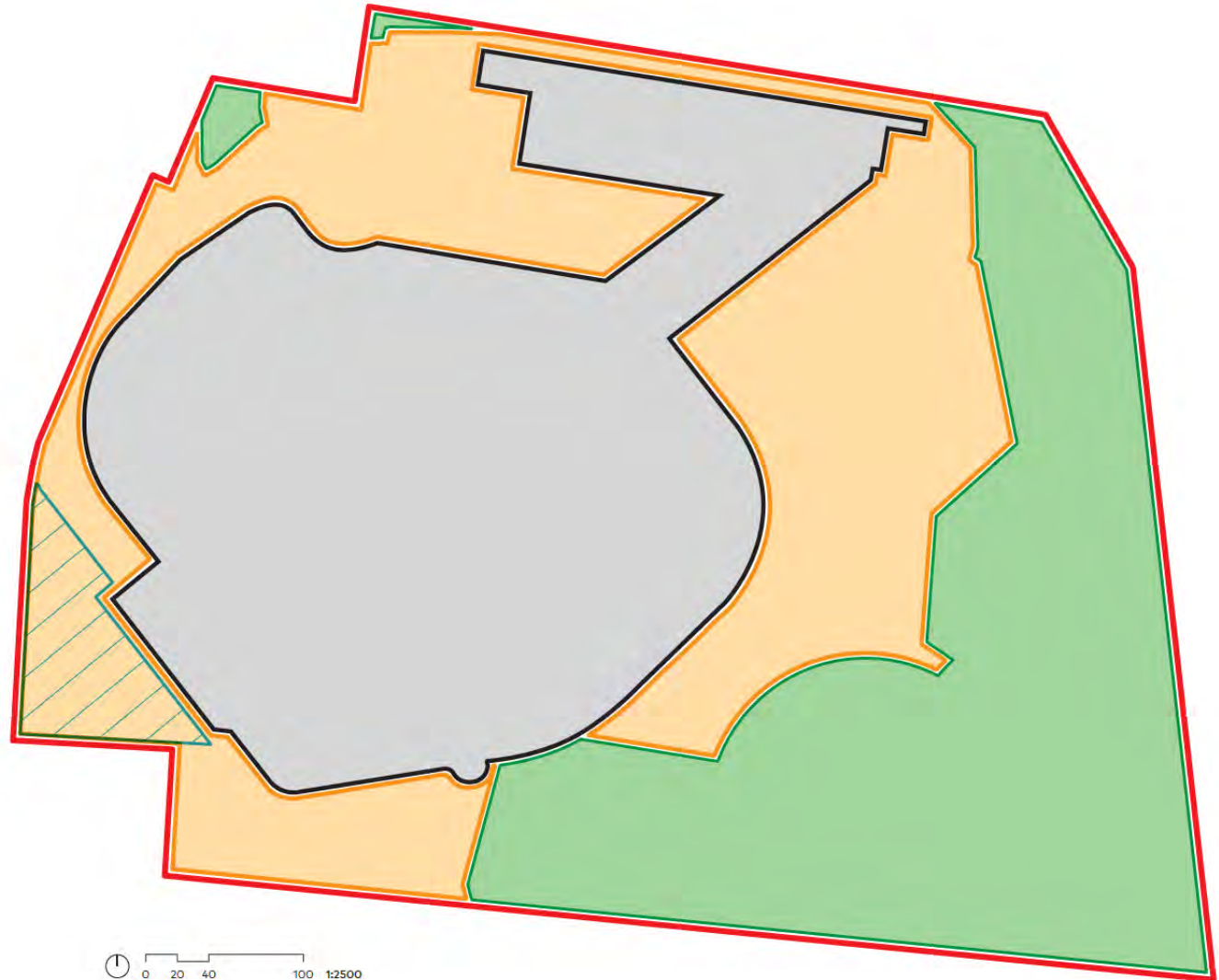
Summary of potential Project impacts

The Property boundary covers approximately 35ha of land that is expected to involve the following activities as per Project's Proposed Masterplan components received from Cox Architecture 15 October 2021 Drawing Number: A-11-22 (Plate 1) (Figure 1):

- Development Footprint (Figure 9): Approximately 15ha of land within the Property boundary supporting the extent of the Project design (based on design drawings for the Project received on 15/10/2021) and associated development requirements, including the community use area in the northern section.
- Canine and community use precinct (Figure 9): Approximately 10ha of land intended for a canine and community use precinct within the Property boundary.

- Vegetation Buffer Zone (Figure 9): Approximately 10ha of vegetation along the eastern, western and northern sections of the Property boundary that will be retained and protected for the Project.

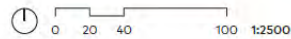
Plate 1. Property boundary including, Development Footprint, Canine and community use precinct and Vegetation Buffer Zone.



LEGEND

-  Greater Brisbane Greyhound Centre (GBGC)
-  Racing and Ancillary Facilities Precinct (including provision for potential future sports fields)
-  Canine and Community Use Precinct (including provision for community activities outside those shown on Proposed Master Plan)
-  Existing Vegetation Buffer
-  Potential Future Development Area

Note: This is an indicative concept plan and is intended to illustrate both the broad areas for potential complementary uses and activities, and how the racing and ancillary facilities could be positioned to achieve the desired outcomes for animal care and the racecourse. The boundaries between these areas are not fixed and are subject to refinement.



The Project's impact on environmental values are assessed below according to their categorisation as major ecological values, moderate ecological values and low ecological values with respect to the extents of the Development Footprint, Canine and community use precinct and Vegetation buffer zone within the Property boundary (Section 4 of this EnvAR) (Figure 9).

Development Footprint

The Development Footprint has been assessed as having known and high level disturbance for the Project as it will require vegetation clearing and ground disturbance to develop greyhound racing tracks, facilities, carparks and the northern community use area. The Development Footprint is located centrally within the Property boundary, primarily within previously disturbed lands, nonetheless the following impacts are expected to occur as a result of the Project.

Clearing and/or ground disturbance is expected to be required across the Development Footprint. The majority of the Development Footprint (13.3ha, ie. 88%) is located within previously disturbed or cleared land. Nonetheless, vegetation clearing and/or disturbances are proposed for the Project within areas supporting the following ecological values:

- **Major ecological values:** Up to 1.7ha (i.e. 4.86% within the Property boundary) of major ecological value land which comprises:
 - Matter of National Environmental Significance (MNES) Koala habitat that is considered to be critical to the survival of the Koala, scoring 8/10 for the *Environment Protection and Biodiversity Conservation Act 1999* Koala Referral Guidelines (DOE, 2014)
- Up to 0.25ha (i.e. 0.7% within the Property boundary) of major ecological value land which comprises:
 - Matter of State Environmental Significance (MSES) mapped High Risk area for protected plants
 - MSES mapped Core Koala habitat area within a Koala priority area. However, vegetation clearing for the Project has been minimised to include 0.05ha of this mapped Core Koala habitat only, which contains approximately 20 Non-juvenile Koala Habitat Trees (NJKHT) that is, Eucalypt species >10cm DBH
- Up to 1.46ha (i.e. 4% within the Property boundary) of major ecological value land within areas mapped as Preliminary regrowth which includes MNES and/or MSES threatened fauna habitat for Grey-headed Flying-fox and Collared Delma and includes an additional estimated 70 NJKHT
- **Moderate ecological values:** Up to 0.001ha (i.e. 0.002% within the Property boundary) of moderate ecological value land which comprises:
 - MSES Regulated vegetation that is mapped as High-value regrowth (Category C) containing Of Concern Regional Ecosystem (RE) 12.9-10.7
 - MSES mapped Essential Habitat for the Koala.
- Up to 0.23ha (i.e. 0.66% within the Property boundary) of MSES - Regulated vegetation (defined watercourse) within the bed and banks of a Watercourse
- Potential animal breeding places (including one incidental hollow recorded), potentially used by Least Concern and/or colonial breeding species
- **Low ecological values:** Low ecological value land which comprises:
 - Up to 4.8ha (i.e. 13.7% within the Property boundary) of a mapped Koala restoration area
 - Up to 10.46ha (i.e. 29% within the Property boundary) of habitat for a variety of Least Concern flora and fauna species within areas mapped as Preliminary regrowth and Disturbed grasslands

Disturbance (including direct and indirect impacts) for the Development Footprint is expected to be required for 15ha of land supporting the following ecological values:

- **Major ecological values:** potential indirect impacts in the vicinity of a potential MNES Threatened Ecological Community (TEC) Swamp Tea-tree Forest of Southeast Queensland, listed as Critically Endangered under the EPBC Act.
- **Low ecological values:** potential direct and indirect impacts are expected to occur as a result of the Development Footprint, including:
 - Ground disturbance including cut and fill is expected to occur within uncontrolled fill areas within the northern community use area (Plate 2)
 - Ground disturbance within a Fire ant biosecurity zone, and potential movement of fire ant carriers (such as soil or mulch) may occur
 - Indirect impacts to reservoirs and drainage lines such as altered hydrology, erosion and sedimentation are likely to occur
 - Disturbance is likely to promote the colonisation of new or established invasive flora and fauna species
 - Indirect impacts of noise, vibration and air quality are likely to occur to sensitive receptors and local fauna species.

Canine and community use precinct

The Canine and community use precinct is not expected to require tree clearing, however it is assessed as having potential and moderate level disturbance for the Project to accommodate GBGC and community use activities such as walking paths. Potential temporary laydown areas and construction facilities may also be required within this Canine and community use precinct during the construction phase. However, these laydown areas will be kept within existing cleared areas and away from sensitive environmental values.

The Canine and community use precinct includes 10ha of land and depending on the proposed activity, impacts have the potential to occur within areas supporting the following ecological values:

- **Major ecological values:** Up to 1ha (i.e. 2.85% within the Property boundary) of major ecological value land which comprises:
 - MNES Koala habitat that is considered to be critical to the survival of the Koala. To note, this land also includes a Koala priority area and NJKHT.
 - Potential animal breeding places, potentially used by Least Concern and/or colonial breeding species
 - MNES and/or MSES threatened fauna habitat for Grey-headed Flying-fox and Collared Delma within areas mapped as Preliminary regrowth
 - MNES and/or MSES potential threatened migratory species habitat within areas mapped as Preliminary regrowth
- Including up to 2ha (i.e. 5.7% within the Property boundary) of major ecological value land which includes:
 - MNES and/or MSES threatened migratory species habitat within areas mapped as Aquatic habitat
- **Moderate ecological values:** Up to 2.3ha (i.e. 6.5% within the Property boundary) of moderate ecological value land which comprises:
 - 0.3ha (i.e. 0.85% within the Property boundary) of MSES - Regulated vegetation (defined watercourse)
 - 2ha (i.e. 5.7% within the Property boundary) comprising reservoirs and drainage lines.
- **Low ecological values:** Including up to 10ha (i.e. 28.5% within the Property boundary) of low ecological value land which comprises:
 - A Koala restoration area

- Fauna habitat for a variety of Least Concern flora and fauna species within areas mapped as Aquatic habitat, Preliminary regrowth and Disturbed grasslands
- Ground disturbance within a Fire ant biosecurity zone, and potential movement of fire ant carriers (such as soil or mulch) may occur
- Foot/pedestrian traffic (including dog walking) has the potential to impact native flora and fauna species
- Disturbance is likely to promote the colonisation of new or established invasive flora and fauna species.

Indirect impacts for the Canine and community use precinct related to the potential moderate disturbance of up to 10ha of land and will include the following ecological values:

- **Major ecological values:** potential indirect impacts in the vicinity of a potential MNES Threatened Ecological Community (TEC) Swamp Tea-tree Forest of Southeast Queensland, listed as Critically Endangered under the EPBC Act.
- **Low ecological values:** Indirect impacts of noise, vibration and air quality are likely to occur to sensitive receptors and local fauna species.

Vegetation Buffer Zone

This section within the Property boundary will be retained and protected. Also, it is understood that no foot/pedestrian traffic (including dog walking) will occur within this section. As such, direct impacts as a result of the Project are expected to be unlikely or minor within this section. However, indirect impacts to sensitive receptors and local fauna species including alterations to hydrology, erosion/sedimentation, light, noise, vibration and air quality have the potential to occur.

Summary of recommendations and mitigations

Mitigation measures for the Project are recommended to follow the hierarchy of: avoid, minimise, mitigate, offset, to ensure that impacts resulting from the Project during design and construction phase are appropriately managed.

Section 5.2 of this EnvAR outlines that the placement and layout of the Development Footprint has avoided ecological constraints in a balanced manner in accordance with the requirements of other design components for the Project including ground level requirements (where cut and fill results in steep entrances and/ or retaining wall requirements) and safety requirements (in terms of road angles and turns).

In addition to the masterplan layout, design elements have also been modified and options assessed at a finer scale in order to avoid impacting on areas of mapped ecological values and avoid tree clearing. For example, a high level options assessment was undertaken for the Project to locate the access road in north-west to minimise tree clearing within Koala habitat, RQ purchased additional land to improve the operational efficiency of the masterplan layout and maintain a buffer to vegetation and fauna habitat and the orientation of different buildings has been changed to minimise impacts to vegetation and fauna habitat (pers. comm. Racing Queensland, 19 October 2021).

Section 5.3 of this EnvAR outlines recommendations for further assessment for the Project to assess environmental impacts and approval requirements, particularly for Threatened Ecological Communities (TEC), threatened flora (including requirements for additional approvals in relation to protected plants), threatened fauna (including Koalas), animal breeding places and soils.

The following measures to avoid and/or minimise the Project's impact on biodiversity and ecosystem function for the design phase have been recommended:

- Integrating Koala design into the Project design and masterplan:
 - Seeking opportunities to avoid and/or further minimise vegetation clearing and other impacts (such as road/track upgrades) within areas containing Koala habitat and NJKHT; and
 - Koala exclusion fencing will be installed to provide a Koala Exclusion Zone for the GBGC development and minimise the risk of Koala and human/greyhound interactions.
 - Addressing the requirements of the *Queensland Government Koala-sensitive Design Guideline – A guide to koala-sensitive design measures for planning and development activities* (DES, 2020). This includes identifying areas to retain and protect Koala habitat values, fauna friendly lighting, road design, Koala-friendly fencing.
- Employing measures to protect vegetation and protected plants including:
 - Further minimise the vegetation clearing footprint where possible;
 - Seeking opportunities to further avoid and/or minimise vegetation clearing and other impacts (such as road/track upgrades) within areas mapped as High Risk area for protected plants;
 - Seek opportunities to further avoid vegetation clearing and Project activities (such as access paths and/or foot traffic) within vegetation mapped as Category C (high value regrowth), Of Concern RE 12.9-10.7 and Essential Habitat;
 - Seek opportunities to further avoid clearing of active animal breeding places or a relevant low risk or high risk Species Management Program will be required;
 - Avoiding and suitably protecting all known locations of the endangered Swamp tea-tree by implementing and demarcating a 100m buffer;
- Include measures to discourage public access to vegetated areas outside the Development Footprint through signage, fencing and dense planting;
- Employ the stormwater catchment methodology presented in the Site Based Stormwater Management Plan (prepared by ADG Engineers) which is based on retention of the pre-developed flow regime, to ensure hydrology changes do not adversely impact on Watercourse, reservoirs and Swamp tea-tree habitat; and
- Avoid and/or minimise impacts on the bed and banks of the Watercourse and associated reservoirs (which include fauna habitat) as far as practical.

Section 5.3.2 of this EnvAR outlines proposed pre-construction and construction impact management solutions to minimise impacts on ecosystem function and biodiversity a result of the Project, which are addressed through the:

- Preparation, implementation and audit of Construction Environmental Management Plan;
- Establishment and demarcation of “no go zones” to ensure clearing is restricted to the nominated clearing footprint only;
- A licensed fauna spotter/catcher should be engaged prior to and during any clearing of woody vegetation;
- A Koala spotter should be engaged prior to and during any clearing of woody vegetation to ensure that legislative obligations (under the *Nature Conservation (Koala) Conservation Plan 2017*) with respect to protection of Koalas are met;
- Clearing that will result in the disturbance / removal / destruction of animal breeding places, including hollows and nests, should be avoided as far as practical. Any potential animal breeding places (in particular, the habitat hollow within the Development Footprint) that will require removal for the Project shall be checked by the fauna spotter/catcher and approvals secured prior to removal where required;

- The Project is located in Fire ant biosecurity zone 1 and is required to adhere to Fire ant soil movement guidelines, in particular the National Red Imported Fire Ant Eradication Program (NRIFAEP) Soil Movement Guideline V1.0 27/05/2020 (DAF, 2020).
- Cleared vegetation is to be reused on or off premises as far as practical and in accordance with biosecurity protocols and zones eg. Fire Ant Biosecurity Zones.

Revegetation and offsets

Section 5.4 of this EnvAR outlines the provision of revegetation and offsets for the Project in accordance with the mitigation hierarchy. The Project will include the provision of revegetation and offsets for vegetation that is lost or disturbed during construction and will include the provision of landscaping that helps to control weeds and clears invasive species from the Property boundary. In addition, the revegetation would include the provision of nesting boxes to mitigate the loss of fauna habitat trees and/or animal breeding places (i.e. hollows) requiring removal for the Project, as required.

Glossary and list of abbreviations

Term or abbreviation	Definition
BGRC	Brisbane Greyhound Racing Club
Canine and community use precinct	Approximately 10ha within the Property boundary assessed as having potential moderate disturbance for the Project, including the Canine and community use precinct within the Property boundary (Plate 2)
DAWE	Commonwealth Department of Agriculture, Water and Environment (formally DoE)
DBC	Detailed Business Case
DBH	Diameter at Breast Height
DES	Department of Environment and Science (Queensland)
Development Footprint	Approximately 15ha within the Property boundary assessed as having known high disturbance for the Project design (based on mastepan for the Project received on 15/10/2021), including the all racing and ancillary facilities (one turn Greyhound racing track with approximate 70m radius, two turn Greyhound racing tracks with approximate 54m radius, one straight Greyhound racing track approximately 350m in length, public grandstands and approximately 415 car park bays) and community use area within the northern section of the Property boundary, as shown in Figure 1.
Disturbed grassland	Vegetation identified within the Property boundary that is non remnant (Category X) vegetation that is comprised of predominantly exotic grass species
DNRME	Department of Natural Resources, Mines and Energy (Queensland) (former)
DoR	Department of Resources (Queensland) (formerly the Department of Natural Resources, Mines and Energy)
EcoAR	Ecological Assessment Report (Cardno, April 2019)
EP Act	<i>Environmental Protection Act 1994</i> (Queensland)
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
GBGC	Greater Brisbane Greyhound Centre
ha	Hectares
High value regrowth vegetation	Vegetation located on freehold land, indigenous land, or land subject of a lease issued under the <i>Land Act 1994</i> for agriculture or grazing purposes or an occupation licence under that Act; and b) in an area that has not been cleared (other than for relevant clearing activities) for at least 15 years, if the area is— i. an endangered regional ecosystem; or ii. an of concern regional ecosystem; or iii. a least concern regional ecosystem.
IGRC	Ipswich Greyhound Racing Centre
km	Kilometres
Koala plan	<i>Nature Conservation (Koala Conservation) Plan 2017</i> (Queensland)
Koala SPRP	<i>South East Queensland Koala Conservation State Planning Regulatory Provisions</i> (Queensland) - repealed
LGA	Local Government Area
Local Planning Scheme	Ipswich Planning Scheme 2006

Term or abbreviation	Definition
Local population	The population of a particular species that occurs in the locality
LoO	Likelihood of occurrence
m	Metres
MLES	Matters of Local Environmental Significance, according to the Local Planning Scheme
MNES	Matters of National Environmental Significance, according to the <i>Environment Protection and Biodiversity Conservation Act 1999</i>
MSES	Matters of State Environmental Significance, according to the <i>Nature Conservation Act 1992</i>
NC Act	<i>Nature Conservation Act 1992</i> (Queensland)
NJKHT	Non Juvenile Koala Habitat Tree
Non remnant vegetation	Generally, vegetation which is disturbed and does not form a predominant canopy
NRIFAEP	National Red Imported Fire Ant Eradication Program
Offsets Act	<i>Environmental Offsets Act 2014</i> (Queensland)
Planning Act	<i>Planning Act 2016</i> (Queensland)
Planning Reg	<i>Planning Regulation 2017</i> (Queensland)
PMST	Protected Matters Search Tool
Preliminary regrowth	Vegetation identified within the Property boundary that is non-remnant (Category X) vegetation and contains a variety of native and introduced species, which were sparsely scattered
Property boundary	Includes approximately 35 ha of land within and adjacent to the proposed Project, as shown in Figure 1.
RE	Regional Ecosystem, regulated under the <i>Vegetation Management Act 1999</i>
Remnant vegetation	The definition of remnant vegetation under the VM Act is vegetation— <ul style="list-style-type: none"> a) that is— <ul style="list-style-type: none"> (i) an endangered regional ecosystem; or (ii) an of concern regional ecosystem; or (iii) a least concern regional ecosystem; and b) forming the predominant canopy of the vegetation— <ul style="list-style-type: none"> (i) covering more than 50% of the undisturbed predominant canopy; and (ii) averaging more than 70% of the vegetation’s undisturbed height; and and composed of species characteristic of the vegetation’s undisturbed predominant canopy.
RQ	Racing Queensland
SARA	State Assessment and Referral Agency
SMP	Species Management Program
SPRP	State Planning Regulatory Provisions
Sqm	Square metres
Threatened Ecological Community (TEC)	An ecological community (biodiversity, landscape/seascape, habitat qualities and ecosystem services) that naturally occur together and are listed as Critically Endangered, Endangered and Vulnerable under the EPBC Act.

Term or abbreviation	Definition
Threatened species	Flora and fauna listed as Endangered, Vulnerable or Critically Endangered under the schedules of the EPBC Act, and listed as Endangered, Vulnerable or Near Threatened under the schedules of NC Act.
Vegetation Buffer Zone	Approximately 10ha of vegetation on the eastern, western and northern sections of the Property boundary that is proposed to be retained for the Project, as shown in Plate 2
VM Act	<i>Vegetation Management Act 1999</i> (Queensland)

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1. Introduction

1.1 Project background

Racing Queensland (RQ) are proposing to undertake the GBGC development located at 40-76 Ipswich-Boonah Road, Purga Queensland (the Project).

The primary purpose of the proposed GBGC development is to establish a replacement venue for the two current major racing clubs in South East Queensland, namely the Brisbane Greyhound Racing Club (BGRC) at Albion Park and the Ipswich Greyhound Racing Centre (IGRC) at the Ipswich Showgrounds. The GBGC will provide a new home for the BGRC and the IGRC, incorporating updated track design and racing safety standards.

An Ecological Assessment Report (EcoAR) was undertaken for the Project by Cardno in April 2019. The EcoAR was conducted with particular attention to the Regulated vegetation communities under the *Vegetation Management Act 1999* (VM Act) and Koala (*Phascolarctus cinereus*) habitat mapped under the Koala Conservation in South East Queensland State Planning Regulatory Provisions (SPRP).

Since the Cardno EcoAR was undertaken there have been changes to the Queensland regulatory system (particularly relating to Koalas) resulting in the requirement to provide an updated assessment and capture changes associated with the proposed development. Therefore, this Environmental Assessment Report (EAR) has been prepared by Niche to address the following:

- the amended Project scope and any outstanding ecological values and ecological assessment required for the Project (including desktop assessment results and field assessment findings);
- updated legislative triggers associated with changes to legislation and environmental/ecological mapping; and
- a broader scope of environmental values requiring assessment.

Please note, Cardno’s EcoAR was referenced and utilised to contribute to the overall field survey effort of the ecological assessment purposes only, however the desktop mapping and potential development options assessed within Cardno’s EcoAR are no longer relevant to the current Project design options and therefore it has not been considered further.

1.2 Property boundary

1.2.1 Location details

The Property boundary for the Project includes approximately 35ha of land located at 40-76 Ipswich Boonah Road, Purga, and includes Lot 1 on SP193446, Lot 2 on SP193446 and Lot 3 on RP127928 (Figure 1). The land use description and land tenure of the two land parcels that form the Property boundary are provided in Table 1.

Table 1. Land parcels and land use description for the Project.

Land parcel	Land use description	Land tenure
Lot 1 on SP193446	Sporting facility (Swifts Rugby League Club home grounds, rugby field and amenities), waterbody and vegetated areas	Freehold
Lot 2 on SP193446	Rural residential land, waterbodies and vegetated areas	Freehold

Lot 3 on RP127928	Private dwelling and vegetated areas	Freehold
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1.2.2 Landscape and context

The Project is located within the suburb of Purga in the Ipswich City Council (ICC) Local Government Area (LGA) where surrounding land use is dominated by rural land predominantly used for residential and agricultural purposes (Figure 1). The Yamanto centre is approximately 600m north of the Property boundary and supports low density residential and commercial land-uses. The broader landscape, particularly to the southeast of the Property boundary, supports extensive remnant vegetation and undisturbed habitat.

The Project is located in the South East Queensland bioregion and the Moreton Basin subregion (refer to Annex 1 – Desktop Searches – Vegetation Management Report 09/09/2021).

1.2.3 Previous and existing use

The Property boundary has been subject to previous disturbances related to the current land-uses of a sporting facility and rural residential land. The western extent of the Property boundary has been heavily disturbed, and the centre of Lot 2 on SP193446 contains a recreational sporting facility consisting of a regularly mowed grass field, related ancillary structures, surrounding fencing and associated viewing facilities. Lot 1 on SP193446 contains a residential property within the central portion of the property.

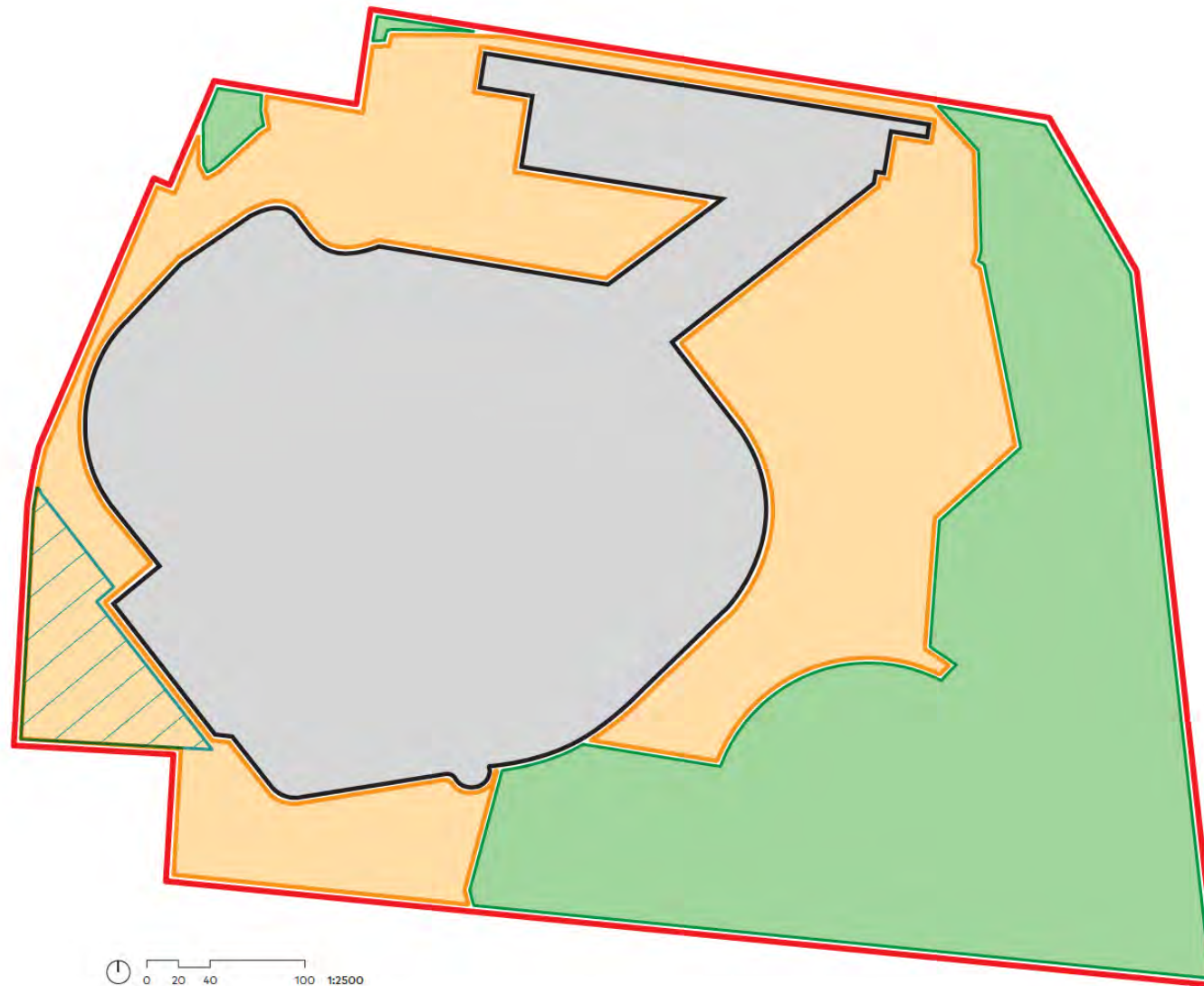
1.3 Overview of proposed development

1.3.1 Project design components

The Property boundary covers approximately 35ha of land and is expected to involve the following activities as per Project design components (Plate 2) (Figure 1) as per the design drawings for the Project received from Cox Architecture on 15/10/2021 Drawing Number: A-11-22. The Property boundary comprises of the following areas that were included in the desktop and field assessment:

- Development Footprint (Figure 1): Approximately 15ha within the Property boundary assessed as having known and high disturbance for the Project (such as vegetation clearing), including all indicative racing and ancillary facilities (one turn Greyhound racing track with approximate 70m radius, two turn Greyhound racing tracks with approximate 54m radius, one straight Greyhound racing track approximately 350m in length, public grandstands and approximately 415 car park bays) (Plate 2 – grey area plus additional community use area in the northern section as shown on Figure 1)
- Canine and community use precinct: Approximately 10ha within the Property boundary assessed as having potential and moderate disturbance for the Project (such as walking paths and other community uses), including the canine and community use precinct within the Property boundary (Plate 2 – orange area)
- Vegetation Buffer Zone: Approximately 10ha of vegetation on the eastern, western and northern sections of the Property boundary that is to be retained and protected for the Project (Plate 2 – green area).

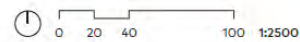
Plate 2. Proposed design components for the Project.



LEGEND

- Greater Brisbane Greyhound Centre (GBGC)
- Racing and Ancillary Facilities Precinct (including provision for potential future sports fields)
- Canine and Community Use Precinct (including provision for community activities outside those shown on Proposed Master Plan)
- Existing Vegetation Buffer
- Potential Future Development Area

Note: This is an indicative concept plan and is intended to illustrate both the broad areas for potential complementary uses and activities, and how the racing and ancillary facilities could be positioned to achieve the desired outcomes for animal care and the racecourse. The boundaries between these areas are not fixed and are subject to refinement.



<p>Project: GBGC</p>	<p>Drawing Title: Ministerial Infrastructure Designation - Precinct Master Plan</p>	<p>Drawing Number: A-MID-11-01</p>	<p>Date: 12/10/21</p>	<p>Scale: 1 : 2500 @ A3</p>	
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Temporary laydown and stockpiles areas have not yet been established for the Project but will be coordinated to occur in previously cleared areas and avoid sensitive ecological areas and will be managed in accordance with the relevant environmental legislation such as the *Environmental Protection Act 1994*.

Lands within the Property boundary are primarily zoned as Rural B in the northern, southern and eastern sections. A small southwestern portion within the Property boundary is zoned as Special Uses (ICC, 2016). The Rural B sections supports vegetated natural areas that is mapped as remnant and high value regrowth vegetation.

1.3.2 Surrounding areas and sensitive receptors

Desktop results

The Property boundary is surrounded to the north and east by housing estates and to the south and west by agricultural properties and private dwellings¹. The Property boundary is surrounded by the following roads and highways (Queensland Globe, 2021):

- Cunningham Highway to the north
- Centenary Highway to the east
- Ipswich Boonah Road to the west.

A desktop review did not identify any community matters of interest occurring adjacent (within 500m) to the Project area. The desktop review identified one sensitive receptor identified as occurring within the Property boundary, which is the Swifts Ruby League Club. Two sensitive receptors are identified as occurring directly adjacent (within 100m) to the Project area. Table 2 outlines the 12 locations of sensitive receptors occurring adjacent to the Property boundary comprised of private dwellings and a Swifts Rugby League Club using aerial imagery from 4 May 2020 (Queensland Globe, 2021).

Table 2. List of sensitive receptors adjacent (within 500m) to Property boundary.

Lot and plan	Sensitive receptor type	Coordinates	Distance to Property boundary
Lot 2 on SP193446	Swifts Rugby League Club	-27.6690, 152.7460	Within western section of Property boundary
Lot 3 on RP127928	Private dwelling	-27.6688,152.7389	Adjacent 100m west of the Property boundary
Lot 1 on SP193446	Private dwelling	-27.6707, 152.7392	Adjacent 100m south of the Property boundary
Lot 1 on RP30141	Private dwelling	-27.6710, 152.7376	Adjacent 100m southwest of the Property boundary
Lot 2 on RP30141	Private dwelling	-27.6710, 152.7369	Adjacent 100m southwest of the Property boundary
Lot 154 on SP193446	Private dwelling	-27.6731, 152.7405	Adjacent 400m south of the Property boundary
Lot 4 on SP110415	Private dwelling	-27.6734, 152.7415	Adjacent 400m south of the Property boundary

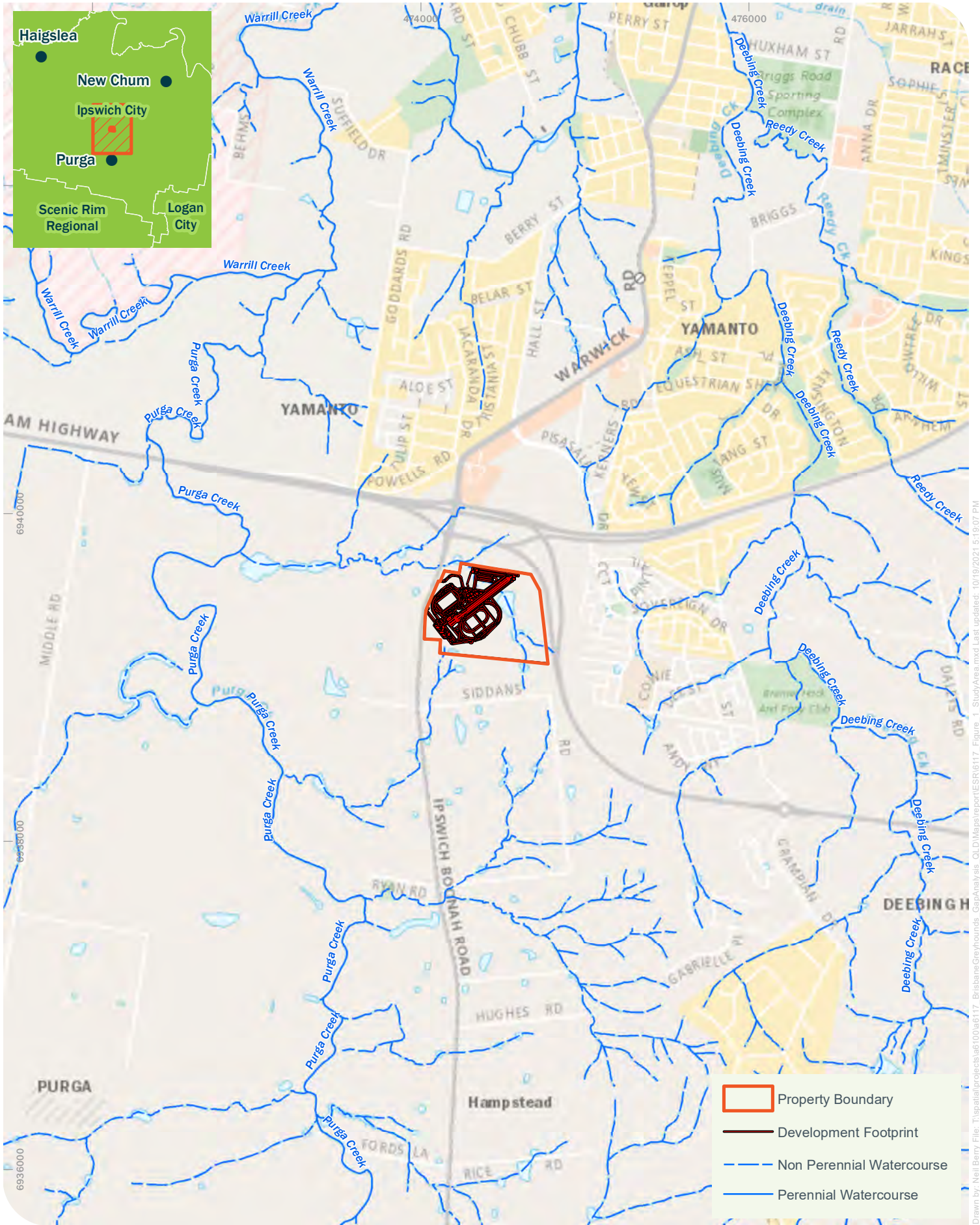
¹ Including house, townhouse, unit, reformatory institution, caravan park or retirement village (TMR, 2016).

Lot and plan	Sensitive receptor type	Coordinates	Distance to Property boundary
Lot 3 on SP110415	Private dwelling	-27.6736, 152.7388	Adjacent 500m southwest of the Property boundary
Lot 2 on RP106091	Private dwelling	-27.6713, 152.7353	Adjacent 500m southwest of the Property boundary
Lot 1 on RP106091	Private dwelling	-27.6713, 152.7336	Adjacent 500m southwest of the Property boundary
Lot 1 on RP186066	Private dwelling	-27.6649, 152.7346	Adjacent 500m west of the Property boundary
Multiple lot and plans	Approximately 50 x private dwellings within housing estate	-27.6690, 152.7460	Adjacent 500-650m east of Property boundary

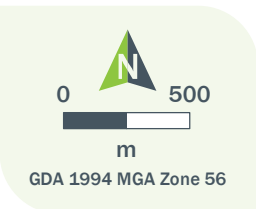
1.4 Purpose of report

The purpose of this EAR is to support the application for Ministerial Infrastructure Designation (MID) for the GBGC development and include the following information:

- The results of desktop and field assessments identifying environmental and ecological values applicable to the Project;
- Outline proposed environmental and ecological opportunities and constraints for the Project;
- Identify potential threatening processes and impacts to environmental values as a result of the Project;
- Recommend mitigation measures to manage any potential impacts to identified environmental values; and
- Recommend any additional assessment and/or approvals requirements.



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Niche PM: Lisa Carter
 Niche Proj. #: 6117
 Client: ADG

**Project Area and Location Map
 Greater Brisbane Greyhounds Club**

Figure 1

2. Assessment methodology

2.1 Desktop assessment

2.1.1 Review of previous assessment

Based on the EcoAR, Cardno undertook a desktop assessment of publicly available mapping, database records and a field assessment (1 April 2019). The field assessment undertaken by Cardno included the following survey effort within the Project:

- Seven quaternary plots generally in accordance with the Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities (Neldner et al. 2017) to ground-truth desktop mapping;
- Targeted searches for potentially occurring threatened flora species (identified during the desktop assessment) in areas where suitable habitat was identified;
- Two Variable Area Transect (VAT) surveys were undertaken within each vegetation community to measure the density of non-juvenile Koala habitat trees (NJKHT);
- Recording of animal breeding places, that is any place (e.g. a bower, burrow, cave, hollow, nest or other thing) that is commonly used by the animal to incubate or rear the animal's offspring;
- Recording of any biosecurity matters eg. invasive flora species; and
- Incidental fauna searches were conducted and all fauna species observed were recorded.

Niche undertook a review of the Cardno EcoAR and performed an Environmental Gap Analysis to compare and identify gaps from the previous assessment (including amendments to the Project scope, proposed activities, identified environmental values and applicable legislative triggers). Niche has incorporated the results of the Cardno field assessment and vegetation mapping within the Property boundary into this assessment where the results remain current and relevant².

Cardno's EcoAR was referenced and utilised to contribute to the overall field survey effort of the ecological assessment purposes only, however the desktop mapping and potential development options assessed within Cardno's EcoAR are no longer relevant to the current Project design options and therefore it has not been considered further.

2.1.2 Database and mapping review

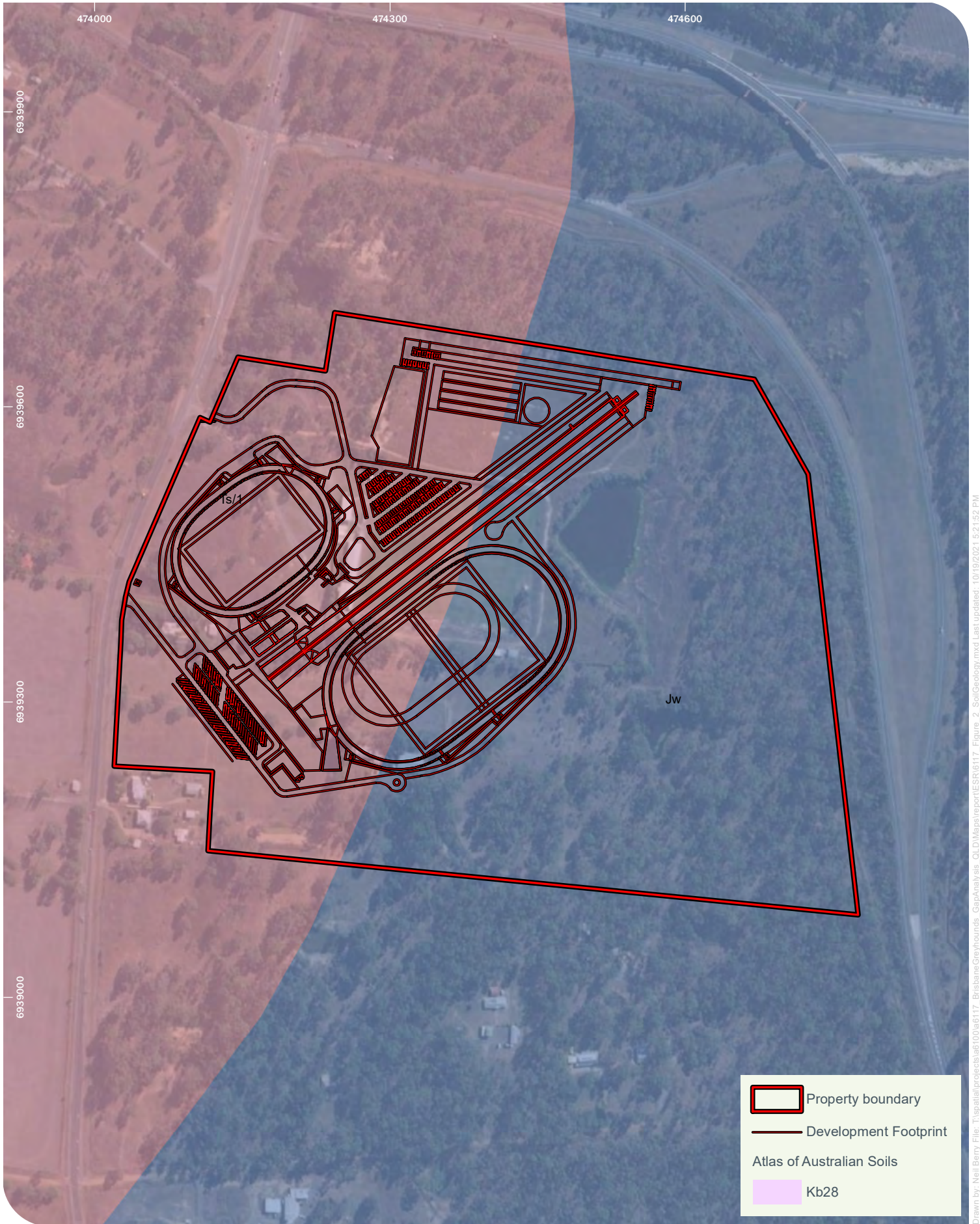
The desktop assessment also included a review of up-to-date databases, spatial datasets and mapping resources relevant to the assessment of environmental values for the Property boundary. The review included the following sources:

- Commonwealth Department of Agriculture, Water and Environment (DAWE) Protected Matters Search Tool (PMST) (coordinates: -27.6693, 152.7403 plus 5km buffer, accessed 29/07/2021);
- Queensland Department of Environment and Science (DES) Wildlife Online database (coordinates: -27.6693 152.7403 plus 5km buffer, accessed 29/07/2021);
- Queensland Department of Resources (DoR) Vegetation Management Property Report for Lot 2 on SP193446, containing Regulated Vegetation Management Map, Vegetation Management Supporting Map and Essential Habitat Map (accessed 9/09/2021) (DOR, 2021);

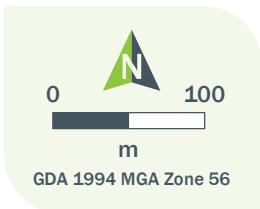
² Note. Cardno's spatial data has been georeferenced from supplied .pdf maps. Spatial inaccuracies may occur in Niche's figures due to this georeferencing method.

- Vegetation management regulated vegetation management map - version 5.0 (accessed 17/09/2021) (DoR, 2021);
- Department of Environment and Science (DES) Flora Survey Trigger Map for Clearing Protected Plants in Queensland - Version 8.0 (accessed 4/10/2021) (DES, 2021);
- Atlas of Living Australia database (accessed 16/09/2021);
- Queensland Globe spatial data including the Watercourse Identification Map, Queensland Waterways for Waterway Barrier Works, Contours, WildNet Wildlife database, South East Queensland Koala Conservation Strategy 2019-2024 mapping layers, Atlas of Australian Soils, Dominant Soil Orders of Australia, Acid Sulfate Soils and Australian Pest Distribution Survey (APDS) QSpatial dataset (Queensland Globe, 2021);
- Koala Hospital Data (KoalaBase) April 1996-December 2019 (DES, 2021);
- Map of Queensland wetland environmental values (The State of Queensland, 2021);

The desktop search results are provided in Annex 1 – Desktop Search Results.



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Geology & Soils Map
Greater Brisbane Greyhounds Club

Niche PM: Lisa Carter
Niche Proj. #: 6117
Client: ADG

Figure 2

2.2 Field Assessment

A one-day field assessment was carried out within the Property boundary in August 2021 by three Niche ecologists. The scope of works for the field assessment did not include a detailed targeted ecological survey and was limited to field verification of the existing available data identified in the desktop assessment, in particular validation of the results presented in the Cardno EcoAR, and gathering additional information to support this assessment. Niche undertook the following field assessments within the Property boundary during the one-day field assessment (Figure 3):

- Three quaternary vegetation assessments, in accordance with *Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland Version 5.1* (Neldner et al, 2020);
- Two targeted flora meander surveys, in accordance with *Protected Plants – Flora Survey Guidelines* (DES, 2020);
- Two Koala Spot Assessment Technique (SAT) surveys, in accordance with *The Spot Assessment Technique: A tool for determining localised levels of habitat use by Koalas Phascolarctos cinereus* (Phillips & Callaghan, 2011);
- Fauna habitat assessment and incidental identification of key habitat features, including animal breeding places;
- Assessment of the presence of potential habitat for any State or Commonwealth listed Threatened species or Threatened Ecological Communities;
- Identification of any waterways and wetlands;
- Location of biosecurity matters and public amenity matters (such as sensitive receptors or community matters of interest [CMoI]); and
- Opportunistic fauna sightings.

2.2.1 Survey timing and justification

The timing of the field assessment (10 August 2021) is considered ideal for conducting ecological surveys (except for one threatened species outlined within Section 3.5 – Flora) in South-east Queensland due to the prevalence of spring flowering plants and increased animal activity as the weather warms. The average Ipswich temperature ranged from 6.2 -22.9C during August 2021 and the average minimum temperature was generally increasing 7 days prior to field assessment (data obtained from Ipswich bureau station: 04101) (BOM, 2021). The Property boundary received rainfall prior to field assessment, where July 2021 recorded 45 mm of total rainfall, and rainfall occurred 14 days, 7 days and 1 day prior to field assessment (BOM, 2021).

2.2.2 Survey permits

All field assessment and survey for this EAR was conducted under Niche’s existing ecological survey permits, in particular:

- Queensland Animal Ethics Approval for Fauna surveys carried out for environmental impact assessments and other wildlife surveys: AEC Ref. CA 2019/09/1322 (Valid to 14 September 2022); and
- Queensland Scientific Purposes Permit Number WA0021993 (Valid to 1 March 2025).

2.2.3 Survey team qualifications

The ecological field assessments for the Project were undertaken by three suitably qualified and experienced ecologists as detailed in Table 3.

Table 3. Niche personnel, qualifications and experience in relation to the Project.

Niche Personnel	Relevant experience to Project
Lisa Carter Senior Ecologist BSc, MSc, GradDip (Ecology)	Lisa is an experienced field scientist and Suitably Qualified Person under the Flora Survey Guidelines (DES, 2020). Lisa has significant expertise in environmental assessments and ecological surveys. She has undertaken a range of ecological (flora and fauna) impact assessments, environmental management plans, environmental approvals and qualitative risk assessments for a variety of projects, throughout QLD, WA and NSW.
Barry Patrick Associate – Ecology BSc, MSc	Barry has over 14 years’ experience in consulting and has worked across a range of sectors including energy, transport, industry, water, utilities, residential, mining, tourism and conservation. He has strong expertise in the areas of botany, impact assessment, biodiversity offsets, habitat restoration, and threatened species.
Alana Homewood Ecology Consultant BSc, MEnvMgmt	Alana is an ecologist with expertise in environmental assessment, including vegetation condition assessment and fauna habitat identification. She has a focus on botany, with a background in bush regeneration and restoration ecology. Alana has extensive experience planning for and managing environmental assessment and rehabilitation projects. She has prepared management plans and also implemented the required actions giving her an in-depth understanding whole of cycle environmental management.

2.3 Likelihood of occurrence assessment

A likelihood of occurrence assessment was undertaken for all species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Nature Conservation Act 1992* (NC Act) (Threatened species) identified by the desktop assessment within 5km of the Property boundary (refer to Annex 2 – Likelihood of Occurrence Assessment). Please note, due to the nature and extent of expected impacts for the Project, a likelihood of occurrence assessment has been completed for the entire Property boundary for all threatened species. Each species was assessed based on the criteria listed in Table 4.

Table 4. Criteria for assessing the likelihood of species occurrence

Likelihood of occurrence	Criteria
High	Recorded within and/or surrounding (within 5km) the Property boundary AND Suitable habitat is present within the Property boundary
Moderate	No records within and/or surrounding (within 5km) the Property boundary AND Limited suitable habitat is present within the Property boundary
Low	No records within and/or surrounding (within 5km) the Property boundary AND No suitable habitat is present within or immediately adjacent to the Property boundary
Transient (fauna only)	Habitat within the Property boundary is considered marginal for the species AND Species is highly mobile and known to occasionally appear in areas away from known population centres (usually birds). Species unlikely to permanently establish.

2.3.1 Limitations and assumptions

The content of this report, including the assessment of project impacts, is based on information available at the time the report was prepared. Flora and fauna records were obtained from:

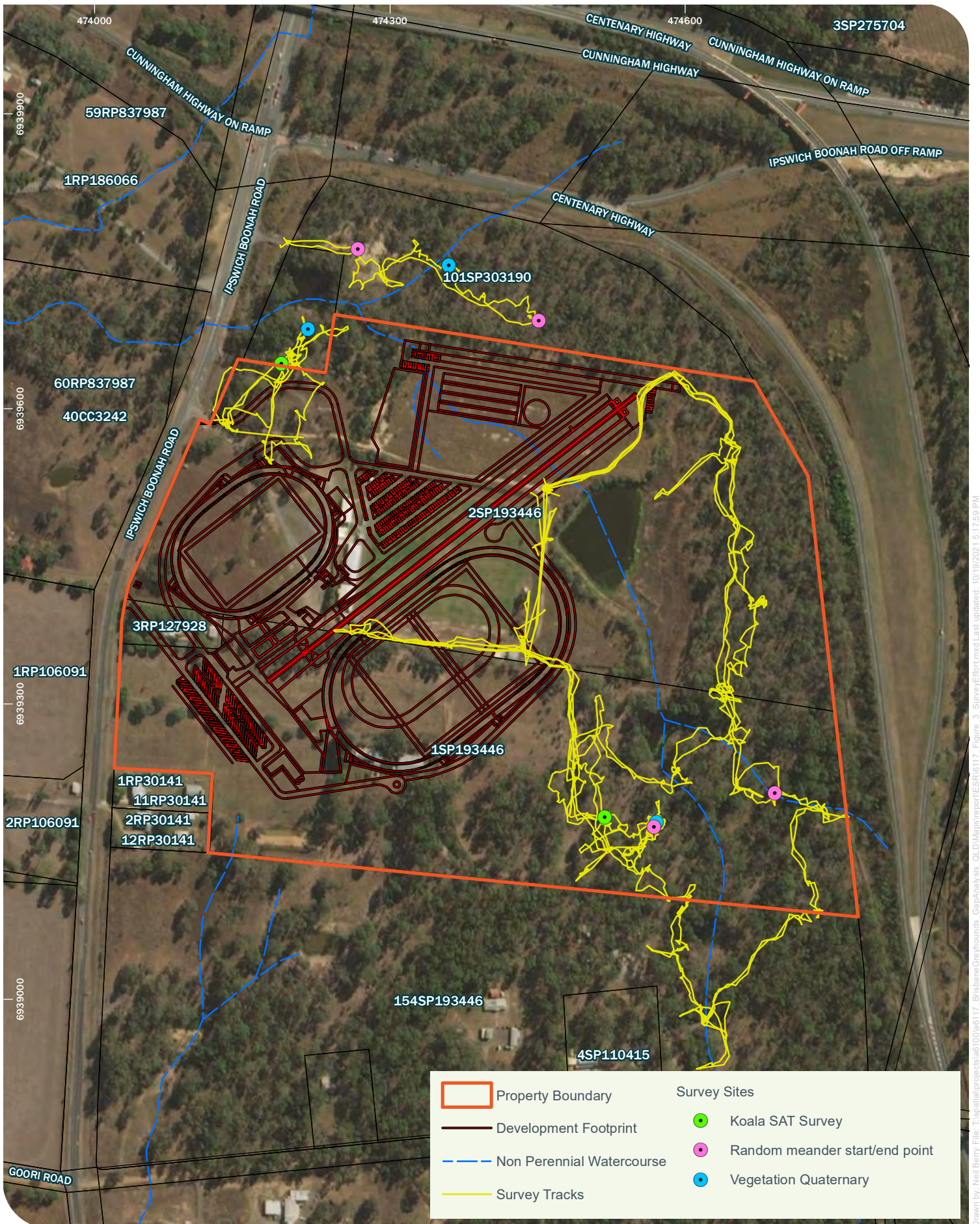
- Wildlife Online;
- EPBC Act PMST;
- DES KoalaBase; and
- Atlas of Living Australia.








Information from Cardno's EcoAR (2019) was also incorporated in this report, including preliminary vegetation mapping, fauna habitat types, fauna habitat features, field verified water features, and invasive flora species for the Project. Cardno's locations of environmental values and constraints within the Development Footprint was georeferenced from PDF maps, however spatial inaccuracies may occur due to this data transformation method³.

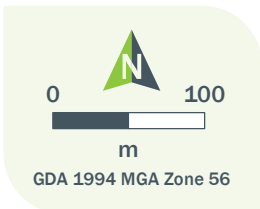
Tree survey data for Koala habitat tree and potential offset calculations for the Project were based on data provided by Cox Architecture. The Koala habitat tree and offset calculations is an estimate only for the purposes of this assessment, and assumes that the tree survey data provided by Cox Architecture captures a comprehensive and accurate coverage of the trees within the Property boundary with a DBH >10cm.

Conclusions and data presented in this report are based upon data acquired for the Development Footprint (based on masterplan for the Project received on 15/10/2021), a desktop assessment and a one day field assessment. Apart from threatened flora searches and two Koala SAT surveys, no other targeted field surveys (i.e. fauna trapping) were undertaken. Consequently, a precautionary approach has been taken with the assessment of the presence (or otherwise) of threatened fauna species and their habitats.

³ While every care has been taken to ensure the accuracy of this abovementioned data, Niche makes no statements regarding the reliability or completeness of this data.



 Property Boundary	Survey Sites
 Development Footprint	 Koala SAT Survey
 Non Perennial Watercourse	 Random meander start/end point
 Survey Tracks	 Vegetation Quaternary



Survey Effort Map
Greater Brisbane Greyhounds Club

Niche PM: Lisa Carter
Niche Proj. #: 6117
Client: ADG

Figure 3

World Imagery: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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3. Existing environmental values

3.1 Geology and soils

Desktop results

The Development Footprint is located between approximately 40 and 60 metres AHD and is not located within a mapped Acid Sulfate Soil area (Queensland Globe, 2021).

The Atlas of Australian Soils and Isbell's (1992) Soil Classification System describes the land primarily as vertosols, which consists of low hilly terrain on basalts and sedimentary rocks (DES, 2019; Queensland Government, 2021) (Figure 2). Chief soils within the Property boundary are moderate and shallow forms of cracking clays on the slopes (Code: Kb28) (Queensland Government, 2021). Sodosols are mapped within the eastern section of the Property boundary (DES, 2019). Sodosols are an indicator of potentially sodic soils, which are prone to dispersion leading to erosion and scouring (ASC, 2021).

The land zones supported by the Property boundary are predominantly land zone 9-10 (fine grained sedimentary rocks – sandstone ranges) with subdominant land zone 3 (recent Quaternary alluvial systems) in the south-west corner of the Property boundary (refer to Annex 1 – Desktop Searches – Vegetation Management Report).

Field results

The field assessment identified minor areas of erosion and scouring outside and to the east of the Development Footprint (Plate 3). This was primarily identified within mapped sodosols (Isbell, 1992) containing remnant vegetation and drainage lines outside and approximately 300m east of the Development Footprint (Figure 2).

Plate 3. Minor erosion and scouring identified within the eastern section of the Property boundary.



3.2 Water

3.2.1 Watercourses

Desktop results

Cardno (2019) identified that the northeastern extent of the Development Footprint intersects one Stream Order 1 watercourse (Figure 4), as shown on the Regulated Vegetation Management Map under the Queensland *Vegetation Management Act 1999* (VM Act). The VM Act watercourse within the Development Footprint has been modified into a northern and a southern reservoir, located outside to the east of the Development Footprint. An additional reservoir outside the flow path of the VM Act watercourse is located outside and to the south of the Property boundary (Cardno, 2019). The extent of the on-ground VM Act watercourse and associated drainage lines was mapped as part of the Cardno EcoAR assessment and the locations are shown on Figure 4.

Further review of Queensland Globe spatial data shows the following additional water mapping for the Project (Figure 4) (Refer to Annex 1 – Desktop Search Results – Vegetation Management Property Report):

- “Unmapped” watercourse, defined by the *Water Act 2000* (Water Act) and mapped within the same location as the VM Act watercourse (hereafter referred to as Watercourse) and intersecting the Development Footprint;
- One reservoir located outside and to the northeast of the Property boundary;
- One reservoir located outside the Development Footprint and within the southern section of the Canine and community use precinct;
- Matter of State Environmental Significance (MSES) - Regulated vegetation (defined watercourse), regulated by the VM Act, mapped within the same location as the VM Act Watercourse and intersecting the Development Footprint.

Field results

The field assessment confirmed the presence of reservoirs (i.e. mapped reservoirs) along the Watercourse and associated drainage lines as mapped by Cardno in the EcoAR (Figure 4) (Plate 4). Correspondence with the Queensland Department of Regional Development, Manufacturing and Water (DRDMW) on 30 September 2021 has confirmed that this Watercourse is considered drainage for the purposes of the Water Act (Refer to Annex 3 – Communication with Government Departments). As such, permit and notification processes under the Water Act (such as a Riverine Protection Permit) are not required for the Project.

Plate 4. Southern reservoir occurring along mapped Watercourse.



At the time of the field assessment, the northern and southern reservoirs present to the east of the Development Footprint were observed to have standing water, however the associated drainage lines were generally observed to be dry with exception of some minor puddling (Plate 5).

Plate 5. Drainage lines associated with reservoirs within the Canine and community use precinct were generally observed to be dry.



An additional constructed reservoir which was not recorded by Cardno or Queensland Globe was observed during the Niche field assessment in the far east and outside the Development Footprint (Plate 6).

Plate 6. Constructed reservoir within the far east of the Development Footprint.



3.2.2 Queensland waterways for waterway barrier works

The Watercourse intersecting the Development Footprint is not a mapped Queensland Waterway for Waterway Barrier Works (WWBW), regulated under the Queensland *Fisheries Act 1994* (Queensland Government, 2021). Based on the results of the desktop assessment, no Queensland Waterways mapped for WWBW were identified within the Development Footprint.

3.2.3 Wetlands

Desktop results

There are no mapped Wetlands of High Ecological Significance, Wetland Protection Areas or Wetlands of International Importance located within or adjacent to the Development Footprint (Refer to Annex 1 – Desktop Search Results - Map of Queensland wetland environmental values). The Development Footprint is located more than 40km upstream of the Moreton Bay Ramsar wetland (Refer to Annex 1 – Desktop Search Results – PMST Report). The reservoirs within the Development Footprint are not mapped as a referable wetland under the *Environmental Protection Act 1994* (EP Act).

Field results

At the time of the field assessment, both reservoirs had water present, with the northern reservoir largely open water with waterbirds present (Plate 7), and the southern reservoir supporting a number of native wetland flora species (Plate 4) (including rushes/sedges and herbs). Both reservoirs and constructed

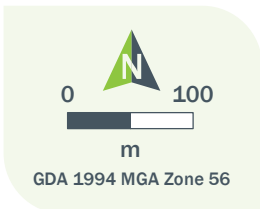
reservoir have the potential to provide habitat to a variety of aquatic (fish/amphibian species) and wetland bird species which is discussed further in the following Section 3.6 Fauna and fauna habitat.

Plate 7. Northern reservoir observed within the Development Footprint.





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Water Features Map
Greater Brisbane Greyhounds Club

Niche PM: Lisa Carter
Niche Proj. #: 6117
Client: ADG

Figure 4

3.3 Environmental landscape

3.3.1 Protected areas

No protected areas regulated under the NC Act are mapped within or adjacent to the Development Footprint (Queensland Government, 2021). Denmark Hill Conservation Park occurs approximately 6km northeast of the Development Footprint (Queensland Government, 2021). Connectivity from the Property boundary to Denmark Hill Conservation Park is largely obstructed by Cunningham Highway, however minor connectivity occurs via vegetated ‘stepping stones’ comprising remnant and high value regrowth vegetation and riparian vegetation along the Bremer River (Queensland Globe, 2021).

The Flinders-Goolman Conservation Estate is located approximately 6km southeast of the Development Footprint (ICC, 2021). The Flinders-Goolman Conservation Estate is over 2,200ha in area and supports forests, rugged volcanic peaks and slopes including Flinders Peak, Mt Blaine, Mt Catherine and Mt Goolma. The Conservation Estate contains habitat for the Brush-tailed rock wallaby (Vulnerable under EPBC Act and NC Act). Moderate levels of connectivity occurs from the Property boundary to Flinders-Goolman Conservation Estate via remnant and high value vegetation (Queensland Globe, 2021).

3.3.2 Habitat and wildlife corridors

The Development Footprint is located within a terrestrial state biodiversity corridor, except for one small section within the southwestern corner of the Development Footprint.

The Development Footprint is located adjacent and connected via remnant and regrowth vegetation to the Flinders-Goolman Conservation Estate. The Flinders-Goolman Conservation Estate is located within the Flinders-Karawatha Corridor, the largest remaining continuous stretch of open eucalypt forest in South East Queensland (DES, 2021). The Flinders-Karawatha Corridor is approximately 56,350ha and extends from Karawatha Forest in Brisbane’s southern suburbs to Flinders Peak, on to the south side of Ipswich and down to the Wyaralong Reservoir near Boonah (DES, 2021).

3.4 Vegetation communities

3.4.1 Threatened Ecological Communities

Desktop results

Threatened Ecological Communities are listed as an MNES under the EPBC Act.

Searches using the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matter Search Tool (29/07/2021) returned the following five TEC with the potential to occur within a 5km radius of the Development Footprint (Table 5) (Refer to Annex 1 – Desktop Search Results – PMST Report). One of these TECs, namely Swamp Tea-tree Forest of South East Queensland, is known to occur in the vicinity of the Development Footprint (Cardno, 2019).

Table 5. Threatened Ecological Communities with the potential to occur within Development Footprint.

TEC name	EPBC Act status
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland	Endangered
Lowland Rainforest of Subtropical Australia	Critically Endangered

TEC name	EPBC Act status
Poplar Box Grassy Woodland on Alluvial Plains	Endangered
Swamp Tea-tree (<i>Melaleuca irbyana</i>) Forest of Southeast Queensland	Critically Endangered
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered

Cardno (2019) identified Swamp tea-tree (*Melaleuca irbyana*) outside and to the east of the Development Footprint, however the total size of the patch (0.02ha) was considerably less than the 0.25ha of vegetation required to constitute a community in accordance with the conservation advice under the EPBC Act (TSSC, 2008). No other TEC were identified by Cardno within the Property boundary.

Field results

Consistent with the results of the Cardno EcoAR, no TEC listed under the EPBC Act were identified within the Development Footprint during the field assessment. However, a population of Swamp tea-tree (approximately 0.25ha) was identified on the adjoining property to outside and to the south of the Property boundary (Lot 154 on SP193446) that is likely to meet the definition of Swamp Tea-tree Forest of Southeast Queensland listed as Critically Endangered under the EPBC Act.

3.4.2 Regulated vegetation (including Essential Habitat)

Desktop results

Regulated vegetation that is remnant (Category B) vegetation, high value regrowth (Category C) vegetation, Essential Habitat is listed as an MSES under the NC Act.

The DoR Regulated Vegetation Management Map Version 5.0 under the VM Act has been updated since the previous version addressed in the Cardno EcoAR (2019). The current DoR Regulated Vegetation Management Map identifies that the Property boundary contains the following vegetation management categories (Annex 1 – Desktop Search Results – Vegetation Management Property Report):

- Remnant⁴ (Category B) vegetation;
- High value regrowth⁵ (Category C) vegetation; and
- Non remnant⁶ (Category X) vegetation.

Table 6 outlines the following five mapped Regional Ecosystems (REs) within the entire Property boundary, allocated accordingly within or adjacent to the Development Footprint according to the DoR Vegetation

⁴ The definition of remnant vegetation under the *Vegetation Management Act 1999* is vegetation that is either an endangered regional ecosystem; or an of concern regional ecosystem; or a least concern regional ecosystem; and forming the predominant canopy of the vegetation (i) covering more than 50% of the undisturbed predominant canopy; and (ii) averaging more than 70% of the vegetation's undisturbed height; and (iii) composed of species characteristic of the vegetation's undisturbed predominant canopy.

⁵ The definition of high value regrowth vegetation under the *Vegetation Management Act 1999* is vegetation located a) on freehold land, indigenous land, or land subject of a lease issued under the Land Act 1994 for agriculture or grazing purposes or an occupation licence under that Act; and b) in an area that has not been cleared (other than for relevant clearing activities) for at least 15 years, if the area is— i. an endangered regional ecosystem; or ii. an of concern regional ecosystem; or iii. a least concern regional ecosystem

⁶ Generally, vegetation which is disturbed and does not form a predominant canopy.

Management Supporting Map (Annex 1 – Desktop Search Results – Vegetation Management Property Report) (Figure 5).

Table 6. Mapped regional ecosystems.

Regional Ecosystem	Short Description	VM Act Conservation Status	Vegetation Management Category within entire Property boundary	Within or adjacent to Development Footprint?
12.3.3	<i>Eucalyptus tereticornis</i> woodland on Quaternary alluvium	Endangered	Category C	Adjacent
12.9-10.2	<i>Corymbia citriodora</i> subsp. <i>variegata</i> +/- <i>Eucalyptus crebra</i> open forest on sedimentary rocks	Least Concern	Category B and C	Adjacent
12.9-10.3	<i>Eucalyptus moluccana</i> open forest on sedimentary rocks	Of Concern	Category C	Adjacent
12.9-10.7	<i>Eucalyptus crebra</i> +/- <i>E. tereticornis</i> , <i>Corymbia tessellaris</i> , <i>Angophora</i> spp. and <i>E. melanophloia</i> woodland on sedimentary rocks	Of Concern	Category B and C	Within
12.9-10.27	<i>Corymbia citriodora</i> subsp. <i>variegata</i> and/or <i>E. moluccana</i> , <i>E. tereticornis</i> , <i>E. crebra</i> open forest with <i>Melaleuca irbyana</i> understorey on sedimentary rocks	Endangered	Category C	Adjacent

The Cardno EcoAR (2019) identified that the vegetation present within the entire Property boundary was generally characterised by four communities including open forest (including RE 12.9-10.7, RE 12.9-10.27, RE 12.9-10.2/12.9-10.7/12.3.3/12.9-10.3, and RE 12.9-10.2), scattered canopy with landscape plantings, aquatic vegetation, and disturbed grassland.

Essential habitat for the following threatened species which is regulated under the VM Act is mapped within the northern, eastern and southern sections of the Property boundary (Refer to Annex 1 – Desktop Search Results – Vegetation Management Property Report):

- Koala (*Phascolarctus cinereus*), listed as Vulnerable under both the EPBC Act and NC Act; and
- *Calyptochloa gracillima* subsp. *ipsviciensis* (Unnamed grass), listed as Critically Endangered under the NC Act.


Essential Habitat for the Koala (*Phascolarctus cinereus*) is mapped within the eastern section of the Development Footprint within high value regrowth (Category C) Eucalypt vegetation (Figure 5). Essential Habitat for the Koala is also mapped outside and to the east of the Development Footprint within remnant (Category B) and high value regrowth (Category C) vegetation. Essential Habitat for the *Calyptochloa*



gracillima subsp. ipsviciensis is mapped outside and to the south of the Development Footprint within remnant (Category B) Eucalypt vegetation (Figure 5).


Field results



The results of the field assessment verified the presence of both remnant (Category B) and high-value regrowth (Category C) regional ecosystems and were generally consistent with the DoR Vegetation Management Supporting Map and Cardno's EcoAR findings. Cardno's assessment did not differentiate between mixed RE polygons within the entire Property boundary, while Niche's field assessment refined mixed RE polygons into the component REs. As such, the number of REs from the desktop results has been reduced from five potential mapped REs to two dominant REs that are field verified across the Property boundary. A summary of REs verified by Cardno and Niche's refined RE mapping is outlined in Table 7 below.

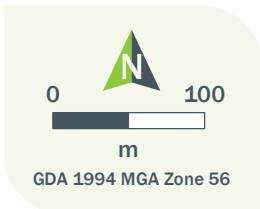
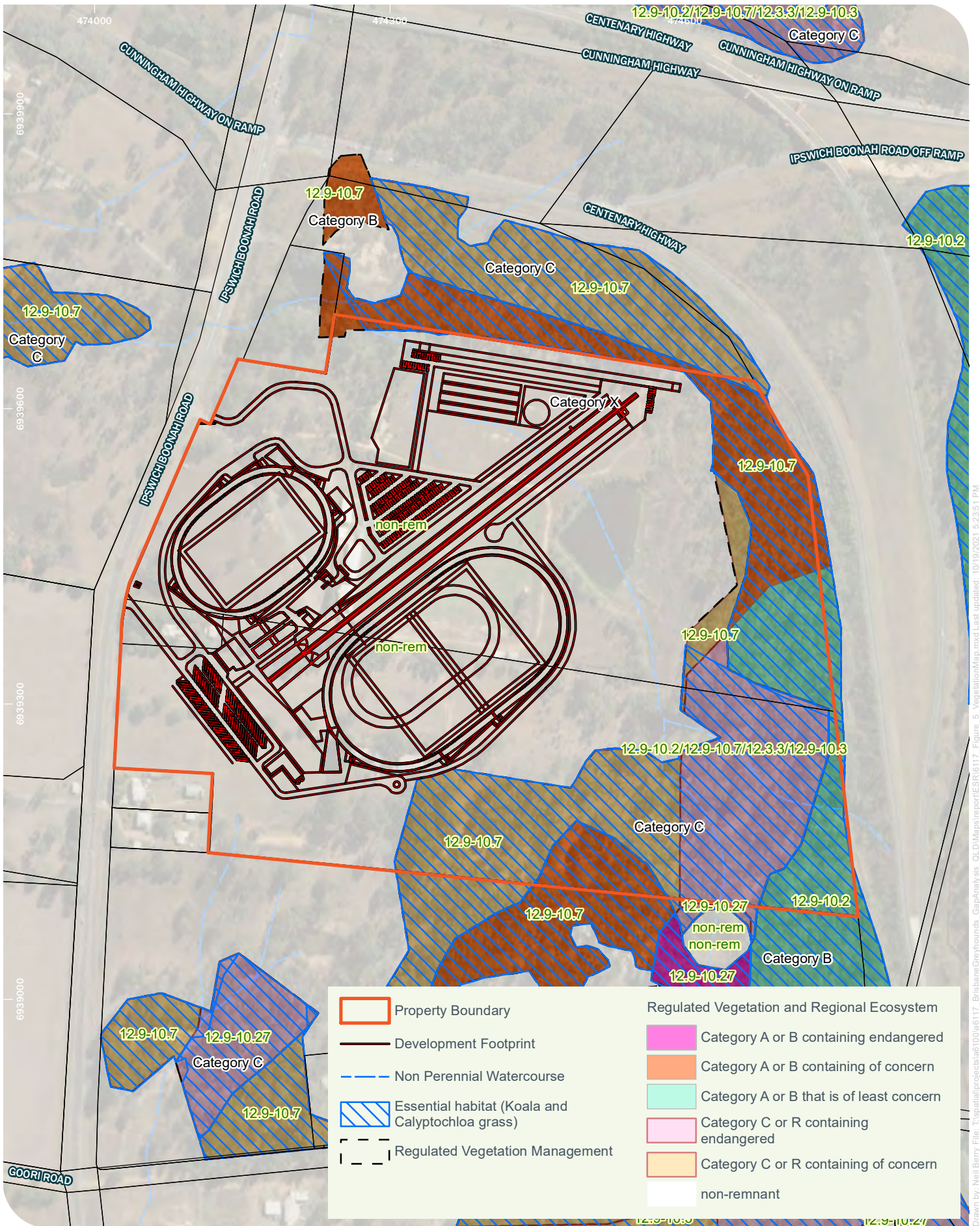
Table 7. Vegetation communities observed within the Property boundary.

Vegetation Community	Field Assessment Description	VM Act Conservation Status	Summary of Cardno's field assessment
<p>12.9-10.2</p> 	<p>Canopy species included Narrow-leaved Ironbark (<i>Eucalyptus crebra</i>), Spotted Gum (<i>Corymbia citriodora</i>) and other <i>Eucalyptus spp.</i> (T1: 25m). Exotic species also consisted of *Prickly Pear (<i>Opuntia stricta</i>) and *Mother-of-millions (<i>Bryophyllum delagoense</i>).</p>	<p>Least Concern</p>	<p>Observed within the southeast of the Property boundary (QP6).</p>
<p>12.9-10.7</p>	<p>Canopy species included <i>Eucalyptus spp.</i> and Spotted Gum (<i>Corymbia citriodora</i>) (T1: 23-30m, 50%). The sub canopy largely included sub-mature specimens of the same species, as well as <i>Acacia spp.</i>, Moreton Bay Ash (<i>Corymbia tessellaris</i>) and Leucaena (<i>Leucaena leucophala</i>) (T2: 14-16m, 10%). A shrub layer occurred, consisting of <i>Acacia spp.</i> and <i>Eucalyptus spp.</i> regrowth (S: 2-5m, 50%). The ground layer included Lantana (<i>Lantana camara</i>), Black Spear Grass (<i>Heteropogon contortus</i>), Signal grass (<i>Urochloa decumbens</i>) and occasional Blue flax lily (<i>Dianella sp.</i>) (G: 0-1m, 80%).</p> <p>Exotic species also consisted of *Prickly Pear (<i>Opuntia stricta</i>) and *Mother-of-millions (<i>Bryophyllum delagoense</i>).</p>	<p>Of Concern</p>	<p>Observed within the northeast of the Property boundary (QP1, 2 and 7).</p>

Vegetation Community	Field Assessment Description	VM Act Conservation Status	Summary of Cardno's field assessment
			
<p>12.9-10.2/12.9-10.7</p> 	<p>Canopy species included Narrow-leaved Ironbark (<i>Eucalyptus crebra</i>), Spotted Gum (<i>Corymbia citriodora</i>) and Queensland Blue Gum (<i>Eucalyptus propinqua</i>) and other Eucalyptus spp. (T1: 16-22m, 20%). The subcanopy layer included regrowth of abovementioned Eucalypt species (8-15m, 30%). The shrub layer comprised of regrowth Eucalypt species and Hickory Wattle (<i>Acacia disparrima</i>) (S: 3-6m, 10%). The ground layer comprised of Black Spear Grass (<i>Heteropogon contortus</i>), Signal grass (<i>Urochloa decumbens</i>) and occasional Blue flax lily (<i>Dianella sp.</i>) (G: 0-2m, 80%).</p>	<p>Least Concern/Of Concern</p>	<p>Observed within the southeast of the Property boundary (QP5).</p>

Vegetation Community	Field Assessment Description	VM Act Conservation Status	Summary of Cardno's field assessment
<p>Preliminary regrowth (non remnant [Category X] vegetation)</p> 	<p>Species present within this vegetation community consisted of a variety of native and introduced species, which were sparsely scattered. Native species within this community include Forest Red Gum (<i>Eucalyptus tereticornis</i>), Narrowleaved Red Ironbark (<i>E. crebra</i>), and Spotted Gum (<i>Corymbia citriodora</i>). Introduced species include Agave (<i>Agave americana</i>), Tipuana (<i>Tipuana tipu</i>), and Rubber Fig (<i>Ficus elastica</i>).</p>	<p>-</p>	<p>Observed within Lot 1 on SP193446</p>
<p>Aquatic vegetation</p>	<p>Predominant species along the lower bank include Water Snowflake (<i>Nymphoides indica</i>) and exotic species *Smart Weed (<i>Persicaria attenuata</i>), Mexican Water Lily (<i>Nymphaea mexicana</i>) and *Kidneyleaf Mudplantain (<i>Heteranthera reniformis</i>). The canopy along the upper-bank supports a mixture of native and exotic species, including *Tipuana (<i>Tipuana tipu</i>), juvenile Forest Red Gum (<i>Eucalyptus tereticornis</i>), and juvenile Black Wattle (<i>Acacia leiocalyx</i>). *Lantana (<i>Lantana camara</i>) is prevalent throughout the vegetation along the entire bank.</p>	<p>-</p>	<p>Observed surrounding reservoirs</p>

Vegetation Community	Field Assessment Description	VM Act Conservation Status	Summary of Cardno's field assessment
			
<p>Disturbed grassland (non remnant [Category X] vegetation)</p> 	<p>The upper shrub layer was dominated by a number of weedy species, including *Lantana (<i>Lantana camara</i>), and *Prickly Pear (<i>Opuntia stricta</i>). Species within the lower shrub and groundcover layers consisted predominantly of introduced grasses, such as *Mother-of-millions (<i>Bryophyllum delagoense</i>), *Rhodes grass (<i>Chloris gayana</i>) and *Guinea Grass (<i>Megathyrsus maximus</i>), although native species such as Yellow Buttons (<i>Chrysocephalum apiculatum</i>) and Blueberry Lily (<i>Dianella caerulea</i>) were present in considerable densities. Exotic grasses also present within this vegetation community consisted of *Guinea grass (<i>Megathyrsus maximus</i>), *Rhodes grass (<i>Chloris gayana</i>), *Pampas grass (<i>Cortaderia selloana</i>), *Whiskey grass (<i>Andropogon virginicus</i>), *African lovegrass (<i>Eragrostis curvula</i>) and *South-African Pigeon Grass (<i>Setaria sphacelata</i>).</p>	-	<p>Observed within western and central portions on Lot 1 SP193446 on and 2 on SP193446</p>



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 Niche Proj. #: 6117
 Client: ADG

Vegetation Map
 Greater Brisbane Greyhounds Club

Figure 5

World Imagery: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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3.5 Flora

3.5.1 Flora species and Threatened flora

Desktop results

Threatened flora species and the State-listed protected plants High Risk area are listed as a MNES under the EPBC Act and/or MSES under the NC Act.

The Protected Plant Flora Survey Trigger Map under the NC Act has been updated since the Cardno EcoAR (2019). The entire Property boundary was previously identified as containing mapped High Risk areas (Cardno, 2019). High Risk areas are currently mapped within the northwestern and southwestern sections within the Development Footprint mapped as supporting remnant (Category B) and some regrowth vegetation (Refer to Annex 1 – Desktop Search Results – Vegetation Management Property Report) (Figure 6Figure 5).

The EPBC Act Protected Matter Search Tool (29/07/2021) identified 12 listed threatened flora species or species habitat with the potential to occur in within a 5km radius of the Property boundary (Refer to Annex 1 – Desktop Search Results – PMST Report). Searches of the NC Act Wildlife Online database (29/07/2021) returned records for three threatened flora species or species habitat within a 5km radius of the Development Footprint (Refer to Annex 1 – Desktop Search Results – WildNet Search Results).

Cardno’s desktop review identified Swamp tea-tree (*Melaleuca irbyana*), previously listed as Vulnerable under an earlier version of the NC Act) with the potential to occur within the Property boundary. Cardno’s field assessment confirmed six individuals of Swamp tea-tree (*M. irbyana*) outside and to the southwest of the Development Footprint (Figure 6). No other threatened flora species were identified as likely to occur within the Property boundary.

Since Cardno’s EcoAR (2019), Swamp tea-tree (*M. irbyana*) has been re-listed as Endangered and *Calyptochloa gracillima* subsp. *ipsviciensis* (Unnamed grass) has been newly listed as Critically Endangered under the NC Act.

Field results

The field assessment confirmed Cardno’s six records of Swamp tea-tree (*M. irbyana*) located south of the southern reservoir along the Watercourse to the southwest and outside the Development Footprint. One further Swamp tea-tree individual was recorded by Niche during the field assessment which were not recorded by Cardno, located to the east of the southern reservoir and an additional 40 individuals were recorded outside of the Property boundary to the south on Lot 154 on SP193446 (Figure 6).

While the flora survey included searches for Threatened flora (including *Calyptochloa gracillima* subsp. *ipsviciensis* (Unnamed grass)), the survey timing was not within the flowering season for this species during December-March and additional threatened flora field assessment should be undertaken within the Development Footprint and Canine and community use precinct prior to works.

No Commonwealth-listed threatened flora species listed under the EPBC Act were recorded within the Development Footprint (noting that Swamp tea-tree is not listed as a threatened species under the EPBC Act).

Based on the results of the desktop review and habitat field assessment, Table 8 outlines the eight threatened flora species that are known or have the potential to occur within the Property boundary⁷, consisting of the one recorded species (Swamp tea-tree – *M. irbyana*), two threatened flora species with a high likelihood of occurrence and five threatened flora species with a moderate likelihood of occurrence. A detailed Likelihood of occurrence (LoO) assessment is presented in Appendix 3 – Likelihood of Occurrence Assessment. Threatened plants that have been identified with the potential to occur within the Property boundary are generally expected to be restricted to vegetated areas within the northern, southern and eastern extents of the Property boundary. Of these eight threatened plants species likely to occur within the Property boundary, two threatened grass species (Hairy Joint-grass *Arthraxon hispidus* and Austral toadflax *Thesium Australe*) are generally expected to occur within Disturbed grasslands within the Development Footprint. However, Cardno did not record any threatened species during their field assessment (including within Disturbed grasslands). As such, the presence of these threatened flora species is unlikely to occur within the Development Footprint.

Table 8. Threatened flora species with the potential to occur within the Property boundary.

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur Development Footprint?
<i>Arthraxon hispidus</i>	Hairy-joint Grass	V	LC	In Australia, <i>Arthraxon hispidus</i> has been recorded from scattered locations throughout Queensland and on the northern tablelands and north coast of NSW. <i>Arthraxon hispidus</i> has been recorded growing around freshwater springs on coastal foreshore dunes, in shaded gullies, on creek banks, on sandy alluvium in creek beds in open forests and with bog mosses in mound springs (TSSC 2008). Flowers from March to July.	Moderate	N
<i>Callitris baileyi</i>	Bailey's cypress	-	NT	<i>Callitris baileyi</i> 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.	High	N

⁷ Please note, due to the nature and extent of expected impacts for the Project, the likelihood of occurrence for threatened species has been assessed for the entire Property boundary.

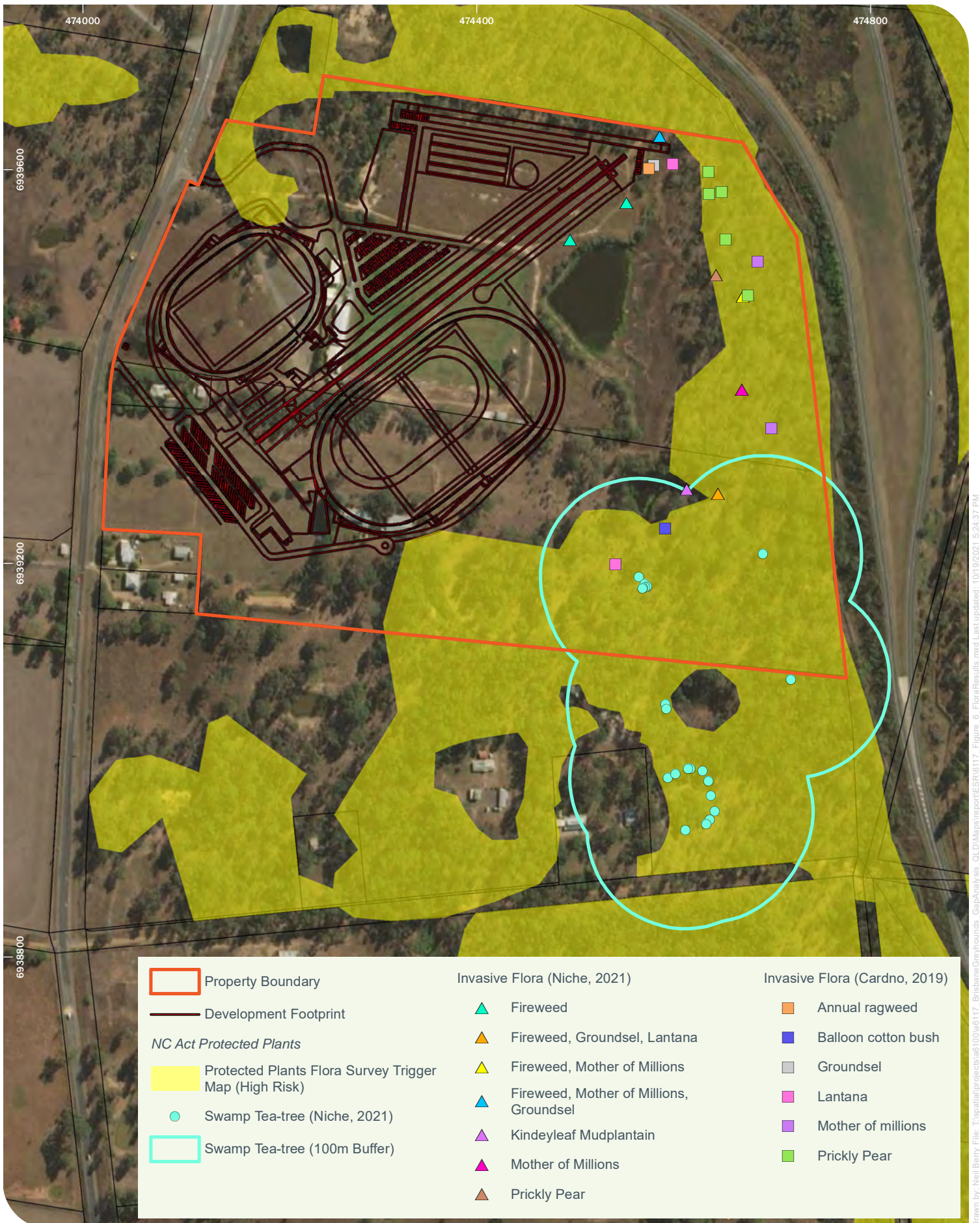
Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur Development Footprint?
<i>Calyptochloa gracillima</i> subsp. <i>ipsviciensis</i>		-	CR	<i>Calyptochloa gracillima</i> subsp. <i>ipsviciensis</i> is 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 <i>Eucalyptus</i> spp. including Narrow-leaved Ironbark (<i>E. crebra</i>) and Gum Topped Box (<i>E. moluccana</i>) (Roxb.) and/or Spotted Gum (<i>Corymbia citriodora</i> subsp. <i>variegata</i>) (F.Muell.) (A.R.Bean & M.W.McDonald) on loam to clay loam duplex soils derived from shale on gently undulating to hilly terrain. REs represented include 12.9–10.2, 12.9–10.3 and 12.9–10.19. Associated ground layer species include Many Headed Wiregrass (<i>Aristida caput-medusae</i>) (Domin), <i>Cleistochloa subjuncea</i> (C.E.Hubb.) and Kangaroo Grass (<i>Themeda triandra</i>) (Forssk.) The habitat is typically moderately shaded.	High	N
<i>Melaleuca irbyana</i>	Swamp Tea-tree	-	E	<i>Melaleuca irbyana</i> grows in flat areas that are periodically waterlogged, in eucalypt forest, mixed forest and <i>Melaleuca</i> woodland with a sparse and grassy understorey. It grows on poorly draining, heavy clay soils. (Byrnes 1984; Barlow 1987).	Recorded	N

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur Development Footprint?
<i>Notelaea ipsviciensis</i>	Cooneana Olive	CE	CR	<i>Notelaea ipsviciensis</i> is known from only three closely clustered sub-populations in the Dinmore, Ipswich. Total extent of occurrence is less than 2 square kilometers, and total number of specimens is 17 (all mature). <i>Notelaea ipsviciensis</i> grows as an understorey plant in open woodlands, and is primarily associated with eucalypt-dominated dry sclerophyll communities situated on poor, sandstone-based soils (Lock et al., 2004; Beyleveld, 2006, 2007).	Moderate	N
<i>Notelaea lloydii</i>	Lloyd's Olive	V	V	<i>Notelaea lloydii</i> is endemic to south-east Queensland between Mt Brisbane, near Somerset Reservoir, to just south of Beaudesert and as far west as Mt Berryman near Laidley, a range of approximately 120 km, with an area of occupancy of approximately 3,700km ² (Halford, 1998). It commonly occurs in open eucalypt forest, often near the margins of vine thickets, vine forests and softwood scrub at altitudes between 80 and 480m. It is usually found on stony, shallow and rocky soils derived from sandstone or acid volcanic rocks, often on steep slopes, or near drainage lines (Queensland Herbarium, 2008).	Moderate	N

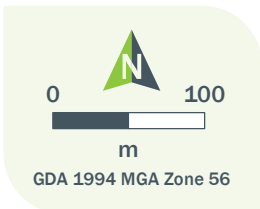
Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur Development Footprint?
<i>Samadera bidwillii</i>	Quassia	V	V	<i>Samadera bidwillii</i> has been collected from Scawfell Island, east of Mackay, to as far south as Bauple and west to Biloela. <i>Samadera bidwillii</i> commonly occurs in lowland rainforest often with Hoop Pine (<i>Araucaria cunninghamii</i>) or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland, it is commonly found in areas adjacent to both temporary and permanent watercourses up to 510m altitude. Commonly associated trees in the open forest and woodlands include Spotted Gum (<i>Corymbia citriodora</i>), Grey Gum (<i>Eucalyptus propinqua</i>), White Mahogany (<i>E. acmenoides</i>), Forest Red Gum (<i>E. tereticornis</i>), Pink Bloodwood (<i>Corymbia intermedia</i>), Ironbark (<i>E. siderophloia</i>), Gum Topped Box (<i>E. moluccana</i>), Gympie Messmate (<i>E. cloeziana</i>) and Broad-leaved Ironbark (<i>E. fibrosa</i>) (Queensland Herbarium, 2012). Flowers mainly in summer (Department of the Environment, 2019).	Moderate	N

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur Development Footprint?
<i>Thesium australe</i>	Austral Toadflax, Toadflax	V	V	<i>Austral Toadflax (Thesium australe)</i> is found in South East Queensland from Bundaberg to Dalby and to the NSW border, and also found west in Carnarvon National Park. Austral Toadflax grows in grassland or woodland, often in reservoir sites. Examples of associated vegetation includes: open woodland with Queensland Blue Gum (<i>Eucalyptus tereticornis</i>) and Queensland White Stringybark (<i>E. tindaliae</i>) on skeletal soils; on heavy alluvium soil in grassy Poplar Box (<i>E. populnea</i>) woodland; on black cracking clay in grassland of Queensland Bluegrass (<i>Dichanthium sericeum</i>); and grassland dominated by Kangaroo Grass (<i>Themeda triandra</i>) and Black Spear Grass (<i>Heteropogon contortus</i>) on basaltic, rocky soils (Queensland Herbarium, 2012). Flowering is recorded from Spring to Autumn (Department of the Environment, 2019).	Moderate	N

1. Listed as Critically Endangered (CE), Endangered (E), Vulnerable (V) under the EPBC Act.
2. Listed as Critically Endangered (CR), Endangered (E), Vulnerable (V) and Near Threatened (NT) under the NC Act.



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Niche Proj. #: 6117
Client: ADG

Flora Results Map Greater Brisbane Greyhounds Club

Figure 6

3.6 Fauna and fauna habitat

3.6.1 Fauna habitat

Desktop results

Overall, the Property boundary, particularly vegetated areas within the Vegetation buffer zone, is considered to be of high value for many native fauna species (Cardno, 2019). Native fauna were observed within the Property boundary during Cardno’s field assessment, including mammals, birds and amphibians.

Most of the vegetation within the Development Footprint would provide reasonable foraging and nesting resources for a variety of native mammalian and avian species (Cardno, 2019). However, due to the high habitat value and large areas of disturbance, presence of exotic fauna species, such as *Black Rat (*Rattus lutreolus*) and *House Mouse (*Mus musculus*) is also likely (Cardno, 2019). Aquatic environments within the Property boundary have the potential to support aquatic fauna, such as the Great Brown Broodfrog (*Pseudophryne major*) and the Eastern Snakenecked Turtle (*Chelodina longicollis*) (Cardno, 2019).

Field results

The desktop and field assessments undertaken by Cardno were generally consistent with the Niche findings for fauna habitat within the Property boundary and Development Footprint. Niche identified numerous waterbirds such as Eurasian Coot (*Fulica atra*), Pacific Black Duck (*Anas superciliosa*), Wandering Whistling Duck (*Dendrocygna arcuata*), Purple Swamp Hen (*Porphyrio porphyrio*) and Eastern Sedge Frog (*Litoria fallax*) utilising the reservoirs within the Property boundary. Further, scats for macropods, Koalas and the Short-beaked Echidna (*Tachyglossus aculeatus*) (listed as Special Least Concern under the NC Act) were also identified within vegetated areas across the south-eastern section of the Property boundary.

Based on the results of the desktop review and field assessment, Table 8 outlines the four fauna habitat types identified within the Property boundary (Figure 7):

Table 9. Fauna habitat types identified within Property boundary.

Fauna habitat types	Description
Eucalypt open forest	This habitat type supports a mid-dense canopy dominated by Narrow-leaved Ironbark (<i>Eucalyptus crebra</i>), Queensland Blue Gum (<i>Eucalyptus tereticornis</i>) and Spotted Gum (<i>Corymbia citriodora</i>). These areas offer high value habitat for Koala given the availability of primary and secondary preferred Koala food trees and connectivity with Flinders-Goolman Conservation Estate to the South. Vegetation offers suitable foraging opportunities for nectivores including Grey-headed Flying-fox (<i>Pteropus poliocephalus</i>). No active Flying-fox roosts were observed during field assessments undertaken for the Project. The Property boundary supports relatively low numbers of hollow-bearing trees and stags indicating habitats are marginal for hollow-dwelling arboreal mammals, such as the Common Brushtail Possum (<i>Trichosurus vulpecula</i>) or Squirrel Glider (<i>Petaurus norfolcensis</i>). Generally, the hollow-bearing trees were observed with small (<5cm) to medium (5-10cm) sized hollows suitable for nesting birds including Rainbow Lorikeet (<i>Trichoglossus moluccanus</i>) and Galah (<i>Eolophus roseicapilla</i>). Stick nests were also observed within trees, offering nesting opportunities for Eastern Rosella (<i>Platycercus eximius</i>)

Fauna habitat types	Description
	and Pale-headed Rosella (<i>Platycercus adscitus</i>). High amounts of litter and woody debris were noted offering suitable foraging opportunities for Eastern Grey Kangaroo (<i>Macropod giganteus</i>) and for reptiles such as Lace Monitor (<i>Varanus varius</i>). Litter may also offer extended shelter and foraging opportunities for small reptiles frogs.
Preliminary regrowth	This habitat type supported a sparse canopy including Queensland Blue Gum (<i>Eucalyptus tereticornis</i>), Narrow-leaved Ironbark (<i>Eucalyptus crebra</i>) and Spotted Gum (<i>Corymbia citriodora</i>). These areas offer moderate value foraging and transient habitat for Koala given the availability of primary and secondary preferred Koala food trees and limited connectivity with other vegetated areas. The shrub layer contained Eucalypt regrowth and other exotic species such as *Leucaena (<i>Leucaena leucocephala</i>), *Agave (<i>Agave americana</i>) and *Tipuana (<i>Tipuana tipu</i>). This offers limited transient habitat for small birds such as Willy Wagtail (<i>Rhipidura leucophrys</i>), Grey Fantail (<i>Rhipidura albiscapa</i>) and Rose Robin (<i>Petroica rosea</i>). The understorey consists of mown grass and limited leaf litter, offering foraging opportunities for Eastern Grey Kangaroo (<i>Macropod giganteus</i>).
Disturbed grassland	This habitat type is highly disturbed offering low fauna habitat value. Mown grass within the Property boundary provides foraging opportunities for Eastern Grey Kangaroo (<i>Macropod giganteus</i>). This would also provide foraging opportunities for other mobile urban-adapted species including flying-fox species and birds such as Noisy Miner (<i>Manorina melanocephala</i>), Laughing Kookaburra (<i>Dacelo novaeguineae</i>), Torresian Crow (<i>Corvus orru</i>) and Pied Butcherbird (<i>Cracticus nigrogularis</i>).
Aquatic	This habitat type exhibited a moderate level of structural complexity with some Queensland Blue Gum (<i>Eucalyptus tereticornis</i>) and *Lantana (<i>Lantana camara</i>) on fringing banks. The southern reservoir contained a variety of native sedges and rushes with potential habitat for frogs and some waterbirds. This would offer suitable foraging opportunities for mobile urban adapted species including Grey-headed Flying-fox (<i>Pteropus poliocephalus</i>) and transient habitat for some woodland birds. The vegetation would also provides suitable perching / roosting opportunities for waterbirds such as Eurasian Coot (<i>Fulica atra</i>), Pacific Black Duck (<i>Anas superciliosa</i>), Wandering whistling duck (<i>Dendrocygna arcuata</i>) and Purple Swamp Hen (<i>Porphyrio porphyrio</i>). Moderate amounts of litter and woody debris were also noted, offering suitable shelter and potential oviposition sties for Great Brown Broodfrog (<i>Pseudophryne major</i>).

3.6.2 Animal breeding places

Desktop results

An Animal Breeding Place⁸ is protected under the NC Act. It is prohibited to tamper with an Animal Breeding Place unless an approved Species Management Program (SMP) applies (Nature Conservation (Animals) Regulation 2020).

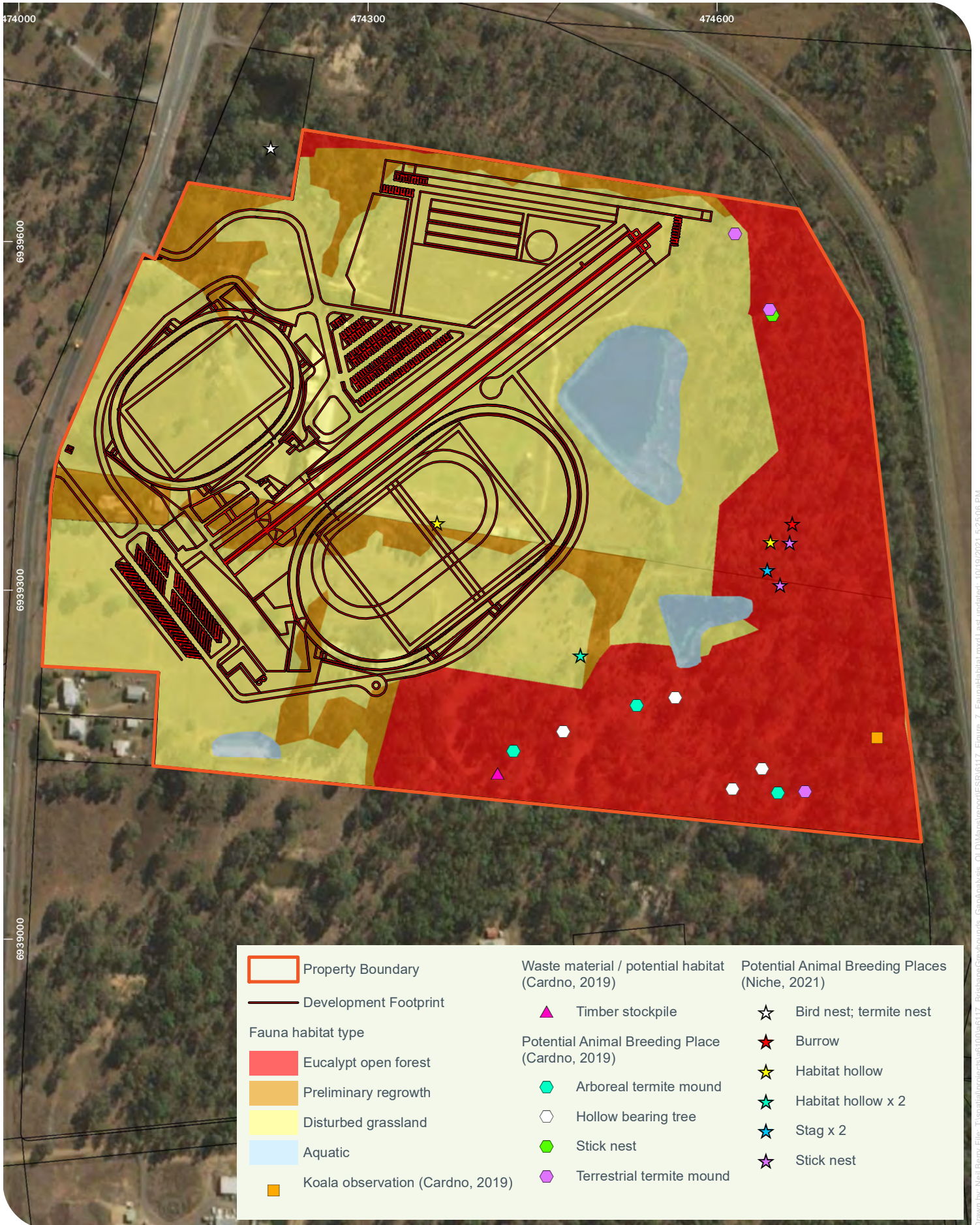
⁸ A bower, burrow, cave, hollow, nest or other thing that is commonly used by the animal to incubate or rear the animal's offspring (Schedule 5, Nature Conservation (Animals) Regulation 2020).

Cardno identified several potential animal breeding places within the Property boundary, including hollow-bearing trees and stags (Cardno, 2019). A substantial number of hollow nesting avian species were incidentally observed throughout the Cardno field survey, Laughing kookaburra (*Dacelo novaeguineae*), Eastern rosella (*Platycercus eximius*), Pale-headed rosella (*Platycercus adscitus*), Rainbow lorikeet (*Trichoglossus moluccanus*), and Galah (*Eolophus roseicapilla*).

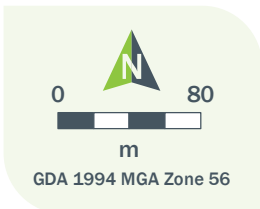
Field results

The Niche field assessment generally confirmed the presence of Cardno’s potential animal breeding places within the Property boundary, including four hollow-bearing trees and two stags. Hollow-bearing trees and stags, while in low abundance, have the potential to offer animal breeding places for least concern birds and mammals such as Common Brushtail Possum (*Trichosurus vulpecula*) and colonial breeding species such as Squirrel Glider (*Petaurus norfolcensis*). Generally, the hollow-bearing trees were observed with small (<5cm) to medium (5-10cm) sized hollows suitable for nesting birds including Rainbow Lorikeet and Galah. Stick nests were also observed within trees, offering nesting opportunities for Eastern Rosella and Pale-headed Rosella. Niche also recorded additional potential animal breeding places within the Property boundary, such as one stick nest and one bird nest in an arboreal termite nest (Figure 7). A burrow with the potential to offer breeding habitat for Short-beaked Echidna (listed as Special Least Concern under the NC Act) was also observed within the Property boundary. In particular, potential animal breeding places were observed by both Cardno and Niche across the vegetated areas mapped as Category B (remnant) and Category C (high-value regrowth) vegetation within the Property boundary (Figure 5). The reservoirs and constructed reservoir within the Property boundary provides suitable habitat (including potential breeding habitat) for amphibian and aquatic species.

Generally, potential animal breeding places were observed outside and to the east of the Development Footprint, except for one hollow (Figure 7).



Property Boundary	Waste material / potential habitat (Cardno, 2019)	Potential Animal Breeding Places (Niche, 2021)
Development Footprint	Timber stockpile	Bird nest; termite nest
Fauna habitat type	Potential Animal Breeding Place (Cardno, 2019)	Burrow
Eucalypt open forest	Arboreal termite mound	Habitat hollow
Preliminary regrowth	Hollow bearing tree	Habitat hollow x 2
Disturbed grassland	Stick nest	Stag x 2
Aquatic	Terrestrial termite mound	Stick nest
Koala observation (Cardno, 2019)		



Fauna and Habitats Map
Greater Brisbane Greyhounds Club

Niche PM: Lisa Carter
Niche Proj. #: 6117
Client: ADG

Figure 7

World Imagery: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Drawn by: Neil Berry File: T:\spatial\projects\ab100\ae6117_Brisbane Greyhounds_GapAnalysis_QLD\Maps\report\ESR\6117_Figure_7_FaunaHabitat.mxd Last updated: 10/19/2021 5:25:06 PM

3.6.3 Threatened fauna

Desktop results

Threatened fauna species are listed as a MNES under the EPBC Act and/or MSES under the NC Act.

The EPBC Act Protected Matter Search Tool (29/07/20221) identified 23 listed threatened⁹ fauna species or species habitat with the potential to occur within a 5km radius of the Property boundary including (Refer to Annex 1 – Desktop Search Results – PMST Report):

- Twelve bird species.
- One fish species.
- One insect species.
- Seven mammal species.
- Two reptile species.

The NC Act Wildlife Online search results (29/07/21) identified three threatened and four Special Least Concern fauna species with the potential to occur within a 5km radius of the Property boundary (Refer to Annex 1 – Desktop Search Results – WildNet Search Results).

Essential Habitat for the Koala and regulated under the VM Act is mapped across the remnant vegetation mapped within the Property boundary (Refer to Annex 1 – Desktop Search Results – Vegetation Management Property Report). Further information relating to Koala habitat is outlined in the *Section 3.8 - Koalas and Koala habitat*.

Cardno’s EcoAR (2019) determined that the following two threatened fauna or their habitat are likely to occur within the Property boundary:

- Koala (listed as Vulnerable under the EPBC Act and NC Act); and
- Grey-headed flying fox (listed as Vulnerable under the EPBC Act).

Field results

The field assessment confirmed suitable habitat for the two threatened fauna identified by Cardno. In addition, based on Niche’s desktop review and field habitat assessment, Table 10 outlines the following nine threatened species with the potential to occur within the Property boundary¹⁰, consisting of one mammal species with a high likelihood of occurrence and three species (one mammal, one reptile and one bird) with a moderate likelihood of occurrence, and five birds with a transient likelihood of occurrence. Likely threatened fauna species are discussed further in the following sections. Of these nine threatened species with the potential to occur within the Property boundary, two mammal species (Koala and Grey-headed Flying-fox) and one reptile species (Collared Delma *Delma torquata*) have the potential to occur within Preliminary regrowth within the Development Footprint.

⁹ Species listed as critically endangered, endangered, vulnerable or near threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and/or Queensland *Nature Conservation Act 1992*.

¹⁰ Please note, due to the nature and extent of expected impacts for the Project, the likelihood of occurrence for threatened species has been assessed for the entire Property boundary.

A detailed Likelihood of Occurrence (LoO) assessment is presented in Appendix 3 – Likelihood of Occurrence Assessment.

Threatened fauna that have been identified with the potential to occur within the Property boundary are generally expected to favour habitat within the Eucalypt open forest along the northern, southern and eastern extents of the Development Footprint and Aquatic habitat areas. The Eucalypt open forest is likely to provide habitat and connectivity opportunities for the Koala (*Phascolarctus cinereus*) and potentially the Collared Delma (*Delma torquata*) and foraging habitat for the Grey-headed Flying-fox (*Pteropus poliocephalus*) and transient habitat for threatened terrestrial bird species (including the Grey Falcon - *Falco hypoleucos*, Swift Parrot - *Lathamus discolor*, White-throated Needletail - *Hirundapus caudacutus*). Preliminary regrowth vegetation is likely to provide foraging habitat and connectivity opportunities for the Koala and Grey-headed Flying-fox and potentially Collared Delma. The Aquatic habitat provided by the dams along the Watercourse are considered to provide potential habitat and foraging opportunities for threatened wetland birds including the Australasian Bittern (*Botaurus poiciloptilus*), Australian Painted Snipe (*Rostratula australis*) and Curlew Sandpiper (*Calidris ferruginea*).

Further information relating to Koala habitat is outlined in the following Section 3.8 under *Koalas and Koala habitat*.

Table 10. Threatened fauna species with the potential to occur within the Property boundary.

Scientific name	Common name	EPBC Act Status	NC Act Status	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
Birds						
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes and spikerushes. The species is a secretive, stocky, heron-like bird, and can be very well camouflaged. It favours wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water.	Moderate	N
<i>Falco hypoleucos</i>	Grey Falcon	V	V	The species occurs in arid and semi-arid	Transient	N

Scientific name	Common name	EPBC Act Status	NC Act Status	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				<p>Australia, mainly found where annual rainfall is less than 500 mm, except when wet years are followed by drought, when the species might become marginally more widespread. 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. The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses.</p>		
<i>Lathamus discolor</i>	Swift parrot	CE	E	<p>During summer, it breeds in colonies in blue gum forest of south-east Tasmania. Infrequent breeding also occurs in north-west Tasmania. Breeding occurs in tree hollows and they have high site fidelity. The entire population migrates to the mainland for winter. On the mainland it disperses widely and forages on flowers and psyllid lerps in eucalypts. The birds mostly occur on inland slopes, but</p>	Transient	N

Scientific name	Common name	EPBC Act Status	NC Act Status	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				occasionally occur on the coast.		
<i>Rostratula australis</i>	Australian Painted Snipe	E	V	The Australian Painted Snipe has been recorded at wetlands all around Australia but it is most common in eastern Australia, where it has been recorded at scattered locations throughout much of Queensland. It generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans.	Transient	N
<i>Hirundapus caudacutus</i>	White-throated Needletail	V, M	V	In eastern Australia, it is recorded in all coastal regions of Queensland and NSW extending inland to the western slopes of the Great Dividing Range and occasionally in the adjacent inland plains. The general habitat consists of heights of less than 1m up to more than 100m above the ground. Recorded most above wooded areas, including open forest and rainforest. Roosts in trees amongst dense foliage in the canopy or in hollows.	Transient	N
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE	CE	In Australia, Curlew Sandpipers occur around the coasts and are also	Transient	N

Scientific name	Common name	EPBC Act Status	NC Act Status	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				quite widespread inland, though in smaller numbers. Records occur in all states during the non-breeding period, and also during the breeding season when many non-breeding one year old birds remain in Australia rather than migrating north. 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 near the coast, and ponds in saltworks and sewage farms.		
Mammals						
<i>Phascolarctos cinereus</i>	Koala	V	V	Koalas inhabit any forest or woodland containing species that are known koala food trees, or shrubland with emergent food trees. Koala habitat trees include: a) a food tree of the <i>Corymbia</i> , <i>Eucalyptus</i> , <i>Lophostemon</i> , or <i>Melaleuca</i> genera b) a preferred shelter species such as <i>Angophora</i> . (State of Queensland, 2010).	High	Y
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	LC	The Grey-headed Flying-fox is Australia's only endemic flying-fox and occurs in the coastal belt from Rockhampton in central Queensland to	Moderate	Y

Scientific name	Common name	EPBC Act Status	NC Act Status	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				<p>Melbourne in Victoria. 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, <i>Melaleuca</i> swamps and <i>Banksia</i> woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. The primary food source is blossom from <i>Eucalyptus</i> and related genera but in some areas it also utilises a wide range of rainforest fruits. None of the vegetation communities used by the Grey-headed Flying-fox produce continuous foraging resources throughout the year. As a result, the species has adopted complex migration traits in response to ephemeral and patchy food resources. Three flying-fox colonies within 5km of the Property boundary.</p>		
Reptiles						

Scientific name	Common name	EPBC Act Status	NC Act Status	Distribution and habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
<i>Delma torquata</i>	Collared Delma	V	V	The Collared Delma normally inhabits eucalypt-dominated woodlands and open-forests. In West-Brisbane the species typically inhabits forests with a midstorey of Red Ash (<i>Alphitonia excelsa</i>), Wattles including Brisbane Wattle (<i>Acacia fimbriata</i>), Hickory Wattle (<i>A. concurrens</i>), Brush Box (<i>Lophostemon confertus</i>), Hovea (<i>Hovea longifolia</i>), and Lantana (<i>Lantana camara</i>). The ground cover is predominantly native grasses such as Kangaroo Grass (<i>Themeda triandra</i>), Barbed-wire Grass (<i>Cymbopogon refractus</i>), Wiregrass (<i>Aristida sp.</i>) and Lomandra (<i>Lomandra sp.</i>). The presence of rocks, logs, bark and other coarse woody debris, and mats of leaf litter (typically 30–100 mm thick) appears to be an essential characteristic of the Collared Delma microhabitat and is always present where the species occurs.	Moderate	Y

1. Listed as Critically Endangered (CE), Endangered (E), Vulnerable (V) under the EPBC Act.
2. Listed as Critically Endangered (CR), Endangered (E), Vulnerable (V) and Near Threatened (NT) under the NC Act.

3.6.4 Migratory fauna

Desktop results

Migratory species are listed as a MNES under the EPBC Act and Special Least Concern MSES under the NC Act.

The EPBC Act Protected Matter Search Tool (29/07/20221) identified listed fifteen migratory fauna species or species habitat with the potential to occur within a 5km radius of the Property boundary including (Refer to Annex 1 – Desktop Search Results – PMST Report):

- Seven migratory wetland species;
- Seven migratory terrestrial species; and
- One migratory marine species.

The NC Act Wildlife Online search results (29/07/21) identified one migratory fauna species with the potential to occur within a 5km radius of the Property boundary (Refer to Annex 1 – Desktop Search Results – WildNet Search Results).

Field results

Based on the desktop review and field habitat assessment, eleven migratory species have the potential to occur within the Property boundary¹¹ (Table 11). Six migratory wetland species have a transient likelihood of occurrence, four migratory terrestrial species have a transient or moderate likelihood of occurrence, and one migratory marine species has a transient likelihood of occurrence. Of these six migratory species with the potential to occur within the Property boundary, three migratory species have the potential to occur within the Development Footprint. A Detailed Likelihood of occurrence (LoO) assessment is presented in Appendix 3 – Likelihood of Occurrence Assessment.

Migratory fauna species will primarily be restricted to the Eucalypt open forest and Aquatic habitat types within the Property boundary. Migratory fauna species will generally be visitors within Preliminary regrowth and Disturbed grassland within the Development Footprint.

Table 11. Migratory species with the potential to occur within the Property boundary.

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution/ habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
Migratory Marine Species						

¹¹ Please note, due to the nature and extent of expected impacts for the Project, the likelihood of occurrence for threatened species has been assessed for the entire Property boundary.

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution/ habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
<i>Apus pacificus</i>	Fork-tailed Swift	M	SL	They are found in scattered areas around Qld but are more widespread west of the Great Divide, and are commonly found west of the line joining Chinchilla and Hughenden. The Fork-tailed Swift is almost exclusively aerial, flying from less than 1m to at least 300 m above ground. They mostly occur over dry or open habitats, like treeless grassland and sandplains covered with spinifex or open farmland, however they are also associated with a variety of other habitats including riparian woodland and swamps, low scrub, heathland or saltmarsh.	Transient	Y
Migratory Terrestrial Species						
<i>Hirundapus caudacutus</i>	White-throated Needletail	V, M	V	In eastern Australia, it is recorded in all coastal regions of Queensland and NSW extending inland to the western slopes of the Great Dividing Range and occasionally in the adjacent inland plains. The general habitat consists of heights of less than 1m up to more than 100m above the ground. Recorded most above wooded areas, including open forest and rainforest. Roosts in trees amongst dense foliage in the canopy or in hollows.	Transient	Y

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution/ habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
<i>Cuculus optatus</i>	Horsfield's Cuckoo	M	LC	Non-breeding migrant to Aus (Sept- May). The species uses a range of vegetated habitats such as monsoon rainforest, wet sclerophyll forest, open Casuarina, Acacia or Eucalyptus woodlands and appears quite often along edges of forests, or ecotones between forest types. There are widespread records from the eastern slopes of the Great Divide from near Cooktown to the NSW border.	Transient	N
<i>Motacilla flava</i>	Yellow Wagtail	M	SL	The Yellow Wagtail is a regular but uncommon non-breeding summer visitor to northern Australia. Habitat requirements for the Yellow Wagtail are highly variable, but typically include open grassy flats near water. Habitats include open areas with low vegetation such as grasslands, pastures, reservoir open areas such as muddy or grassy edges of wetlands, rivers, irrigated farmland, reservoirs and waterholes. Resident in Queensland to Rockhampton, summer breeding migrant further south.	Transient	Y
<i>Rhipidura rufifrons</i>	Rufous Fantail	M	SL	The Rufous Fantail occurs in coastal and near coastal districts of northern and	Moderate	Y

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution/ habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				<p>eastern Australia. In east and south-east Australia, the Rufous Fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts such as Tallow-wood (<i>Eucalyptus microcorys</i>), Mountain Grey Gum (<i>E. cypellocarpa</i>), Narrow-leaved Peppermint (<i>E. radiata</i>), Mountain Ash (<i>E. regnans</i>), Alpine Ash (<i>E. delegatensis</i>), Blackbutt (<i>E. pilularis</i>) or Red Mahogany (<i>E. resinifera</i>); usually with a dense shrubby understorey often including ferns. They also occur in subtropical and temperate rainforests. They occasionally occur in secondary regrowth, following logging or disturbance in forests or rainforests. When on passage, they are sometimes recorded in drier sclerophyll forests and woodlands.</p>		
Migratory Wetland Species						
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE	CE; SL	<p>In Australia, Curlew Sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states during the non-breeding period, and also during the breeding season when many non-breeding one year old</p>	Transient	N

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution/ habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				birds remain in Australia rather than migrating north. In Queensland, scattered records occur in the Gulf of Carpentaria, as well as sparsely scattered records inland. 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 near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, reservoirs, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters. Curlew Sandpipers may roost on coastal or near-coastal lagoons and other wetlands.		
<i>Actitis hypoleucos</i>	Common Sandpiper	M	SL	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The species utilises a wide range of coastal wetlands and some inland wetlands.	Transient	N

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution/ habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				The Common Sandpiper has been recorded in deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, reservoirs and claypans. Non-breeding in Aus.		
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	M	SL	The Sharp-tailed Sandpiper is a non-breeding migrant in Australia (August-April), mostly to the south-east but are widespread in both inland and coastal locations and in both freshwater and saline habitats. It is very sparsely scattered inland in Qld. The species prefers muddy edges of shallow fresh or brackish wetlands, including lagoons, swamps, lakes and reservoirs, waterholes, soaks. They also use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry.	Transient	N
<i>Calidris melanotos</i>	Pectoral Sandpiper	M	SL	A non-breeding migrant in Australia (Sep - Jun). In Qld most records occur on the coast but scattered records have been made inland. The species is usually found in coastal areas but is occasionally found further inland. The Pectoral Sandpiper prefers shallow fresh to saline	Transient	N

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution/ habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				wetlands, but will also utilise lagoons, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.		
<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe	M	SL	Latham's Snipe is a non-breeding visitor to south-eastern Australia, and is a passage migrant through northern Australia (Jul - Apr). In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). They are also regularly recorded in or around modified or artificial habitats including pasture, ploughed paddocks, irrigation channels and drainage ditches.	Transient	N
<i>Tringa nebularia</i>	Common Greenshank, Greenshank	M	SL	The Common Greenshank does not breed in Australia, however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, reservoirs, rivers, creeks, billabongs, waterholes and inundated floodplains,	Transient	N

Scientific name	Common name	EPBC Act Status ¹	NC Act Status ²	Distribution/ habitat	Likelihood of occurrence within Property boundary	Likely to occur within Development Footprint?
				claypans and saltflats. It will also use artificial wetlands, including sewage farms and saltworks reservoirs, inundated rice crops and bores.		

1. Listed as Migratory (M) under the EPBC Act.
2. Listed as Special Least Concern (SL) under the NC Act.

3.7 Koalas and Koala habitat

Desktop results

A new Koala conservation planning framework commenced in Queensland on 7 February 2020. This framework introduced Koala priority areas that consist of large, connected areas that include Koala habitat areas as well as areas that are suitable for habitat restoration. The Cardno EcoAR (2019) was undertaken prior to the abovementioned legislation changes for the Koala and references the (now superseded) Koala Conservation in South East Queensland State Planning Regulatory Provisions.

A review of the current Queensland Koala mapping provided in the Vegetation Management Property Report (Annex 1 – Desktop Search Results) and available on Queensland Globe spatial data (Queensland Globe, 2021) shows the Property boundary contains the following Koala habitat mapping (Figure 8):

- Mapped Essential Habitat for the Koala within remnant vegetation within the Development Footprint;
- Property boundary is wholly located within Koala district A;
- Property boundary is wholly located within a Koala priority area;
- Sections containing core Koala habitat areas within the northwest and southeast of the Development Footprint and
- Sections containing Koala habitat restoration area¹² within the south of the Development Footprint and within Lot 1 on SP193446.

The WildNet Wildlife database identified one record of the Koala located within the Property boundary, within the northeastern section of the Development Footprint (Figure 8). Five Koala sightings have been recorded within and directly adjacent (within 1km) to the Property boundary in 2000, 2001, 2003 and 2010 (WildNet, 2021) (Figure 8).

¹² Koala habitat restoration areas identify land that could be restored and established as Koala habitat areas. These areas feature low threats or constraints and high conservation opportunities (Queensland Government, 2021).

The WildNet Wildlife database also records 512 records for Koala occur within a 5km radius to the Development Footprint. The Atlas of Living Australia indicates Koala are known from fifteen additional locations within a 5km radius to the Development Footprint including Bremer Reiver and Purga Creek to the north and Warrill Creek to the south (ALA, 2021). 573 Koala records have also been captured from a review of Koala Hospital Data (KoalaBase) April 1996-February 2017 within 5km of the Development Footprint (DES, 2019). Of these 573 records, 72 records were deceased, 86 were due to vehicle strikes and 152 records were due to cystitis or conjunctivitis (DES, 2019).

Cardno identified one Koala within the east of the Property boundary and outside the Development Footprint during their field assessment (Figure 8). Suitable habitat and presence of Non-juvenile Koala Habitat Trees¹³ (NJKHT) for Koala was identified within Eucalypt open forest within the Property boundary and within Preliminary regrowth within the Development Footprint. Within the Development Footprint, the outer extents of the eastern and southern boundaries contained the highest density of NJKHT, within Eucalypt open forest habitat mapped as RE 12.9-10.7 and RE 12.9-10.2.

Field results

The field assessment identified that the majority of the remnant (Category B) and high value regrowth (Category C) vegetation communities present within the Property boundary comprise suitable habitat for the Koala (Figure 5). Specifically, Eucalypt open forest and Preliminary regrowth within the Development Footprint comprises also suitable habitat for the Koala (Figure 7Figure 5). NJKHT recorded within the Property boundary included primary preferred Koala food tree species Blue Gum (*Eucalyptus tereticornis*) and Grey Gum (*Eucalyptus propinqua*) and secondary preferred Koala food tree species Spotted Gum (*Corymbia citriodora*) (AKF, 2015). Other NJKHT recorded within the Property boundary included Moreton Bay Ash (*C. tessellaris*), Narrow-leaved ironbark (*E. crebra*) and *Melaleuca spp.* which may be utilised for resting by Koalas.

Niche did not record any Koalas during the field assessment, however the results from the Koala Spot Assessment Techniques (SAT) surveys recorded Koala scats and potential Koala scratches within and in close proximity to the Development Footprint. According to Phillips & Callaghan (2011), results from the SAT surveys indicate high Koala activity levels within and adjoining the Development Footprint.

Assessment against EPBC Act referral guidelines

This section provides an assessment of Koala habitats located within the Development Footprint against the Koala Habitat Assessment Tool (Table 4 of the EPBC Act Koala Referral Guidelines (DoE, 2014)).

The habitat assessment tool assists in determining the sensitivity, value and quality of Koala habitat within a locality. Data for five primary Koala habitat attributes: Koala occurrence, vegetation composition, habitat connectivity, existing threats and recovery value are input into the tool for the purposes of the assessment. Each habitat attribute is scored between zero and two then the scores are added together to give a total out of 10 for the overall value of habitat within the locality. Where habitats score a five or more using the tool, they are to be considered habitat that is critical to the survival of the Koala (DOE, 2014).

¹³ Non-juvenile koala habitat tree means a koala habitat tree that is more than 4m high; or has a trunk with a circumference of more than 31.5cm at 1.3m above the ground (DES, 2020).

The assessment indicates that vegetation located within the Property boundary is considered habitat critical to the survival of the Koala, obtaining an overall score of 8/10. The results of the assessment carried out for the Property boundary are provided in Table 11. Data and information input into the tool included desktop sourced information, maps and datasets, as listed in Section 2 – Assessment Methodology, as well as the results from historical surveys carried out as a part of the Project (Cardno, 2019).

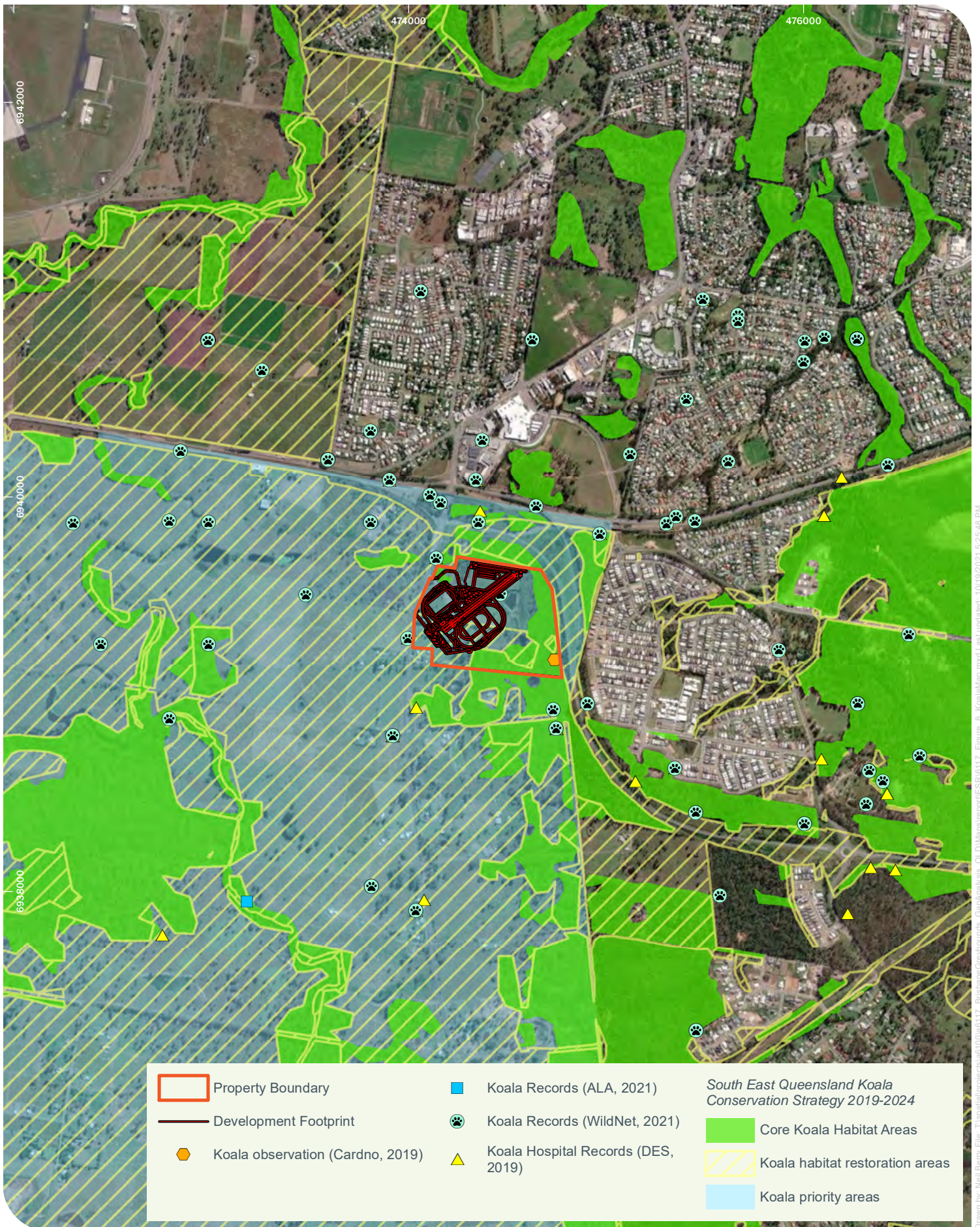
In general, the Property boundary is considered to comprise a local patch of Koala habitat (i.e. <10ha) that is contiguous with larger suitable habitats <500ha (ie. Flinders-Goolman Conservation Estate). The Development Footprint is likely to comprise habitat for the Koala in terms of resting and movement opportunities. The Property boundary is likely to provide important habitat for Koalas to eat, rest, escape predators and to potentially breed. However, the limited habitat connectivity to the north, east and west and proximity to urban threats (e.g. dogs and roads) may limit the capacity of the Development Footprint sustaining a large Koala population. Nonetheless, vegetation within the Development Footprint is considered to provide important habitat for Koala within the region and may also provide movement opportunities to larger areas of habitat.

Table 12. EPBC Act Referral Guidelines Koala Habitat Assessment Tool (DOE, 2014).

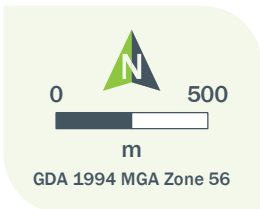
Attributes	Score	Coastal	Assessment within Property boundary
Koala occurrence	+2 (high)	Evidence of one or more koalas within the last 5 years.	2 Review of existing data including historical surveys carried out for the Project indicates the following records of Koala within the Property boundary: <ul style="list-style-type: none"> • One recorded Koala sighting of Koala within Property boundary (Cardno, 2019) • 253 recorded Koala sightings within a 2km radius of the Property boundary, and five Koala sightings are recorded within and directly adjacent (within 1km) to Property boundary in 2000, 2001, 2003 and 2010 (WildNet, 2021). • One recorded Koala sightings within 2km of the Property boundary (ALA, 2021). • 28 recorded Koala hospital records within 2km of the Property boundary (DES, 2019).
	+1 (medium)	Evidence of one or more koalas within 2km of the edge of the impact area within the last 10 years	
	0 (low)	None of the above	
Vegetation composition	+2 (high)	Has forest or woodland with 2 or more known koala food tree species, OR	2 The Property boundary supports Eucalypt open forest dominated by

Attributes	Score	Coastal	Assessment within Property boundary
		1 food tree species that alone accounts for >50% of the vegetation in the relevant strata.	primary and secondary koala food trees.
	+1 (medium)	Has forest or woodland with only 1 species of known koala food tree present.	
	0 (low)	None of the above.	
Habitat connectivity	+2 (high)	Area is part of a contiguous landscape ≥ 500 ha.	2 The Property boundary is connected to the south to Flinders-Goolman Conservation Estate, which is over 200ha. To note, the Property boundary and adjoining habitats have poor vegetative connectivity and are largely surrounded by urban areas to the north, east and west.
	+1 (medium)	Area is part of a contiguous landscape <500ha, but ≥ 300 ha.	
	0 (low)	None of the above.	
Key existing threats	+2 (high)	Little or no evidence of koala mortality from vehicle strike or dog attack at present in areas that score 1 or 2 for koala occurrence, OR Areas which score 0 for koala occurrence and have no dog or vehicle threat present.	0 Review of Koala hospital records within 2km of the Property boundary indicates 28 Koala injuries or deaths (DES, 2019). Of these 28 records, six records were deceased, eight were due to vehicle strikes and three records were due to cystitis or conjunctivitis (DES, 2019). Given the urban nature of surrounds to Property boundary, there is likely to be a moderate to high threat level from dog and vehicle strike, particularly given a lack of suitable movement corridors to the north.
	+1 (medium)	Evidence of infrequent or irregular koala mortality from vehicle strike or dog attack at present in areas that score 1 or 2 for koala occurrence, OR Areas which score 0 for koala occurrence and are likely to have some degree of dog or vehicle threat present.	
	0 (low)	Evidence of frequent or regular koala mortality from vehicle strike or dog attack in the Property boundary at present, OR Areas which score 0 for koala occurrence and have a significant dog or vehicle threat present.	
Recovery value	+2 (high)	Habitat is likely to be important for achieving the interim recovery objectives for the relevant context, as outlined in Table 1 of the guidelines.	2 Vegetation within the Property boundary contains remnant and regrowth Eucalypt open forest habitat connected to the south with remnant vegetation and Flinders-
	+1 (medium)	Uncertain whether the habitat is important for achieving the interim	

Attributes	Score	Coastal	Assessment within Property boundary
		recovery objectives for the relevant context, as outlined in Table 1 of the guidelines.	Goolman Conservation Estate.
	0 (low)	Habitat is unlikely to be important for achieving the interim recovery objectives for the relevant context, as outlined in Table 1 of the guidelines.	However, habitat within the Property boundary is fragmented to the north, east and west by urban areas and major highways. Habitat within the Property boundary is considered likely to be important for achieving the recovery of the Koala.
Total			8



Property Boundary	Koala Records (ALA, 2021)	<i>South East Queensland Koala Conservation Strategy 2019-2024</i> Core Koala Habitat Areas Koala habitat restoration areas Koala priority areas
Development Footprint	Koala Records (WildNet, 2021)	
Koala observation (Cardno, 2019)	Koala Hospital Records (DES, 2019)	



Koala map
Greater Brisbane Greyhounds Club

Figure 8

Niche PM: Lisa Carter
Niche Proj. #: 6117
Client: ADG

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3.8 Biosecurity matters (invasive species and pathogens)

Desktop results

The Development Footprint is located within the following biosecurity zones (Queensland Globe, 2021):

- Cattle tick infested area;
- Fire ant biosecurity zone 1;
- Sugar cane biosecurity zone 5;
- Papaya ringspot biosecurity zone 1;
- Grape phylloxera risk zone; and
- Southern banana biosecurity zone.

Since the Property boundary is located within a Fire ant biosecurity zone, conditions apply for the Project with regard to the movement of fire ant carriers (such as soil or mulch) (DAF, 2020).

The Commonwealth Government PMST Report returns 32 invasive flora and fauna species with the potential to occur within the Property boundary, listed in Annex 1 – Desktop Search Results – PMST Report. This includes 20 Weeds of National Significance.

The Australian Pest Distribution Survey (APDS) QSpatial dataset (Biosecurity Queensland) returned fifteen invasive flora species with the potential to occur within the Property boundary (Table 13) (Queensland Globe, 2021). Of these results, *Tropical Soda Apple (*Solanum viarum*) is a prohibited invasive plant and *Prickly Pear (*Opuntia tomentosa*) is a restricted invasive plant, both which are notifiable¹⁴ according to the Queensland *Biosecurity Act 2014* (Biosecurity Act). The Tropical Soda Apple is a prohibited invasive species which does not currently occur within Queensland and as such, it is unlikely to currently occur within the Property boundary. No other identified invasive flora species are notifiable invasive species according to the Biosecurity Act.

According to the *City of Ipswich Biosecurity Plan 2018-2023*, the Tropical Soda Apple is identified as “collaborative management (prohibited matter)” within the Ipswich LGA. All other identified invasive species are managed by the “containment strategy” or “asset-based protection strategy” with the Ipswich LGA (ICC, 2018).

Table 13. Invasive flora species with the potential to occur within the Property boundary.

Invasive flora species	State restriction requirements
African boxthorn (<i>Lycium ferocissimum</i>)*	Restricted, category 3
Asparagus fern (<i>Asparagoides spp.</i>)*	Restricted, category 3
Broadleaved pepper tree (<i>Schinus terebinthifolius</i>)*	Restricted, category 3
Camphor laurel (<i>Cinnamomum camphora</i>)*	Restricted, category 3
Cat’s claw creeper (<i>Dolichandra unguis-cati</i>)*	Restricted, category 3

¹⁴ A species that should be reported to Biosecurity Queensland.

Invasive flora species	State restriction requirements
Groundsel bush (<i>Baccharis halimifolia</i>)*	Restricted, Category 3
Fireweed (<i>Senecio madagascariensis</i>)*	Restricted, Category 3
Lantana (<i>Lantana camara</i>)*	Restricted, Category 3
Mother of millions (<i>Bryophyllum spp.</i>)*	Restricted, Category 3
Parthenium weed (<i>Parthenium hysterophorus</i>)*	Restricted, Category 3
Prickly acacia (<i>Vacchellia nilotica</i>)*	Restricted, Category 3
Prickly pear (<i>Opuntia stricta</i>)*	Notifiable, Restricted, Category 3
Rat's tail grass (<i>Sporobolus spp.</i>)	Restricted, Category 3
Tropical Soda apple (<i>Solanum viarum</i>)*	Prohibited
Water hyacinth (<i>Eichhornia crassipes</i>)*	Restricted, Category 3

Cardno identified restricted invasive plants throughout the Property boundary and in varying densities depending on the habitat present. The following invasive flora species and their classification under the Biosecurity Act were observed by Cardno within the Property boundary (Figure 6):

- Lantana (*Lantana camara*), listed as a Restricted Category 3 invasive plant;
- Prickly Pear (*O. stricta*), listed as a notifiable and Restricted Category 3 invasive plant;
- Creeping Lantana (*L. montevidensis*), listed as a Restricted Category 3 invasive plant;
- Mother of Millions (*Bryophyllum delagoense*), listed as a Restricted Category 3 invasive plant; and
- Groundsel (*Baccharis halimifolia*), listed as a Restricted Category 3 invasive plant.

Lantana (*Lantana camara*) was the most prevalent and widespread Restricted invasive plants within the Development Footprint. Figure 6 shows Cardno's recorded sighting of invasive flora species within the Development Footprint.

Field results

The field assessment confirmed the presence and relative densities of the abovementioned invasive flora species within the Property boundary. In addition, Fireweed (*Senecio madagascariensis*) was observed with the Development Footprint along access tracks. Figure 6 shows the Niche's recorded sighting of invasive flora species within the Property boundary.

3.9 Waste and hazardous materials

Desktop results

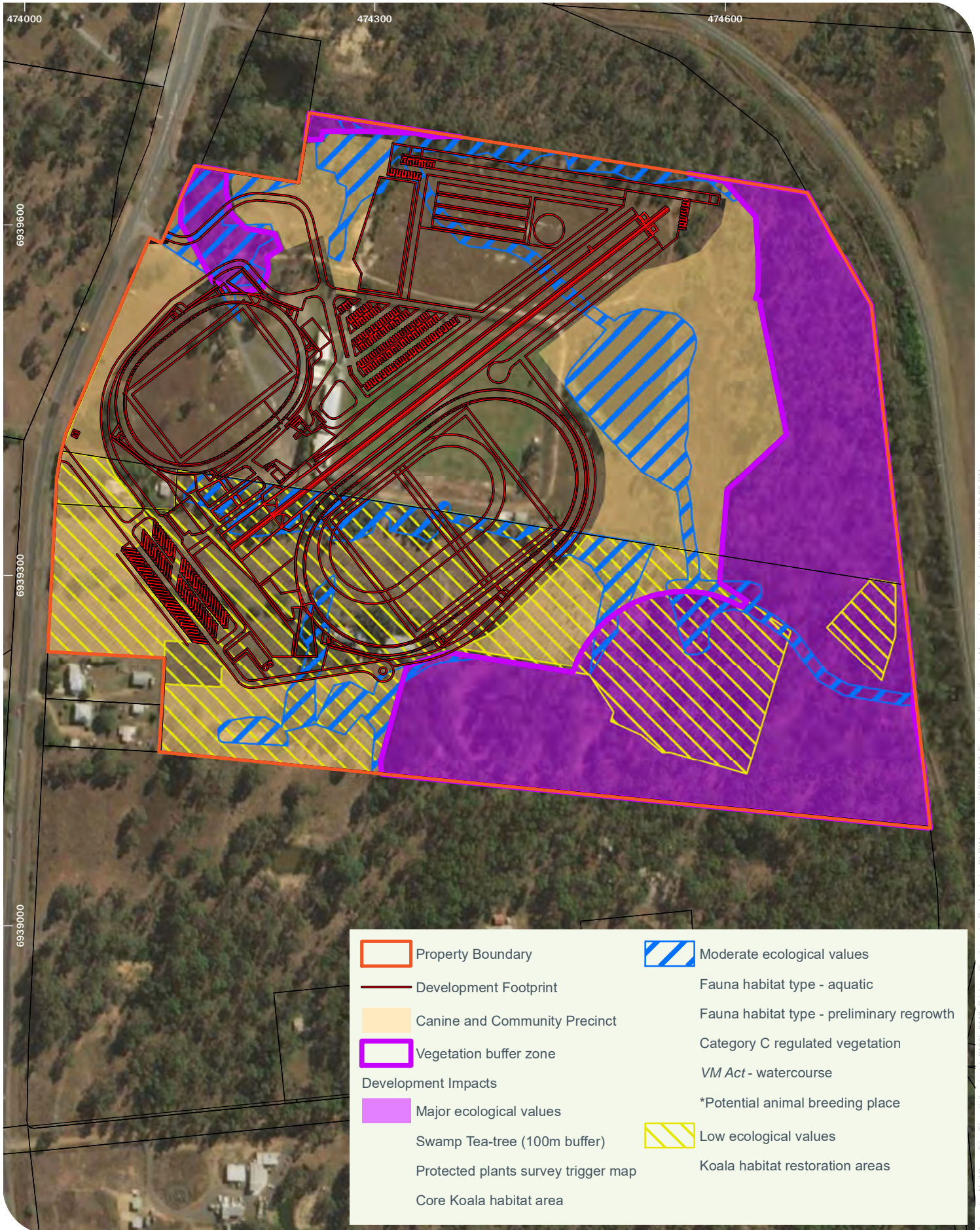
Typical construction wastes (such as concrete, steel, asphalt, vegetation, rock and soil) are expected to be produced as a result of the Project. The nearest Waste Transfer Station, Landfill and Recycling Centre (waste facility) is located at the Lantrak Waste and Recycling Facility, approximately 11km east from the Development Footprint.

Cardno identified one timber stockpile within the eastern section of the Development Footprint during their field assessment (Figure 7).

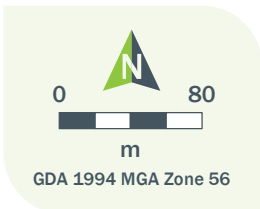
Correspondence with Racing Queensland indicated that the northwestern canine and community precinct section of the Development Footprint (Plate 2) had previously contained uncontrolled fill. Niche understands that searches have been undertaken on the Contaminated Land Register (CLR) or Environmental Management Register (EMR) for the Project and the subject properties of the Property boundary are not listed on the CLR or EMR.

Field results

The field assessment did not locate any timber stockpiles or regulated waste or hazardous material within the Development Footprint. However, domestic rubbish piles were observed within the Development Footprint.



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**Animal breeding places are based on incidental records only and are not comprehensive at this stage.*

Niche PM: Lisa Carter
Niche Proj. #: 6117
Client: ADG

Project Impacts Map Greater Brisbane Greyhounds Club

Figure 9

4. Project impacts

4.1 Nature and extent of impacts

The Property boundary covers approximately 35ha of land that is expected to involve the following activities as per Project's Proposed Masterplan components received from Cox Architecture 15 October 2021 Drawing Number: A-11-22 (Plate 2) (Figure 1):

- Development Footprint (Figure 9): Approximately 15ha of land within the Property boundary supporting the extent of the Project design (based on design drawings for the Project received on 15/10/2021) and associated development requirements, including the community use area in the northern section.
- Canine and community use precinct (Figure 9): Approximately 10ha of land intended for canine and community use precinct within the Property boundary.
- Vegetation Buffer Zone (Figure 9): Approximately 10ha of vegetation along the eastern, western and northern sections of the Property boundary that will be retained and protected for the Project.

The Project's impact on environmental values are assessed below according to their categorisation as major ecological values, moderate ecological values and low ecological values with respect to the extents of the Development Footprint, Canine and community use precinct and Vegetation buffer zone within the Property boundary (Figure 9).

Development Footprint

The Development Footprint has been assessed as having known and high level disturbance for the Project as it will require vegetation clearing and ground disturbance to develop greyhound racing tracks, facilities, carparks and the northern community use area. The Development Footprint is located centrally within the Property boundary, primarily within previously disturbed lands, nonetheless the following impacts are expected to occur as a result of the Project.

Clearing and/or ground disturbance is expected to be required across the Development Footprint. The majority of the Development Footprint (13.3ha, ie. 88%) is located within previously disturbed or cleared land. Nonetheless, vegetation clearing and/or disturbances are proposed for the Project within the following areas supporting the following ecological values:

- **Major ecological values:** Up to 1.7ha (i.e. 4.86% within the Property boundary) of major ecological value land which comprises:
 - Matter of National Environmental Significance (MNES) Koala habitat that is considered to be critical to the survival of the Koala, scoring 8/10 for the *Environment Protection and Biodiversity Conservation Act 1999* Koala Referral Guidelines (DOE, 2014)
- Up to 0.25ha (i.e. 0.7% within the Property boundary) of major ecological value land which comprises:
 - Matter of State Environmental Significance (MSES) mapped High Risk area for protected plants
 - MSES mapped Core Koala habitat area within a Koala priority area. However, vegetation clearing for the Project has been minimised to include 0.05ha of this mapped Core Koala habitat only, which contains approximately 20 Non-juvenile Koala Habitat Trees (NJKHT) that is, Eucalypt species >10cm DBH
- Up to 1.46ha (i.e. 4% within the Property boundary) of major ecological value land within areas mapped as Preliminary regrowth which includes MNES and/or MSES threatened fauna habitat for Grey-headed Flying-fox and Collared Delma and includes an additional estimated 70 NJKHT
- **Moderate ecological values:** Up to 0.001ha (i.e. 0.002% within the Property boundary) of moderate ecological value land which comprises:

- MSES Regulated vegetation that is mapped as High-value regrowth (Category C) containing Of Concern Regional Ecosystem (RE) 12.9-10.7
- MSES mapped Essential Habitat for the Koala.
- Up to 0.23ha (i.e. 0.66% within the Property boundary) of MSES - Regulated vegetation (defined watercourse) within the bed and banks of a Watercourse
- Potential animal breeding places (including one incidental hollow recorded), potentially used by Least Concern and/or colonial breeding species
- **Low ecological values:** Low ecological value land which comprises:
 - Up to 4.8ha (i.e. 13.7% within the Property boundary) of a mapped Koala restoration area
 - Up to 10.46ha (i.e. 29% within the Property boundary) of habitat for a variety of Least Concern flora and fauna species within areas mapped as Preliminary regrowth and Disturbed grasslands

Disturbance (including direct and indirect impacts) for the Development Footprint is expected to be required for 15ha of land supporting the following ecological values:

- **Major ecological values:** potential indirect impacts in the vicinity of a potential MNES Threatened Ecological Community (TEC) Swamp Tea-tree Forest of Southeast Queensland, listed as Critically Endangered under the EPBC Act.
- **Low ecological values:** potential direct and indirect impacts are expected to occur as a result of the Development Footprint, including:
 - Ground disturbance including cut and fill is expected to occur within uncontrolled fill areas within the northern community use area (Plate 2)
 - Ground disturbance within a Fire ant biosecurity zone, and potential movement of fire ant carriers (such as soil or mulch) may occur
 - Indirect impacts to reservoirs and drainage lines such as altered hydrology, erosion and sedimentation are likely to occur
 - Disturbance is likely to promote the colonisation of new or established invasive flora and fauna species
 - Indirect impacts of noise, vibration and air quality are likely to occur to sensitive receptors and local fauna species.

Canine and community use precinct

The Canine and community use precinct is not expected to require tree clearing, however it is assessed as having potential and moderate level disturbance for the Project to accommodate GBGC and community use activities such as walking paths. Potential temporary laydown areas and construction facilities may also be required within this Canine and community use precinct during the construction phase. However, these laydown areas will be kept within existing cleared areas and away from sensitive environmental values.

The Canine and community use precinct includes 10ha of land and depending on the proposed activity, impacts have the potential to occur within areas supporting the following ecological values:

- **Major ecological values:** Up to 1ha (i.e. 2.85% within the Property boundary) of major ecological value land which comprises:
 - MNES Koala habitat that is considered to be critical to the survival of the Koala. To note, this land also includes a Koala priority area and NJKHT.
 - Potential animal breeding places, potentially used by Least Concern and/or colonial breeding species
 - MNES and/or MSES threatened fauna habitat for Grey-headed Flying-fox and Collared Delma within areas mapped as Preliminary regrowth

- MNES and/or MSES potential threatened migratory species habitat within areas mapped as Preliminary regrowth
- Including up to 2ha (i.e. 5.7% within the Property boundary) of major ecological value land which includes:
 - MNES and/or MSES threatened migratory species habitat within areas mapped as Aquatic habitat
- **Moderate ecological values:** Up to 2.3ha (i.e. 6.5% within the Property boundary) of moderate ecological value land which comprises:
 - 0.3ha (i.e. 0.85% within the Property boundary) of MSES - Regulated vegetation (defined watercourse)
 - 2ha (i.e. 5.7% within the Property boundary) comprising reservoirs and drainage lines.
- **Low ecological values:** Including up to 10ha (i.e. 28.5% within the Property boundary) of low ecological value land which comprises:
 - A Koala restoration area
 - Fauna habitat for a variety of Least Concern flora and fauna species within areas mapped as Aquatic habitat, Preliminary regrowth and Disturbed grasslands
 - Ground disturbance within a Fire ant biosecurity zone, and potential movement of fire ant carriers (such as soil or mulch) may occur
 - Foot/pedestrian traffic (including dog walking) has the potential to impact native flora and fauna species
 - Disturbance is likely to promote the colonisation of new or established invasive flora and fauna species.

Indirect impacts for the Canine and community use precinct related to the potential moderate disturbance of up to 10ha of land and will include the following ecological values:

- **Major ecological values:** potential indirect impacts in the vicinity of a potential MNES Threatened Ecological Community (TEC) Swamp Tea-tree Forest of Southeast Queensland, listed as Critically Endangered under the EPBC Act.
- **Low ecological values:** Indirect impacts of noise, vibration and air quality are likely to occur to sensitive receptors and local fauna species.

Vegetation Buffer Zone

This section within the Property boundary will be retained and protected. Also, it is understood that no foot/pedestrian traffic (including dog walking) will occur within this section. As such, direct impacts as a result of the Project are expected to be unlikely or minor within this section. However, indirect impacts to sensitive receptors and local fauna species including alterations to hydrology, erosion/sedimentation, light, noise, vibration and air quality have the potential to occur.

4.2 Ecosystem and biodiversity impacts

A number of potential impacts on ecosystem function and biodiversity have been identified as risks related to the construction of the Project, including:

- Vegetation removal
- Loss, disturbance and fragmentation of fauna habitat
- Fauna mortality
- Specific impacts to Koala and habitat
- Specific impacts to Swamp tea-tree and habitat
- Alteration to hydrology, erosion and sedimentation patterns

- Edge effects
- Invasive species and disease
- Disturbance of potential contaminated soils
- Indirect impacts of light, noise, air quality and vibration.

Potential impacts on ecosystem function and biodiversity will now be discussed in the context of the Project design components: Development Footprint, Canine and community use precinct and Vegetation buffer zone.

Vegetation removal

Vegetation values within the Property boundary has been discussed in Section 3.5 – Vegetation communities. While a large portion of the Development Footprint (13.3ha, i.e. 88%) has been located over previously cleared lands for the existing sporting field and rural property, the Development Footprint (Figure 9) covers 15ha of land and is expected to require the clearing and/or disturbance of the following vegetation as previously described in Section 4.1:

- Approximately 0.25ha (i.e. 0.7% within the Property boundary) of vegetation that supports the following ecological values:
 - Mapped core Koala habitat which includes approximately 20 NJKHT (as estimated for the Development Footprint from the Project's tree survey data¹⁵)
 - Mapped High Risk area for protected plants
- Approximately 0.001ha (i.e. 0.002% within the Property boundary) of vegetation that is mapped high value regrowth (Category C) containing Of Concern RE 12.9-10.7 and Essential Habitat for the Koala
- Approximately 0.23ha (i.e. 0.66% within the Property boundary) of a mapped Watercourse that is MSES - Regulated vegetation (defined watercourse)
- Approximately 1.46ha of Preliminary regrowth and 10ha of Disturbed grasslands (i.e. 4% and 28.5% within the Property boundary, respectively) that is potential habitat for threatened flora species, threatened fauna species, threatened migratory species and a variety of Least Concern flora and fauna, including an additional 70 NJKHT.

The abovementioned vegetation provides ecosystem services, biodiversity, potential habitat for threatened species and habitat for a variety of Least Concern species.

A Significant Impact Assessment (SIA) may be required as a result of vegetation removal from the Project to environmental values listed as an MNES or MSES (such as TEC, threatened flora and fauna species and some regulated vegetation outlined above in Section 4.1 – Nature and extent of impacts) in accordance with the EPBC Act *Matters of National Environmental Significance Significant Impact Guidelines 1.1* (DOE, 2013), EPBC Act *Referral Guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)* (DoE, 2014) and *Queensland Environmental Offsets Policy: Significant Residual Impact Guideline December 2014* (Queensland Government, 2014).

Depending on the proposed activity for the Canine and community use precinct, impacts have the potential to include:

- Disturbance to approximately 1ha (i.e. 2.85% within the Property boundary) of Preliminary regrowth, 7ha (i.e. 20% within the Property boundary) of Disturbed grasslands and 2ha (i.e. 5.7% within the Property boundary) of Aquatic habitat that is potential habitat for threatened flora species, threatened fauna species, threatened migratory species and a variety of least concern species

¹⁵ This is an estimate only for the purposes of this assessment and assumes that the tree survey data captures a comprehensive and accurate coverage of the trees within the Property boundary with a DBH >10cm

- Disturbance to approximately 0.3ha (i.e. 0.85% within the Property boundary) of a MSES - Regulated vegetation (defined watercourse).

The abovementioned vegetation provides ecosystem services, biodiversity, potential habitat for threatened species and habitat for a variety of Least Concern species. Project design components and impacts of this abovementioned vegetation should be established to determine if further assessment is required (such as a SIA) and appropriate mitigation and management measures.

It is unlikely that an SIA will be required for migratory species for the Project, due to the limited clearing requirements within potential Preliminary regrowth habitat (approximately 2.45ha in total or 7% within the Property boundary) and the transient nature of the migratory species within the Property boundary.

The Vegetation Buffer Zone will be retained and protected for the Project. As such, direct impacts are not expected to vegetation within this area and have not been assessed as part of this assessment.

Overall, mitigation measures will be required to address the loss and disturbance of vegetation as a result of the Project and will be addressed within additional Project documentation such as a Vegetation Management Plan, Bushfire Management Plan, Landscape Plan and Revegetation and Rehabilitation Plan.

Loss, disturbance and fragmentation of fauna habitat

Fauna habitat values within the Property boundary has been discussed in Section 3.6 – Fauna and fauna habitat. The Development Footprint is identified to require the clearing of fauna habitat within approximately 0.25ha of mapped core Koala habitat, 1.46ha of Preliminary regrowth and 10ha of Disturbed grasslands. In addition, based on the Project's tree survey data, vegetation clearing for the Project is expected to include an estimated 20 NJKHT within the mapped core Koala habitat areas and a further 70 NJKHT across the remainder of the Development Footprint.

These areas contain foraging opportunities and movement pathways for threatened fauna and other Least Concern fauna. Vegetation clearing within Preliminary regrowth particularly has the potential to impact habitat for threatened flora and fauna species. Clearing of one potential animal breeding place (hollow) may also be required for the Development Footprint, however this was an incidental record only and animal breeding places have not been comprehensively mapped at this stage. Depending on the type of species utilising this potential animal breeding place, a low risk or high risk Species Management Program (SMP) may be required to be prepared for the Project and subsequently approved by Department of Environment and Science (DES).

Disturbance to fauna habitat is considered likely to occur across the entire Property boundary as a result of increased noise, light and vibrational impacts occurring during construction of the Project and long-term as a result of the requirements for the greyhound racing track. Light spill and noise/vibrational impacts on the The Vegetation buffer zone has the potential to impact fauna movements and use of the habitat areas, particularly for nocturnal species, including the Koala. In addition, the presence of domestic dogs (i.e. greyhounds) within the adjoining Property boundary as a result of the Project has the potential to deter some species from utilising habitat within close proximity to the Development Footprint.

A SIA may be required as a result of loss, disturbance and fragmentation of fauna habitat from the Project to environmental values listed as an MNES or MSES (outlined above in Section 4.1 – Nature and extent of impacts).

Depending on the proposed activity (such as walking paths) for the Canine and community use precinct, additional impacts have the potential to occur for NJKHT and within 1ha of Preliminary regrowth, 7ha of

Disturbed grasslands and 2ha of Aquatic habitat for a variety of least concern species. These areas contain foraging opportunities and movement pathways for threatened fauna and other Least Concern fauna. Vegetation clearing within Preliminary regrowth particularly has the potential to impact habitat for threatened flora and fauna species. If clearing of animal breeding places is required for the Canine and community use precinct, then a low risk or high risk SMP may be required for the Project and subsequently approved by DES.

It is understood that the Vegetation buffer zone will retain all fauna habitat. As such, direct impacts are not expected to fauna habitat within this area and have not been assessed as part of this assessment.

Overall, the Project also has the potential to disturb fauna habitat on a local scale by modifying or fragmenting east-west movement pathways across the Property boundary itself or constructing barriers to fauna movement. On a regional scale, vegetation connectivity and fauna movement pathways will be reduced from the Property boundary to the Flinders-Goolman Conservation Estate to the south. Mitigation measures will be required to address the loss, disturbance and fragmentation of fauna habitat/breeding places as a result of the Project and will be addressed within additional Project documentation such as a Flora and Fauna Management Plan.

Fauna mortality

For the Development Footprint and Canine and community use precinct, activities such as vegetation clearing, fragmentation of fauna movement corridors and the introduction and increased traffic on roads and driveways, particularly in the northwest, may directly impact fauna by causing vehicle strikes. Fauna mortality may also occur as a result of indirect impacts through fragmenting habitat and reducing available movement pathways, rest sites and shelter areas making them vulnerable to predatory species such as Brown Goshawk (*Accipiter fasciatus*) and domestic animals.

While Greyhounds are expected to be present within the Property boundary in a strictly controlled environment, the introduction of racing greyhounds to the Development Footprint and Canine and community use precinct has the potential to cause fauna mortality or injury to local native species. Mitigation measures such as road design (eg. speed humps) and reduced speed signage will be implemented to manage the potential risk of fauna mortality or injury as a result of the Project.

Specific impacts to Koala and habitat

Koala and habitat values are outlined further in Section 3.7 – Koala and Koala habitat. Briefly, high Koala activity and habitat critical to the survival of the Koala was identified within the Property boundary, specifically within the northwest and southeast of the Property boundary. For the Development Footprint, clearing and/or disturbance is expected to required across 15ha of land mapped within a State-listed Koala priority area supporting the following additional values:

- Koala habitat that is considered to be critical to the survival of the Koala, scoring 8/10 for the EPBC Act Koala Referral Guidelines (DOE, 2014)
- Approximately 0.05ha of mapped core Koala habitat
- Approximately 0.001ha of Koala Essential Habitat
- Approximately 4.8ha of land within a mapped Koala restoration area
- Approximately 90 NJKHT based on the Project's tree survey data (including 20 NJKHT within mapped core Koala habitat and 70 NJKHT across other areas of the Development Footprint).

Depending on the proposed activity for the Canine and community use precinct, impacts have the potential to directly and indirectly impact on Koala habitat and NJKHT.

Loss, disturbance and fragmentation of habitat critical to the survival of the Koala is likely to occur as a result of the Project, specifically in terms of impacting local and regional movement pathways, foraging opportunities, rest sites and shelter areas which may increase risk of predation by domestic dogs including racing greyhounds. An SIA and EPBC Act Referral to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) is recommended to determine if the Project is likely to result in a significant impact to the Koala and to satisfy approval requirements.

Vegetation clearing of Koala habitat and NJKHT requires sequential vegetation clearing and a Koala spotter to be present, in accordance with the *Nature Conservation (Koala Conservation) Plan 2017*, to minimise the risk of causing injury or mortality to Koalas during construction.

Fauna sensitive pathway and fence design strategies will be required to ensure that the Project continues to facilitate safe Koala movement throughout the Property boundary (outlined below in Section 5 – Mitigation measures).

Specific impacts to Swamp tea-tree and habitat

Threatened flora values for Swamp Tea-tree are outlined in Section 3.5 – Flora. For the Development Footprint, clearing is expected to impact approximately 0.25ha of mapped High Risk area for protected plants. Clearing for the Project within the mapped High Risk area for protected plants requires further assessment to be undertaken to satisfy approvals requirements with respect to the NC Act, including seasonal surveys, a Flora Survey Report and associated permits/notifications in accordance with the Flora Survey Guidelines – Protected Plants (DES, 2020).

Vegetation clearing for the Development Footprint is expected to avoid all known locations and associated habitat (i.e. within 100m of known records of Swamp tea-tree) and the extent of the Vegetation Buffer Zone, has been extended to ensure that a 100m buffer of Swamp Tea Tree is retained and protected.

However, depending on the proposed activities within the Canine and community use precinct, impacts have the potential to occur within adjoining habitat for the Swamp Tea-tree (i.e. habitat adjacent the 100m buffer of known records of Swamp tea-tree).

Activities for the Development Footprint and Canine and community use precinct also have potential to indirectly impact Swamp Tea-tree habitat through alteration of hydrology and surface drainage patterns. The Swamp Tea-tree has specific soil and drainage preferences which are sensitive to environmental change (Queensland Government, 2021).

The Vegetation Buffer Zone will retain all vegetation that is within the mapped High Risk area for protected plants and additional assessment and permits are not likely to be required for this area.

Alteration to hydrology, erosion and sedimentation patterns

Alteration to hydrology, erosion and sedimentation patterns have the potential to occur within the Development Footprint and Canine and community use precinct as a result of vegetation clearing, ground disturbance, stockpiling and temporary construction activities for the Project. This has the potential to impact:

- The structure and condition of a potential TEC Swamp Tea-tree Forest of Southeast Queensland that is located outside the Property boundary. This TEC has specific soil and drainage preferences) which are sensitive to environmental change (Commonwealth of Australia, 2021)
- Impact water quality within the Watercourse, reservoirs and drainage lines within the Property boundary

- Impact riparian and aquatic fauna habitat within the Property boundary.

Further assessment is recommended to determine the presence or absence of the TEC Swamp Tea-tree Forest of Southeast Queensland within the vicinity to the Property boundary, in accordance with the TEC's Approved Conservation Advice. If the TEC occurs within the vicinity to the Property boundary, then an SIA is recommended to determine the Project's potential impact to the TEC.

Mitigation measures have been prepared to address alteration to hydrology, erosion and sedimentation patterns as a result of the Project, including a stormwater catchment methodology presented in the Site Based Stormwater Management Plan (prepared by ADG Engineers) which is based on retaining the pre-developed flow regime, to ensure hydrology changes do not adversely impact on Watercourse, reservoirs and Swamp tea-tree habitat.

Edge effects

Edge associated impacts are zones of changed environmental conditions (i.e. altered light levels, wind speed and/or temperature) occurring along the edges of habitat fragments. These new environmental conditions can promote the growth of different vegetation types (including invasive flora species) and allow invasion by invasive fauna species specialising in edge habitats. Vegetation clearing, ground disturbance and road construction for the Development Footprint (including road construction), and potential activities proposed for the Canine and community use precinct have the potential to create edge effects for the Project.

Mitigation measures are recommended to be developed to manage Project impacts to edge effects, including management measures for weeds and pests. Other mitigation measures to address the potential risk of edge effects and improve habitat values adjoining the Project should be incorporated into the Landscape Report, including a and Revegetation and Rehabilitation Plan.

Invasive species and disease

A variety of invasive species were identified within the Property boundary or with the potential to occur within the Property boundary (Section 3.8 – Biosecurity matters), including the Fire ant and restricted invasive plant Prickly Pear (*Opuntia stricta*). Activities for the Development Footprint and Canine and community use precinct such as vegetation clearing, ground disturbance, creation of roads/pathways and foot traffic generally create favourable conditions for the spread or colonisation of new or established invasive (flora and fauna) species and disease. Generally, invasive species are, or are likely to become, a significant biosecurity risk and problem for the Project in terms of public amenity, or the environment (that is ecosystems and habitat) (DAF, 2021). While the overall disturbed nature of the Project reduces the risk of this impact, mitigation measures will be required to address this potential risk of spread or colonisation of invasive species.

In particular, since the Property boundary is located within a Fire ant biosecurity zone, conditions apply for the Project with regard to the movement of fire ant carriers¹⁶ (DAF, 2020). For example, soil from Fire ant biosecurity zones is considered high risk for the spread of fire ants (DAF, 2020). It is recommended that a Biosecurity Management Plan and Fire Ant Management Plan is developed for the Project to mitigate impacts from invasive species.

¹⁶ Includes soil (e.g. fill, clay, scrapings, and any material removed from the ground at a site where earthworks are being carried out), mulch, animal manures, baled hay or straw, potted plants, turf, other carriers including composted material that is a product or by-product of mining or quarrying (e.g. gravels, sands).

Disturbance of potential contaminated soils

Uncontrolled fill within the northwestern canine and community use precinct within the Development Footprint indicates the potential for regulated or hazardous waste requirements for the Project (Section 3.9 – Waste and hazardous materials). Activities for the Development Footprint (and potentially Canine and community use precinct) such as ground disturbance including cut and fill and alteration to hydrology, erosion and sedimentation patterns has the potential to expose contaminated soils or waste as a result of the Project. However, Niche understands that searches on the CLR and EMR register have been undertaken and returned negative results for the northwestern canine and community use precinct within the Development Footprint. Soil assessment and geotechnical survey have not been included in the scope of this report and are expected to be addressed within either the Engineering Services Report or Geotechnical Report for the Project.

Indirect impacts of noise, air quality and vibration

Sensitive receptors have been identified at 12 locations within approximately 500m to the Property boundary (Section 1.3.2 – Surrounding areas and sensitive receptors). All construction and post-construction activities for the Project have the potential to impact 12 locations of sensitive receptors.

It is recommended that acoustic assessment data, noise and vibration and air quality are suitably addressed within the Project Construction Environmental Management Plan to be developed for the Project to mitigate air quality, noise and vibration risks associated with the construction phase of the Project.

Niche understands that investigations regarding post-construction light, noise, vibration and air emissions to sensitive receptors have been completed as part of a Noise Impact Assessment Report (Cardno, 2021) and Track Lighting Report (NDYLight Lighting Design, 2021). To note, the Noise Impact Assessment report and Track Lighting Report have identified the 50 x private dwellings within a housing estate (coordinates: -27.6690, 152.7460) will not be impacted by light, noise, vibration and air emissions post-construction for the Project.

Comprehensive community consultation that has been directed and approved by the Queensland Department of State Development, Infrastructure, Local Government and Planning is underway and will continue throughout the Project's design and construction phases to inform and consult sensitive receptors near the Project regarding light, noise, vibration, and air quality potential impacts.

5. Mitigation measures

5.1 Mitigation hierarchy

Mitigation measures for the Project are recommended to follow the hierarchy of: avoid, minimise, mitigate, offset to ensure that impacts resulting from the Project are appropriately managed.

5.2 Proposed avoidance

As per correspondence with Racing Queensland on 19 October 2021, the Project has undergone an Options Analysis for two potential Project properties in 2017. Upon selection of a suitable property (this Property boundary outlined within this EnvAR), a due diligence assessment and business case was completed for the Project. Following on approval of the business case for the Property boundary, RQ engaged a team of consultants to refine the masterplan design for the Project. This led to further investigations, and five more layout options were considered taking on board a more detailed review of the design, engineering, town planning, ecology and geotechnical constraints and their influence on the outcomes of the design process.

The design of the masterplan for the Project has involved assessment of a number of various design options, including investigation of at least three (3) masterplan options (i.e. Masterplan Options 1A, 2A and 2C developed by Cox Architecture and Racing Queensland) that had alternative placements of the one-turn, two-turn and straight turn tracks across the Property boundary. The current Project design (most similar to Masterplan Option 1A) is the most compact layout option and has been further redesigned and modified over the course of the design process to locate the Development Footprint within previously disturbed areas as far as practical thereby avoiding impacts to remnant (Category B) vegetation and Endangered REs. In addition, the following masterplan design modifications for the Project have been made in order to avoid or minimise disturbances to ecological values, in particular Koala habitat (pers. comm. Racing Queensland, 19 October 2021):

- An area RQ had identified for future commercial development in the northwest of the Property boundary was removed from the proposed masterplan layout
- RQ purchased additional land to improve the operational efficiency of the masterplan layout and maintain a buffer to vegetation and fauna habitat
- Reduction of areas identified for racing operations and efficiency including the venue entrance
- Introduction of engineering solutions such as retaining walls to reduce the impact to vegetation and Koala habitat, where appropriate
- Changing the orientation of different building, tracks roads to minimise impacts to vegetation and fauna habitat.

The avoidance of ecological constraints for the placement and layout of the Development Footprint has been balanced in accordance with the requirements of other design components for the Project including ground level requirements (where cut and fill results in steep entrances and/ or retaining wall requirements) and safety requirements (in terms of road angles and turns).

In addition to the masterplan layout, design elements have also been modified and options assessed at a finer scale in order to avoid impacting on areas of mapped ecological values and avoid tree clearing. For example, a high level options assessment was undertaken for the Project to locate the access road in north-west to minimise tree clearing within Koala habitat.

5.3 Recommendations and mitigation measures

Niche have provided the following recommendations and mitigation measures for the Project as a result of the desktop and field assessment.

Adopted recommendations

Niche understands that the following recommendations have/will be incorporated into the Project scope and/or design to address environmental constraints and approval requirements for the Project:

- A stormwater catchment methodology has been developed as presented in the Site Based Stormwater Management Plan (prepared by ADG Engineers) which is based on retaining the pre-developed flow regime, to ensure hydrology changes do not adversely impact on Watercourse, drainage lines, reservoirs and Swamp tea-tree habitat.
- The Vegetation Buffer Zone has been extended to incorporate the Swamp Tea-tree 100m buffer area to ensure that this area is retained and protected from impacts, i.e. to ensure that clearing does not occur within 100m of the Swamp Tea-tree records. Ensuring that the Swamp Tea-tree 100m buffer area is suitably protected, will minimise approvals requirements as a Clearing Permit (Protected Plants) and Impact Management Plan would be required for impacts within this area.

Further assessment

Niche recommends the following further assessment is undertaken to address environmental constraints and approval requirements for the Project:

- Seek further advice with the DES to determine relevant Koala habitat rehabilitation requirements in relation to clearing of NJKHT and core Koala habitat areas.
- Ensure that required approvals under the NC Act (i.e. either an Exempt Clearing Notification or Clearing Permit (Protected Plants)) for clearing protected plants within a High Risk trigger area are sought prior to works, including:
 - Additional protected plant flora survey under the protected plants flora survey guidelines (DES, 2020) during grass flowering period of December-March to further investigate the potential presence of *Calyptochloa gracillima subsp. ipsviciensis* (Unnamed grass) within (and/or within 100m of) the Development Footprint.
 - Preparation of a protected plants Flora Survey Report for submission to DES with approvals documentation.
- Carry out a survey of all NJKHTs within the Development Footprint to confirm the level of impacts and support any offset calculation for the Project where necessary.
- Undertake TEC validation of the Swamp Tea-tree population on the property adjoining the Property boundary in accordance with Approved Conservation Advice to determine if a SIA is required for the Project.
- Niche recommends that relevant SIA under the EPBC Act *Matters of National Environment Significance - Significant Impact Guidelines 1.1* (DoE, 2013) and/or *Queensland Environmental Offsets Policy: Significant Residual Impact Guideline December 2014* (Queensland Government, 2014) are undertaken for the following species to assess the nature and extent of the Project's impact to MNES and/or MSES:
 - TEC Swamp Tea-tree Forest of Southeast Queensland (if required)
 - Koala
 - Collared Delma
 - Grey-headed Flying-fox
- Niche recommends that the Project submit an EPBC Act Referral to the Commonwealth DAWE to address perceived risk with respect to impacts to MNES (particularly the Koala), and for DAWE to provide third party review of the Project's assessments.
- Undertake targeted breeding place survey within the Development Footprint and Canine and community use precinct to determine number and type of potential animal breeding places that may be impacted by the Project. Ensure that an appropriate Species Management Program (SMP) is approved for the Project prior to vegetation clearing as this is likely to involve tampering with any animal breeding places.

- Undertake pre-clearing survey within 48 hours of proposed clearing for Project to determine if active animal breeding places occur within the Property boundary.

5.3.1 Design recommendations and measures

Niche recommends that the Project design incorporates the following measures to avoid and/or minimise the Project's impact on biodiversity and ecosystem function:

Koala design recommendations

- Niche recommends that further assessment and design input be undertaken by an ecologist to inform the Project layout, feature details (such as fencing) and minimise or offset direct impacts to Koala habitat (including NJKHT) and minimise indirect impacts to Koalas as a result of lighting and noise. these recommendations should be considered in the development and finalisation of the Masterplan and Landscape Concept Plan to ensure they address the requirements of the *Queensland Government Koala-sensitive Design Guideline – A guide to koala-sensitive design measures for planning and development activities* (Koala-Sensitive Design Guidelines) (DES, 2020).
- The Project design should follow the recommendations outlined within the Koala-Sensitive Design Guidelines (DES, 2020) in order to:
 - Identify areas to retain and protect Koala habitat values in their natural state to allow Koalas to feed, rest and move around (Plate 8), including but not limited to the Vegetation Buffer Zone
 - Achieve permeability for Koalas through the landscape to ensure the safe movement of Koalas within and across the Property boundary
 - Reduce threats to resident and transient Koalas.

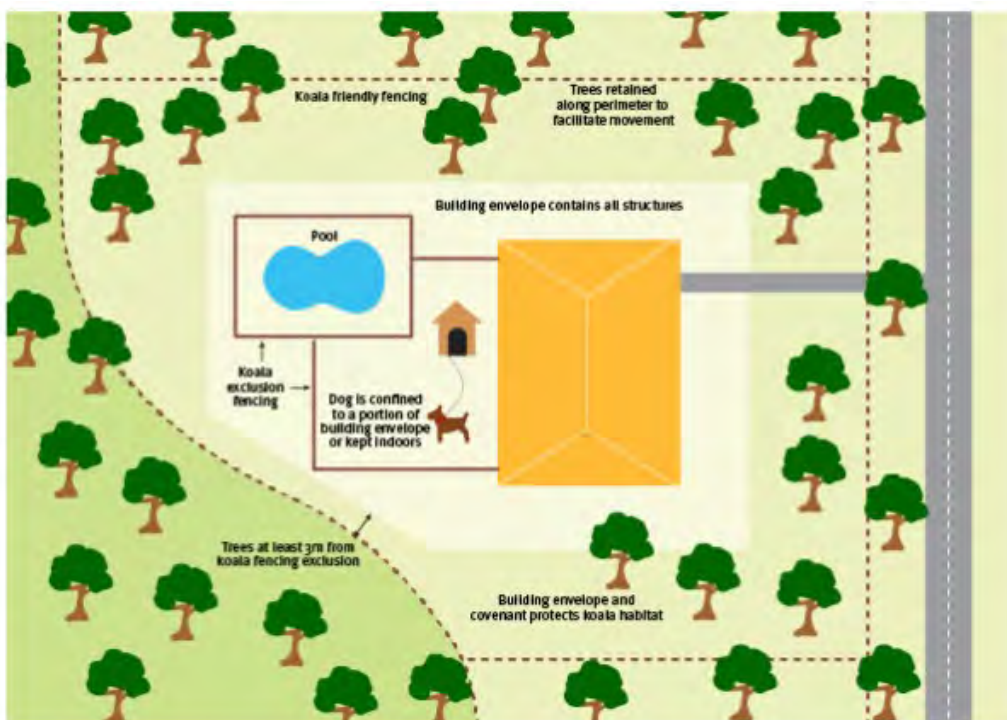


Plate 8. Koala-sensitive Design and fencing options (DES, 2019).

- Implement Koala friendly mitigation measures into Project design, such as:
 - LED and use of directional lighting where practical to prevent/reduce light spill into vegetated areas (where appropriate and within standards as per Track Lighting Report.
 - Allow minor deviations in roads and access tracks to avoid clearing of NJKHT.
 - Speed humps and speed signs to reduce potential Koala mortality or injury
 - Use signs to inform of Koala presence and the need to restrain dogs.

- Within areas where Koala connectivity is to be maintained, include features for Koala-friendly fencing specified in the Koala-sensitive Design Guidelines (DES, 2020). In particular, a mix of the following features are recommended:
 - Leave vegetation on either side of the fence with canopies or trunks extending beyond the height of the fence and where canopies are connected or tree trunks are less than 1 m apart.
 - At regular intervals (such as 50 m), provide fauna movement opportunities by either vertical gaps in fencing (at least 300 mm width) or fencing additions, such as timber posts, Koala bridges (Plate 4) or ladders to aid Koala movement across the pathway.
 - For fencing, use rails or slats that have spaces of at least 10 mm between vertical slats and 20 mm between horizontal rails that Koalas can climb. Materials such as timber posts or chain wire may also be used that a koala can easily grip and climb.
 - Install Koala refuge escape poles, which are a timber post or log (of at least 125 mm in width or diameter) leaning against the top of the fence but positioned at an angle to the fence so that the log is not flush with the fence (i.e. the space between the base of the log and the bottom of the fence is at least 400 mm)
 - Install Koala bridges (Plate 9), which are timber logs are positioned adjacent to and within 1 m of each other on either side of the fence and extend for at least 1m above the fence. A cross piece of similar diameter to the logs connects the two vertical timber posts that are within 1-4m of each other on either side of the fence.



Plate 9. Example of a Koala bridge to provide connectivity across a fenced barrier to movement (DES, 2020).

- Niche understands that the Project will utilise Koala exclusion fencing for the Project, to create a Koala Exclusion Zone to minimise potential threats to Koala, related to Project activities such as tracks, roads, carpark, greyhound stir-up and holding areas. It is also recommended that the Koala Exclusion Zone should maintain scattered Koala habitat trees or other vegetation to provide refuge for Koalas should they enter the zone and allow for movement and escape to adjoining habitat areas. Koala exclusion fencing should include features specified in the Koala-sensitive Design Guidelines (DES, 2020). In particular, a mix of the following features are recommended:
 - Exclusion fencing is often used to guide Koalas towards Koala-safe crossing points such as fauna movement underpasses or overpasses.
 - Fence bracing or supports are on the side of the fence that's away from Koala access.

- The top of the unclimbable section of fencing is at least 1.5 m from the ground to prevent koalas jumping and gripping the top of the fencing.
- Fencing should extend to ground level along uneven or undulating ground.
- Vegetation beside the fence should be regularly maintained to:
 - Exclude trees and shrubs from within 3 m of the fence
 - Keep canopies of trees trimmed to remove links to tree canopies on the other side of the fence
 - Remove fallen branches and vines growing on the fence which Koalas may use to climb over the fence.

Other environmental design recommendations

- Noise and Vibration Management Plan including specific fauna impact mitigation and management measures, fauna-friendly (such as sensor and/or directional) lighting, curfews and/or limitations to minimise impacts to sensitive receptors and native fauna.
- Minimise the total clearing footprint for the Project.
- Minimise vegetation clearing and cut/fill within riparian areas of the Watercourse, reservoirs and drainage lines (where possible).
- Avoid and/or minimise impacts on the bed and banks of the Watercourse and associated reservoirs (which include fauna habitat) as far as practical.
- Seek opportunities to further avoid and/or minimise vegetation clearing within mapped core Koala habitat areas and the total number of NJKHT.
- Seek opportunities to further avoid and/or minimise vegetation clearing within High Risk area for protected plants
- Seek opportunities to avoid and/or minimise clearing of active animal breeding places, and ensure all works are undertaken in accordance with a DES approved low risk or high risk SMP as required.
- Seek opportunities to avoid vegetation clearing and avoid Project activities (such as access paths and/or foot traffic) within vegetation mapped as Category C (high value regrowth) Of Concern RE 12.9-10.7 and Essential Habitat within the southwest section of the Property boundary.
- Include measures to discourage public access to vegetated areas outside the Development Footprint through signage, fencing and dense planting.
- Employ the stormwater catchment methodology presented in the Site Based Stormwater Management Plan (prepared by ADG Engineers) which is based on retention of the pre-developed flow regime, to ensure hydrology changes do not adversely impact on Watercourse, reservoirs and Swamp tea-tree habitat.

5.3.2 Pre-construction and construction mitigation

Table 14 below outlines the following proposed pre-construction and construction impact management solutions to minimise impacts on ecosystem function and biodiversity as a result of the Project.

Table 14. Recommended management strategies and mitigation measures

Description	Mitigation measures	Timing	Responsibility
Protection of native vegetation and fauna habitat	<p>A Flora and Fauna Management Plan would be prepared, implemented and audited as part of the Construction and Environment Management Plan (CEMP). The CEMP would address terrestrial and aquatic matters and include plans that show the construction footprint in proximity to ecological values, exclusion zones and Tree Protection Zones and provide details of pre-clearing protocols, weed and pest management and restoration requirements.</p> <p>A Bushfire Management Plan to consider and protect native vegetation and surrounding assets to be prepared, implemented and audited as part of the CEMP.</p> <p>A Landscaping Concept Plan to be prepared, implemented and audited which incorporates use of local species and considered ecological requirements in terms of providing suitable foraging habitat for native fauna as well as providing refuge and escape opportunities to native wildlife that may enter the Development Footprint.</p> <p>A Revegetation and Rehabilitation Plan to be developed to compensate for vegetation that is lost or disturbed during construction, preferably using local species that are considered to be suitable Koala feed trees.</p>	Pre-construction/ construction	Contractor
Protection of threatened flora	<p>A Flora and Fauna Management Plan would be prepared, implemented and audited as part of the Construction and Environment Management Plan (CEMP). All records of threatened plants and 100m buffer area for Swamp Tea Tree will be included as a no go zone for construction activities and suitably protected with flagging and signage. Further assessment, including pre-clearing surveys will be undertaken to ensure that no threatened flora occur within the Development Footprint.</p> <p>Ensure that required approvals under the NC Act (i.e. either an Exempt Clearing Notification or Clearing Permit (Protected Plants)) for clearing protected plants within a High Risk trigger area are sought prior to works and any conditions are integrated into management measures and plans.</p>	Pre-construction/ construction	Contractor
Protection of native vegetation and fauna habitat adjacent to Development Footprint	<p>A Vegetation Management Plan to be implemented and audited as part of the CEMP. Vegetation clearing required for the Project is to be restricted to the Development Footprint only. No clearing/vegetation disturbance shall be undertaken outside of the Development Footprint and no-go zones (particularly within the Vegetation Buffer Zone where mapped values include remnant and high value regrowth vegetation, Koala habitat and the 100 m buffer zone for Swamp Tea-tree) shall be established on construction plans to protect ecological values. Prior to undertaking any works the following activities would be undertaken:</p> <ul style="list-style-type: none"> Marking-out and signing of clearing limits within the construction footprint. 	Pre-construction/ construction	Contractor

Description	Mitigation measures	Timing	Responsibility
	<ul style="list-style-type: none"> • Installation of barriers, which are identified on construction drawings and raised to site workers during induction training. • Clear identification of vegetation and habitat features to be retained and protected using suitable fencing, signage or markings. • Design and construction solutions are to be explored to minimise any impacts to vegetation proposed for retention during construction in accordance with AS4970-2009 and AS4373-2007. • Where works are proposed within the Tree Protection Zones (TPZ) of any trees to be retained, an arborist (min AQF level 5) is to be engaged to complete a tree health assessment and to provide recommendations for mitigating any impacts. The arborist is to assess alternative construction methods and prescribe suitable mitigation measures to maintain the health and long-term viability of any trees proposed for retention within the vicinity of proposed works. • Locating all construction access and storage within cleared or disturbed areas, outside of any exclusion zones or the Tree Protection Zone of vegetation to be retained as identified in the flora and fauna management plan. 		
Protection of native vegetation within laydown areas	All construction infrastructure (eg. site office), parking and laydown/storage areas shall be limited to the pre-designated laydown areas and existing cleared land only. No clearing of native vegetation is to occur within the laydown areas and any storage or works required within the Tree Protection Zones of trees for retention shall be protected from construction disturbance and/or arborist recommendations/ treatments employed to protect the tree during works and ensure that the tree remains viable.	Pre-construction/ construction	Contractor
Protection of fauna during clearing	<p>A fauna spotter/catcher should be engaged prior to and during any clearance of woody vegetation to ensure that legislative obligations (under the NC Act) with respect to protection of native fauna are met. The responsibilities of the fauna spotter/catcher will ensure that:</p> <ul style="list-style-type: none"> • Clearing only occurs once a spotter/catcher gives sign off that vegetation has been inspected and is clear of native fauna identified as present on the site. • Clearing commences in areas of least connectivity and directs fauna towards retained areas (in particular, remnant and high value regrowth vegetation to the north, south and east of the Development Footprint) • clearing is sequenced to ensure adequate time for fauna to relocate towards retained areas. 	Pre-construction/ construction	Contractor
Protection of animal breeding places	Clearing of animal breeding places, including hollows and nests, should be avoided as far as practical. Where clearing of animal breeding places is required, it is only	Pre-construction/ construction	Contractor

Description	Mitigation measures	Timing	Responsibility
	<p>permitted to be undertaken in accordance with a DES approved low risk or high risk Species Management Program (SMP), as relevant.</p> <p>Any potential animal breeding places (in particular, the habitat hollow within the Development Footprint) that will require removal for the Project shall be checked by the fauna spotter/catcher prior to clearing to ensure any potential breeding place (such as nests/arboreal termite mounds/hollows) are not being used by a native animal to incubate or rear the animal's offspring. Should evidence of animal breeding be identified either:</p> <ul style="list-style-type: none"> • No clearing shall be undertaken of the animal breeding place until the breeding has ceased and the animal (and offspring) vacate the breeding place on their own volition; or • Activities are undertaken in accordance with an approved Species Management Program for tampering with an animal breeding place. 		
Koala	<p>Clearing of vegetation or earthworks within habitat for Koala to occur outside of the breeding season for the species [Spring/Summer].</p> <p>Minimise clearing of native vegetation and NJKHT for the project and identify any additional trees that are suitable for retention within the construction footprint prior to commencing works.</p> <p>A Koala spotter should be engaged prior to and during any clearance of woody vegetation to ensure that legislative obligations (under the <i>Nature Conservation (Koala) Conservation Plan 2017</i>) with respect to protection of Koalas are met.</p> <p>Clearing of the Koala habitat trees is carried out in a way that ensures Koala with the area being cleared (the clearing site) have enough time to move out of the clearing site without human intervention, including, in particular, for clearing sites with an area of more than 3 ha, by:</p> <ul style="list-style-type: none"> • Carrying out the clearing in stages; and • Ensuring not more than the following is cleared in any 1 stage— <ul style="list-style-type: none"> ▪ For a clearing site with an area of 6 ha; or - 50% of the site's area; ▪ For a clearing site with an area of more than 6 ha; - 3 ha or 3% of the site's area, whichever is the greater; and • Ensuring that between each stage and the next there is at least 1 period of 12 hours starting at 6p.m. on a day and ending at 6a.m. on the following day during which no trees are cleared on the site; and • Clearing of the Koala habitat trees is carried out in a way that ensures, while the clearing is carried out, appropriate habitat links are maintained within the clearing site and between the site and its adjacent area to allow koalas living on the site to move out of the site; and 	Pre-construction/ construction	Contractor

Description	Mitigation measures	Timing	Responsibility
	<ul style="list-style-type: none"> No Koala habitat tree in which a Koala is present, and no Koala habitat tree with a crown overlapping a tree in which a Koala is present, is cleared. 		
Site workers and construction activity impacts	<p>All site workers would be trained to ensure awareness of requirements of the Flora and Fauna Management Plan, Vegetation Management Plan, and relevant statutory responsibilities.</p> <p>Site-specific training would be provided when specific work activities were taking place near areas of identified biodiversity value that are to be protected.</p>	Construction	Contractor
Unexpected finds	<p>A Threatened Species Unexpected Finds Procedure would be prepared and implemented. This would describe the process for identifying, dealing with, and managing any unexpected threatened flora or fauna species found during the construction process. It would include the measures for stopping work, engaging a qualified ecologist, contacting the regulators and restarting work.</p>	Construction	Contractor
Spread of weeds, pests and pathogens	<p>A Biosecurity Management Plan (including Fire Ant Management Plan) Would be prepared, implemented and audited to avoid and minimise the environmental risks associated with weeds, pests and pathogens and incorporated into the CEMP.</p> <p>Implementation of appropriate weed control and weed disposal shall occur in accordance with Biosecurity protocols.</p> <p>The Project is required to adhere to Fire ant soil movement guidelines, in particular the document <i>MRIFAEP Soil Movement Guideline V1.0 27/05/2020</i> (DAF, 2020). A Biosecurity Instrument Permit may be required, if the Project is required to move a fire ant carrier (such as soil or mulch) outside the Development Footprint into a different Fire ant biosecurity zone 2.</p> <p>Any soil or other materials imported to the site for use in restoration or rehabilitation would be certified free from weeds and pathogens or obtained from sources that demonstrate best practice management to minimise weed and pathogen risks.</p> <p>Disposal of any weed material at an appropriately licensed facility.</p> <p>Implementation of appropriate hygiene protocols where there are potential or known pathogen risks.</p>	Construction	Contractor
Noise impacts	<p>An Acoustic Assessment and Noise and Vibration Management Plan would be prepared and developed as part of CEMP.</p> <p>Avoid earthworks and using Project plant that contributes to high levels of noise and vibration during peak Koala breeding season.</p> <p>Plant and equipment should be selected to minimise noise emission and maintained regularly to avoid noise.</p>	Construction and operation	Contractor/ Proponent

Description	Mitigation measures	Timing	Responsibility
	<p>Educate Project personnel to maximise awareness of Project noise goals and noise generating activities and encourage minimisation of these activities.</p> <p>Construction work should be carried out in accordance with Australian Standard 2436-1981, Guide to noise control on construction, maintenance and demolition sites (Standards Australia, 1981).</p>		
Light disturbance	<p>Minimise light pollution from site offices and associated plant during construction by locating lamps as far as possible from fauna habitat, in particular vegetated areas, installing glare guards and installing motion sensors.</p> <p>Fauna sensitive lighting to be installed and maintained where practical in accordance with recommended design.</p>	Construction and operation	Contractor/ Proponent
Dust and other air quality impacts	An Air Quality Management Plan would be prepared and developed as part of the CEMP outlining requirements for the management and monitoring of air quality emissions to ensure compliance with relevant standards.	Construction and operation	Contractor/ Proponent
Impacts to water quality and hydrology	<p>An Erosion and Sediment Control Plan would be prepared and developed as part of the CEMP which outlines mitigation measures for erosion and sediment pollution, in accordance with International Erosion Control Association (IECA) best practice guidelines.</p> <p>A Stormwater Management Plan would be prepared and developed to be developed as part of the CEMP. The plan should outline:</p> <ul style="list-style-type: none"> • Collection protocols of stormwater for the Project. • Measures for the management and monitoring of surface water quality and hydrology during construction. • Management of potential contaminants and sediments. • Monitoring of construction surface water quality. 	Construction and operation	Contractor/ Proponent
	<p>Ensure laydown and stockpile areas occur as far from the Watercourse or reservoirs as practically possible and outside overland flow paths or drainage patterns.</p> <p>All machinery and vehicles accessing the area shall be routinely checked for leaks. An emergency spill kit is to be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use.</p> <p>Establish release criteria for management of 'construction contaminated water'.</p> <p>Stabilise exposed soils by using materials such as mulch, biodegradable matting, geotextile fabrics, and/or soil stabilisation products.</p>	Construction and operation	Contractor/ Proponent
Impacts to traffic, public amenity and sensitive receptors	Traffic Impact Assessment Plan to be prepared, implemented and audited as part of CEMP to consider impacts to traffic, sensitive receptors and public amenity.	Construction	Contractor

Description	Mitigation measures	Timing	Responsibility
Impacts associated with litter and solid waste	A Waste Management Strategy would be developed outlining strategies for waste management during construction. Strategies for the management of litter within the site should also be written into operational plans and programs.	Construction	Contractor
Clearing and disposal	<p>Cleared vegetation is to be reused on or off premises as far as practical and in accordance with biosecurity protocols and zones eg. Fire Ant Biosecurity Zones. Recycling techniques to be considered include mulching, tub-grinding, wood chipping and salvage (e.g. custom milling).</p> <p>Clearing of non-native vegetation and weeds shall be undertaken in a manner that does not spread seed to adjoining areas and should either be treated appropriately to ensure weeds do not propagate in re-use (i.e. by following mulching protocols) or disposed of appropriately.</p> <p>Vegetative material and debris must not be pushed into watercourses other drainage lines or waterlogged areas.</p>	Construction	Contractor

5.4 Revegetation and offsets

In accordance with the mitigation hierarchy, the Project will include the provision of revegetation and offsets for vegetation that is lost or disturbed during construction and will include the provision of landscaping that helps to control weeds and clears invasive species from the Property boundary. Any revegetation and landscaping undertaken would include a preference for using local flora species (i.e. those that are already found across the site and broader area) that would provide habitat contiguous with the existing landscape and include preferred habitat trees for the Koala and other Threatened species. In addition, the revegetation would include the provision of nesting boxes to mitigate the loss of fauna habitat trees and/or animal breeding places (i.e. hollows) requiring removal for the Project, as required.

5.4.1 MSES offset calculations

The Project will undertake revegetation planting in accordance with the offset principles defined in the Queensland Environmental Offsets Policy (DES, 2018). The relevant MSES to address in terms of revegetation planting include the impacts to 0.05ha of mapped core Koala habitat, regulated vegetation and threatened fauna species habitat. The Queensland Environmental Offsets Policy requires three (3) new koala habitat trees to be established for every NJKHT removed in South East Queensland. Furthermore, based on the Significant Residual Impact Guideline (DEHP, 2014) a significant residual impact on Koala habitat in South East Queensland is any prescribed activity that will remove a NJKHT. Therefore, all removal of NJKHT would be considered to constitute a significant residual impact for Koala habitat and would require revegetation of Koala habitat trees at a 3:1 ratio.

For the purposes of the Queensland Government Offset Calculator (Offset Calculator), the number of NJKHT being impacted must be converted into an area in hectares. The Offset Calculator uses an average tree density of 250 trees per hectare for koala habitat in SEQ, which gives a total area of impact for a single NJKHT of 40m² (0.004ha). Therefore, the impact area required to be input into the Offset Calculator in hectares is: *Impact Area (ha) = Number of NJKHT being impacted X 0.004 ha*. Based on a proposed impact to approximately 20 NJKHT within areas mapped as core Koala habitat (as estimated for the Development Footprint from the Project's tree survey data), an area of 0.08ha is required to be input as the impact area for Koala habitat. Additional MSES that apply to the impact area (i.e. mapped regulated vegetation and threatened fauna species habitat) are included based on the area calculation of 0.05ha.

A preliminary run of the Offset Calculator has determined an estimated offset area requirement for the Project of 0.24 ha (to accommodate 60 koala habitat trees) (Refer to Annex 4 – Queensland Government Offsets Calculator). The Offset Calculator will be updated upon finalisation of the detailed design for the Project once the true level of impacts to NJKHT is known, in order to identify and allocate a suitable location for the Ecological Revegetation Area within the Property boundary.

5.4.2 No net loss revegetation

In order to ensure that the Project achieves no net loss of native vegetation/ fauna habitat and in particular provides suitable compensation for the loss of NJKHT in previously disturbed areas (including scattered trees and within Preliminary regrowth habitat areas), Niche recommends that additional revegetation be undertaken as best practice for the Project. This additional revegetation for the Project would also contribute to providing mitigation for loss of Koala habitat to address requirements at the Commonwealth and local levels. Based on a further proposed impact to approximately 70 NJKHT within areas outside those mapped as core Koala habitat (as estimated for the Development Footprint from the Project's tree survey data), a further estimated area of 0.28ha should be included in the revegetation activities within the Property boundary to accommodate replacement of an additional 70 Koala habitat trees.

5.4.3 Revegetation and rehabilitation plan

A Revegetation and Rehabilitation Plan shall be prepared, implemented and audited which outlines revegetation and rehabilitation requirements for vegetation that is lost or disturbed during construction, preferably using local species that are considered to be suitable Koala habitat trees. Based on the preliminary assessment of requirements using the Offset Calculator and addressing no net loss of NJKHT across the Development Footprint, the Project is expected to require a revegetation area of approximately 0.52 ha of land to accommodate replanting of approximately 130 Koala habitat trees. The location and extent of the revegetation area will be identified and included in the masterplan for the Project in consultation with the recommendations of other site plans, including the Bushfire Management Plan and Landscaping Concept Plan.

The purpose of the Revegetation and Rehabilitation Plan will be to outline the revegetation and rehabilitation requirements for the Project and will include the following:

- Define the scope and objectives of the revegetation and rehabilitation activities for the Project in order to meet Project requirements for mitigating impacts to ecological values.
- Define the location and extent of revegetation and rehabilitation works within the Property boundary and address habitat connectivity with the existing landscape.
- Define the planting specifications, including planting size and densities, spacing of trees/shrubs to promote rapid canopy closure without overcrowding, erosion controls (i.e. weed matting) and soil conditioning/ fertiliser application rates.
- Define the plant species lists for the tree layer, shrub layer and ground layer including planting ratios. The plant species list shall use local flora species (i.e. those that are already found across the site and broader area) and include Koala habitat trees at the required numbers.
- Define the rehabilitation activities required to ensure that the revegetation area provides habitat contiguous with adjoining vegetation and provide the provision of nesting boxes to mitigate the loss of fauna habitat trees and/or animal breeding places (i.e. hollows) requiring removal for the Project, as required.
- Define the maintenance period, maintenance activities, monitoring and reporting requirements for the revegetation and rehabilitation activities.

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Annex 1 – Desktop Search Results



Vegetation management report

For Lot: 2 Plan: SP193446

09/09/2021

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Recent changes

Updated mapping

Updated vegetation mapping was released on 8 September 2021 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, wetland, high-value regrowth and essential habitat mapping.

The Department of Environment and Science have also updated their protected plant and koala protection mapping to align with the Queensland Herbarium scientific updates.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 2 Plan: SP193446, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
2	SP193446	Freehold	201,400

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 2 Plan: SP193446, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Ipswich City

Bioregion(s)	Subregion(s)
Southeast Queensland	Moreton Basin

Catchment(s)
Brisbane

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the *Vegetation Management Regulation 2012*, the *Planning Act 2016* and the *Planning Regulation 2017*, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem prescribed under Schedule 5 of the *Vegetation Management Regulation 2012*; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

<https://www.qld.gov.au/environment/land/vegetation/exemptions/>.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

<https://www.qld.gov.au/environment/land/vegetation/codes/>

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at

<https://apps.dnrm.qld.gov.au/vegetation/>

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.

<https://www.qld.gov.au/environment/land/vegetation/area-plans/>

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval.

Information on how to apply for a development approval is available at

<https://www.qld.gov.au/environment/land/management/vegetation/development>

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

Visit <https://www.dnrme.qld.gov.au/?contact=vegetation> to submit an online enquiry.

3. Vegetation management framework for Lot: 2 Plan: SP193446

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 20.14ha

Vegetation category	Area (ha)
Category B	2.9
Category C	0.7
Category X	16.5

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

There is no Property Map of Assessable Vegetation (PMAV) present on this property.

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/>

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
12.3.3	Endangered	C	0.01	Eucalyptus tereticornis woodland on Quaternary alluvium	Sparse
12.9-10.2	Least concern	B	1.30	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.2	Least concern	C	0.20	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.3	Of concern	C	0.01	Eucalyptus moluccana open forest on sedimentary rocks	Mid-dense
12.9-10.7	Of concern	B	1.63	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp. and E. melanophloia woodland on sedimentary rocks	Sparse
12.9-10.7	Of concern	C	0.50	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp. and E. melanophloia woodland on sedimentary rocks	Sparse
non-rem	None	X	16.48	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

- 1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
- 2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	<i>Phascolarctos cinereus</i>	koala	V	Open forests and woodlands containing <i>Eucalyptus</i> , <i>Corymbia</i> , <i>Lophostemon</i> or <i>Melaleuca</i> trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: <i>Corymbia citriodora</i> , <i>Corymbia henryi</i> , <i>Corymbia intermedia</i> , <i>Eucalyptus acmenoides</i> , <i>Eucalyptus bancroftii</i> , <i>Eucalyptus biturbinata</i> , <i>Eucalyptus blakelyi</i> , <i>Eucalyptus brownii</i> , <i>Eucalyptus camaldulensis</i> , <i>Eucalyptus carnea</i> , <i>Eucalyptus chloroclada</i> , <i>Eucalyptus coolabah</i> , <i>Eucalyptus crebra</i> , <i>Eucalyptus dealbata</i> , <i>Eucalyptus drepanophylla</i> , <i>Eucalyptus dunnii</i> , <i>Eucalyptus eugenioides</i> , <i>Eucalyptus exserta</i> , <i>Eucalyptus fibrosa</i> , <i>Eucalyptus grandis</i> , <i>Eucalyptus helidonica</i> , <i>Eucalyptus latisinensis</i> , <i>Eucalyptus longirostrata</i> , <i>Eucalyptus major</i> , <i>Eucalyptus melanophloia</i> , <i>Eucalyptus melliodora</i> , <i>Eucalyptus microcarpa</i> , <i>Eucalyptus microcorys</i> , <i>Eucalyptus microtheca</i> , <i>Eucalyptus moluccana</i> , <i>Eucalyptus montivaga</i> , <i>Eucalyptus orgadophila</i> , <i>Eucalyptus papuana</i> , <i>Eucalyptus pilularis</i> , <i>Eucalyptus platyphylla</i> , <i>Eucalyptus populnea</i> , <i>Eucalyptus portuensis</i> , <i>Eucalyptus propinqua</i> , <i>Eucalyptus racemosa</i> , <i>Eucalyptus resinifera</i> , <i>Eucalyptus robusta</i> , <i>Eucalyptus saligna</i> , <i>Eucalyptus seeana</i> , <i>Eucalyptus siderophloia</i> , <i>Eucalyptus sideroxylon</i> , <i>Eucalyptus tereticornis</i> , <i>Eucalyptus thozetiana</i> , <i>Eucalyptus tindaliae</i> , <i>Eucalyptus umbra</i> , <i>Lophostemon confertus</i> , <i>Melaleuca leucadendra</i> , <i>Melaleuca quinquenervia</i> .	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.
34709	<i>Calyptochloa gracillima</i> subsp. <i>ipsviciensis</i>	None	CE	woodland of <i>Corymbia citriodora</i> or <i>Eucalyptus crebra</i> and <i>C. citriodora</i> or <i>E. fibrosa</i> with <i>C. citriodora</i> and <i>E. carnea</i> ; open forest of <i>Lophostemon confertus</i> , <i>Eucalyptus tereticornis</i> , <i>E. siderophloia</i>	0 to 200 m	loam to clay loam	hill slope

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.57, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 8.1.5, 8.2.3, 8.2.6, 8.2.7, 8.2.8, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.3.1, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.8, 8.3.10, 8.3.11, 8.3.13, 8.5.1, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.9.1, 8.10.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.11.10, 8.11.12, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 8.12.26, 8.12.27, 8.12.29, 8.12.31, 8.12.32, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.10, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.27, 9.4.1, 9.4.2, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.15, 9.5.16, 9.5.17, 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12.12.9, 12.12.11, 12.12.12, 12.12.14, 12.12.15, 12.12.23, 12.12.24, 12.12.25, 12.12.28, 13.3.1, 13.3.2, 13.3.3, 13.3.4, 13.3.5, 13.3.7, 13.9.2, 13.11.1, 13.11.2, 13.11.3, 13.11.4, 13.11.5, 13.11.6, 13.11.8, 13.11.9, 13.12.1, 13.12.2, 13.12.3, 13.12.4, 13.12.5, 13.12.6, 13.12.8, 13.12.9, 13.12.10.
34709	12.9-10.2, 12.9-10.7, 12.9-10.17

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 2 Plan: SP193446.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:

<https://www.dnrme.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form>

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new [property maps of assessable vegetation \(PMAV\)](#).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

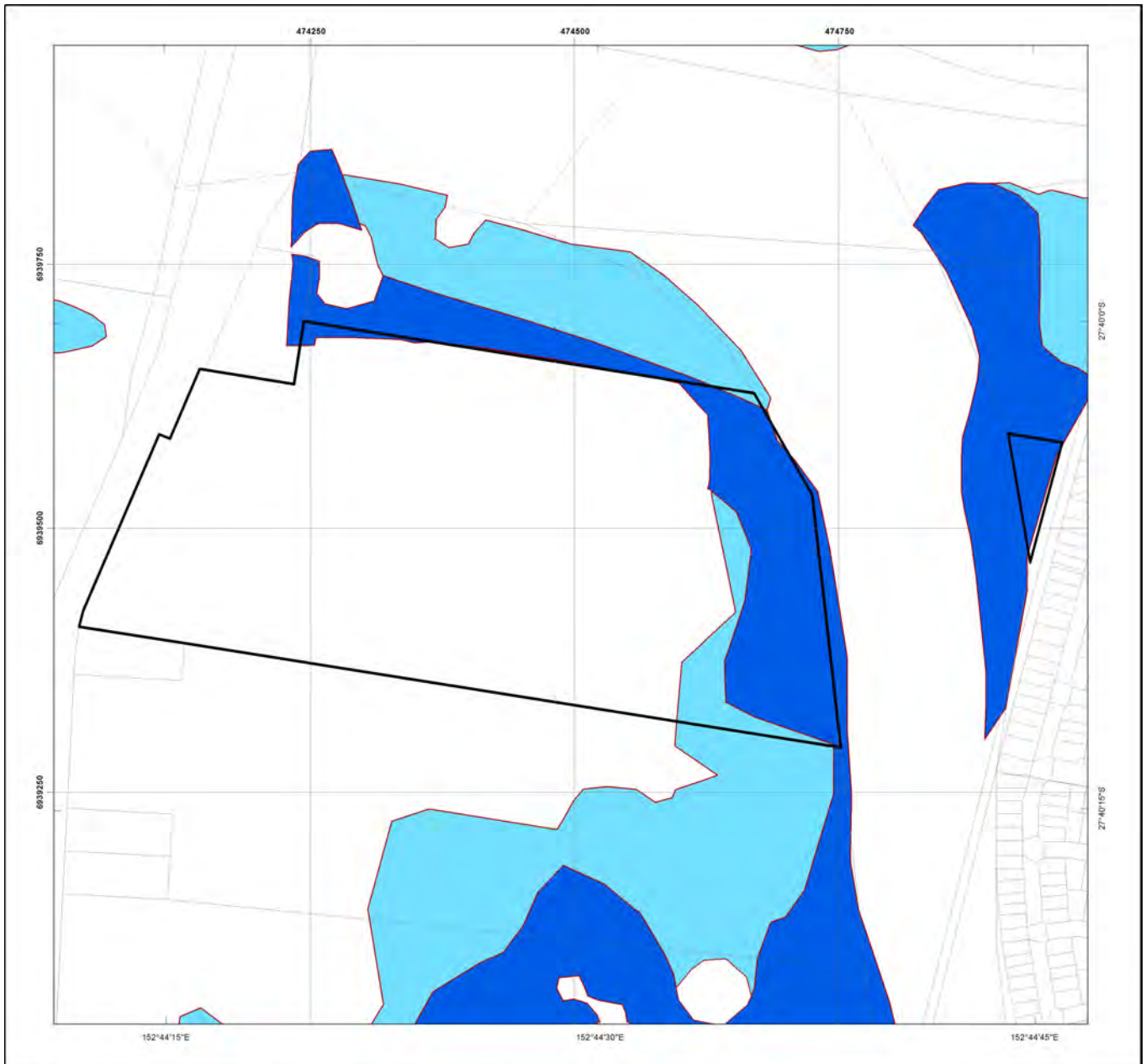
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture










The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

4.1 Regulated vegetation management map



Regulated Vegetation Management Map

Legend

-  Selected Lot and Plan
-  Category A area (Vegetation offsets/compliance notices/VDecs)
-  Category B area (Remnant vegetation)
-  Category C area (High-value regrowth vegetation)
-  Category R area (Reef regrowth watercourse vegetation)
-  Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
-  Water
-  Area not categorised
-  Other land parcel boundaries



This product is projected into:
GDA 1994 MGA Zone 56

Disclaimer:

While every care is taken to ensure the accuracy of this product, the Department of Resources makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.



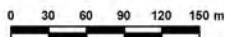
4.2 Vegetation management supporting map



Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries



This product is projected into:
GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

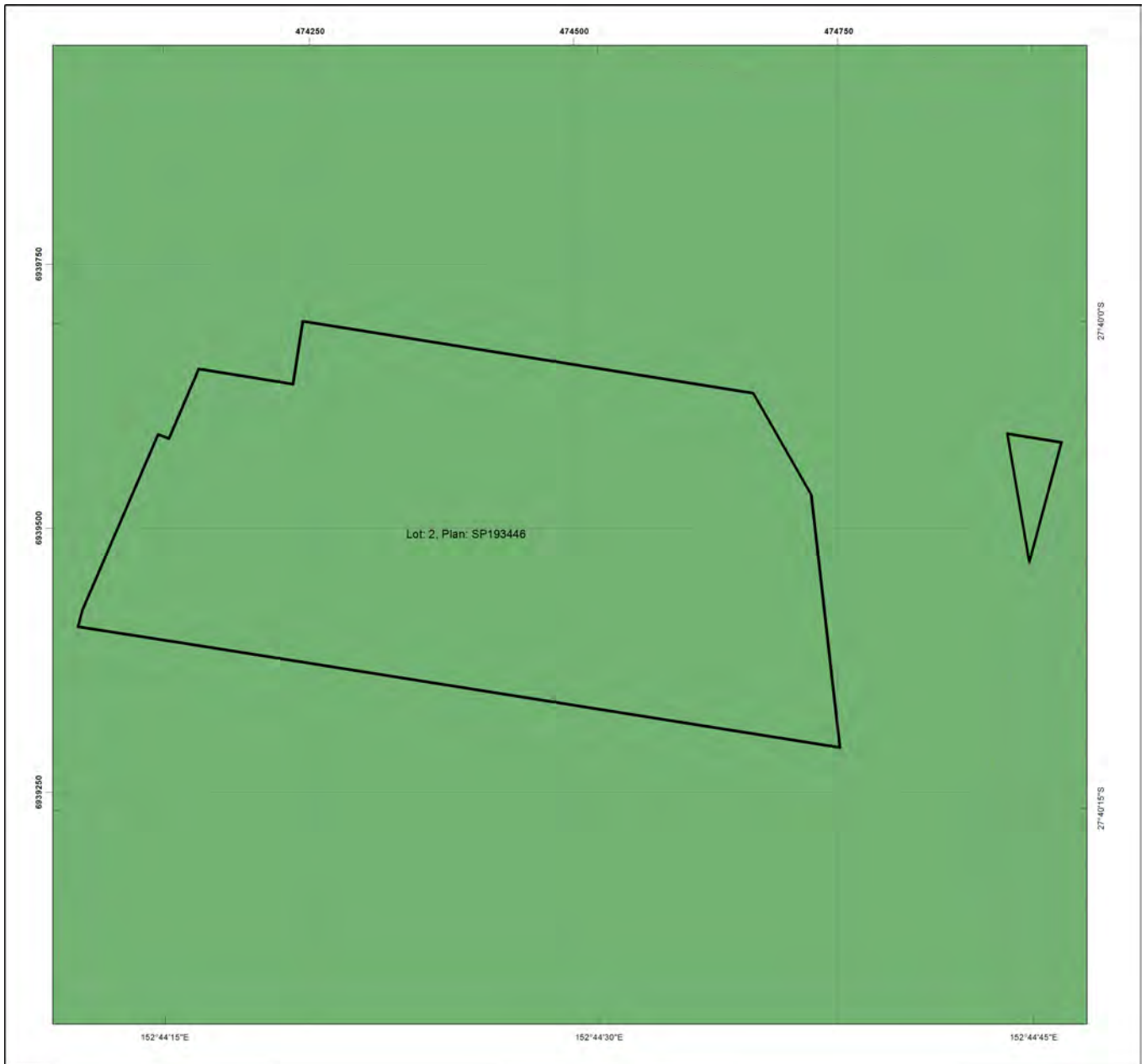
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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>





Land parcel boundaries are provided as locational aid only.

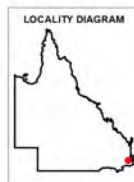
4.3 Coastal/non-coastal map



Coastal/Non Coastal Map

Legend

-  Selected Lot and Plan
-  Coastal
-  Non Coastal
-  Other land parcel boundaries



This product is projected into:
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Land parcel boundaries shown are provided as a locational aid only.











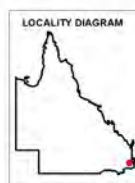
4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

Legend

-  Selected Lot and Plan
-  Towns
-  Rivers and creeks
-  Freeways / motorways; Highways
-  Secondary roads; Streets
- Agricultural land class A or B
-  A
-  B
-  Not class A or B



This product is projected into GDA 1994 MGA Zone 56

Disclaimer

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5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the [Nature Conservation Act 1992](#) (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see [Operational policy: When a protected plant in Queensland is considered to be 'in the wild'](#)) that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for endangered, vulnerable or near threatened (EVNT) plants. These are areas where EVNT plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the [Flora survey guidelines](#). The main objective of a flora survey is to locate any EVNT plants that may be present in the clearing impact area.

If the flora survey identifies that EVNT plants are not present within the clearing impact area or clearing within 100m of EVNT plants can be avoided, the clearing activity is exempt from a permit. An [exempt clearing notification form](#) must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that EVNT plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the [clearing permit application form](#).

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that EVNT plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:

Phone 1300 130 372 (and select option four)

Email palm@des.qld.gov.au

Visit <https://www.qld.gov.au/environment/plants-animals/plants/protected-plants>

5.5 Protected plants flora survey trigger map

This map included may also be requested individually at: <https://apps.des.qld.gov.au/map-request/flora-survey-trigger/>.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.






Species information

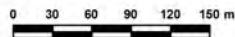
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.



Protected Plants Flora Survey Trigger Map

Legend

-  Selected Lot and Plan
-  High risk area
-  Other land parcel boundaries
-  Freeways / motorways / highways
-  Secondary roads / streets



This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as vulnerable by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document [Spatial modelling in South East Queensland](#).

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document [Guideline - Requests to make, amend or revoke a koala habitat area determination](#).

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps>. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

- 1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
- 2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the [Planning Regulation 2017](#). More information on exempted development can be found here:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
 - the local government planning scheme makes the development assessable;
 - the premises includes an area that is both a koala priority area and a koala habitat area; and
 - the development does not involve interfering with koala habitat (defined above); and
- development in identified koala broad-hectare areas.

The [Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks](#) outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the [Nature Conservation \(Koala\) Conservation Plan 2017](#) prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

For further information on the koala protection framework:

Phone 13 QGOV (13 74 68)

Email koala.assessment@des.qld.gov.au

Visit <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping>

7. Koala protection framework details for Lot: 2 Plan: SP193446

7.1 Koala districts

Koala District A

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map



Koala priority area, koala habitat area and identified koala broad-hectare area map

Legend

- Selected Lot and Plan
- Koala habitat area (core)
- Koala habitat area (locally refined)
- Koala priority area
- Identified koala broad-hectare area
- Cadastral Boundaries
- Towns
- Highway
- Connector
- Street/Local Road
- Major rivers/creeks
- Queensland

The koala habitat mapping within South East Queensland uses regional ecosystem line-work compiled at a scale varying from 1:25,000 to 1:100,000. Linework should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.



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The koala conservation plan maps will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

In order to ensure that the most recent map for an area of interest can be accessed, prior to the annual update, a register of changes made to koala habitat areas as a result of the map amendment process will be available at:
<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/>.
The register will include lot on plan for the change, the date the decision was made and the map issued to the landholder which shows areas determined to be koala habitat areas.

7.3 Koala habitat regional ecosystems for core koala habitat areas



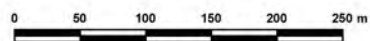
Koala habitat regional ecosystems for core koala habitat areas

Legend

-  Selected Lot and Plan
-  Koala habitat area (core)
-  Towns
-  Highway
-  Connector
-  Street/Local Road
-  Major rivers/creeks
-  Queensland



N



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The koala habitat mapping within South East Queensland uses regional ecosystem linework compiled at a scale varying from 1:25,000 to 1:100,000. Linework should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.

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This product is projected into GDA 1994 MGA Zone 56

8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
<ul style="list-style-type: none"> • Interference with overland flow • Earthworks, significant disturbance 	<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dnrme.qld.gov.au
<ul style="list-style-type: none"> • Indigenous Cultural Heritage 	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
<ul style="list-style-type: none"> • Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues 	<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
<ul style="list-style-type: none"> • Protected plants and protected areas 	<i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
<ul style="list-style-type: none"> • Koala mapping and regulations 	<i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
<ul style="list-style-type: none"> • Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures 	<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
<ul style="list-style-type: none"> • Matters of National Environmental Significance including listed threatened species and ecological communities 	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
<ul style="list-style-type: none"> • Development and planning processes 	<i>Planning Act 2016</i> <i>State Development and Public Works Organisation Act 1971</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
<ul style="list-style-type: none"> • Local government requirements 	<i>Local Government Act 2009</i> <i>Planning Act 2016</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
<ul style="list-style-type: none"> • Harvesting timber in the Wet Tropics of Qld World Heritage area 	<i>Wet Tropics World Heritage Protection and Management Act 1993</i>	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au



Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: Rare and threatened species
Records: All
Date: All
Latitude: -27.6693
Longitude: 152.7403
Distance: 5
Email: lcarter@niche-eh.com
Date submitted: Thursday 29 Jul 2021 16:38:12
Date extracted: Thursday 29 Jul 2021 16:40:04

The number of records retrieved = 6

Disclaimer

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Information about your Species lists request is logged for quality assurance, user support and product enhancement purposes only.

The information provided should be appropriately acknowledged as being derived from WildNet database when it is used. As the WildNet Program is still in a process of collating and vetting data, it is possible the information given is not complete. Go to the WildNet database webpage (<https://www.qld.gov.au/environment/plants-animals/species-information/wildnet>) to find out more about WildNet and where to access other WildNet information products approved for publication. Feedback about WildNet species lists should be emailed to wildlife.online@des.qld.gov.au.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail		V	V	3
animals	birds	Psittacidae	<i>Psephotus pulcherrimus</i>	paradise parrot		PE	EX	1
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		V	V	512
plants	land plants	Cupressaceae	<i>Callitris baileyi</i>	Bailey's cypress		NT		1/1
plants	land plants	Myrtaceae	<i>Melaleuca irbyana</i>			E		3/2
plants	land plants	Poaceae	<i>Calyptrichloa gracillima subsp. ipsviciensis</i>			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.



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 29/07/21 16:40:10

[Summary](#)

[Details](#)

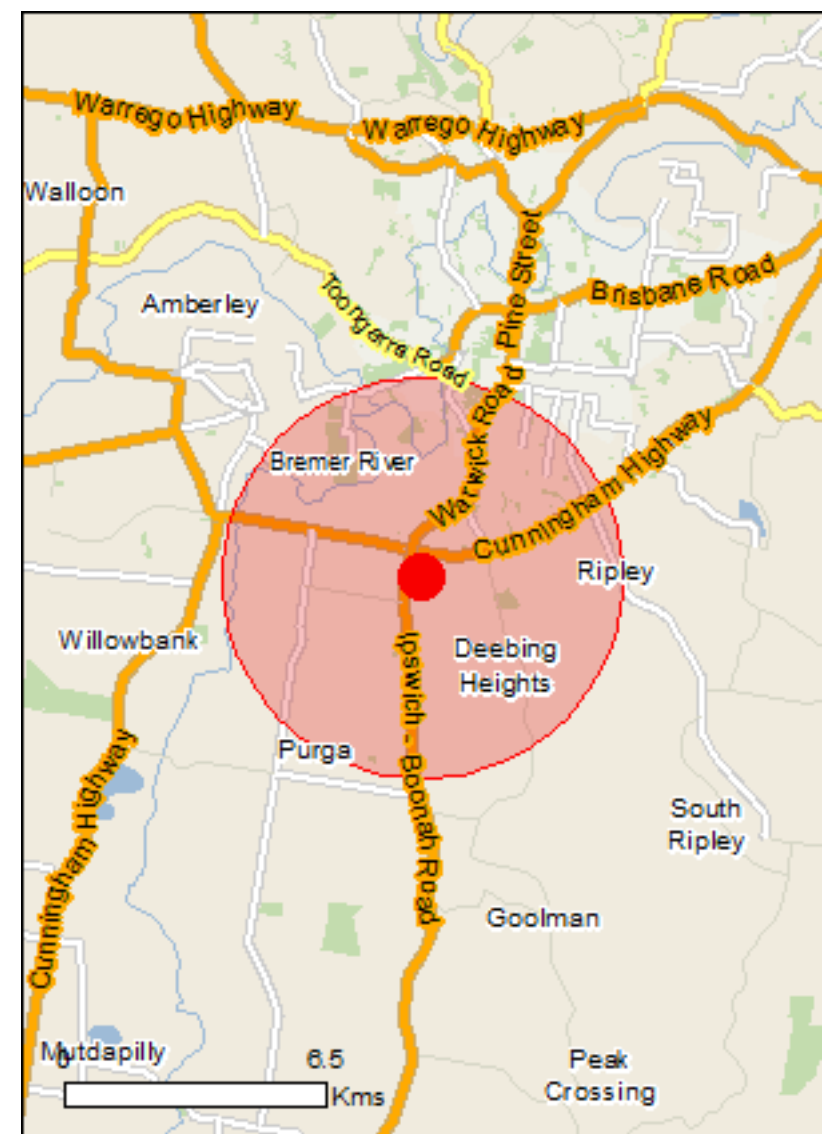
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 5.0Km



Summary

Matters of National Environmental 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:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	35
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 <http://www.environment.gov.au/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 Land:	5
Commonwealth Heritage Places:	1
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	32
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name Moreton bay	Proximity 40 - 50km upstream

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.

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species

 [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Neoceratodus forsteri Australian Lungfish, Queensland Lungfish [67620]	Vulnerable	Species or species habitat known to occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within 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]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area
Cupaniopsis tomentella Boonah Tuckeroo [3322]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Fontainea venosa [24040]	Vulnerable	Species or species habitat may occur within area
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat may occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat may occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

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.

Name
Defence - AMBERLEY - AP3 REMOTE RECEIVERS SITE
Defence - AMBERLEY - AP4 VHF STATION
Defence - AMBERLEY - AP89 BUFFER ZONE
Defence - AMBERLEY - AP90 SMALL ARMS RANGE (PURGA)
Defence - AMBERLEY - RAAF BASE

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Historic		
Amberley RAAF Base Group	QLD	Listed place

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Tir Na Crann	QLD

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
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Birds

Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area

Frogs

Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
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Mammals

Name	Status	Type of Presence
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-27.6693 152.7403

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.

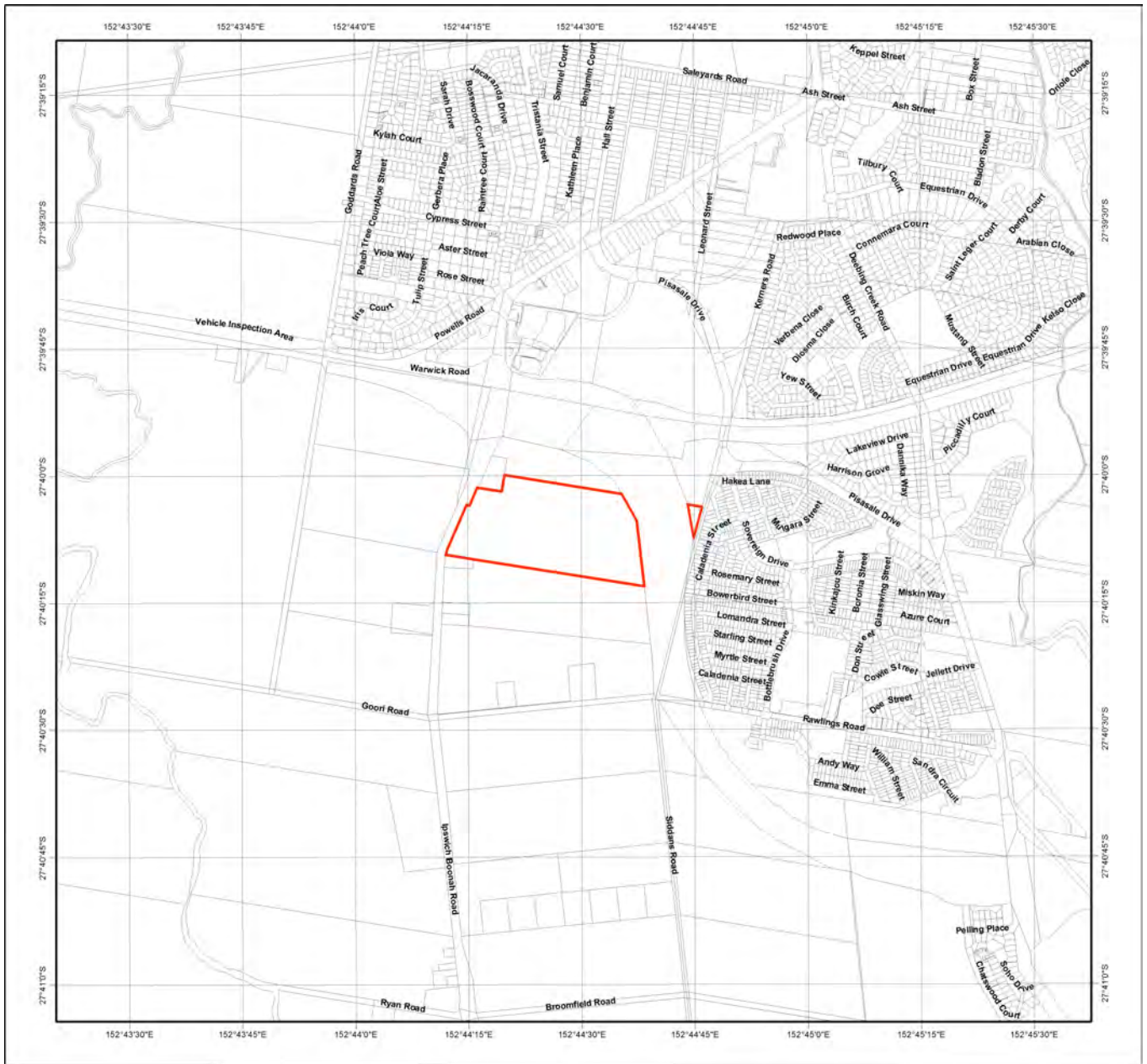
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GPO Box 858

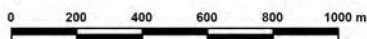
Canberra City ACT 2601 Australia

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Map of Great Barrier Reef Wetland Protection Areas

- Selected Lot and Plan
- Cadastral Boundary
- Wetland in a wetland protection area
- Great Barrier Reef wetland protection area



This product is projected into GDA 1994 MGA Zone 56

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Note:
This map shows the location of wetland protection areas which are defined under the Environmental Protection Regulation 2008. Within wetland protection areas, certain types of development involving high impact earthworks are made assessable under Schedule 3 of the Sustainable Planning Regulation 2009.

The Department of State Development, Manufacturing, Infrastructure and Planning is the State Assessment Referral Agency (SARA) under Schedule 7 of the Sustainable Planning Regulation 2009 for assessable development involving high impact earthworks within wetland protection areas. The Department of Environment and Science is a technical agency.

The policy outcome and assessment criteria for assessing these applications are described in the State Development Assessment Provisions (SDAP) State Code 9 : Great Barrier Reef Wetland Protection Areas.

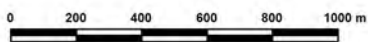
This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science, email planning.support@des.qld.gov.au.



Map of Queensland Wetland Environmental Values

- Selected Lot and Plan
- Cadastral Boundary
- High ecological values waters management intent
-
- Wetlands assessed under section 7
- GBR wetland of high ecological significance
- Wetland of high ecological significance
- Wetland of general ecological significance



Note:
This map shows the location of wetlands on the Map of Queensland Wetland Environmental Values under the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. The map also shows high ecological value waters management intent under Schedule 2 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019.

Wetlands are assessed for ecological significance using the environmental values for wetlands in section 7 of the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. Wetlands are considered either High Ecological Significance (HES) or of General Ecological Significance (GES) for the purposes of the environmental values.

This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

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Annex 2 – Likelihood of Occurrence Assessment

Taxa	Scientific name	Common name	EPBC Act Status	NC Act Status	Distribution/ habitat	Recorded within 5km	Likelihood of occurrence	Justification
Birds	<i>Anthochaera phrygia</i>	Regent honeyeater	CE	E	The regent honeyeater is endemic to mainland south-east Australia. It has a patchy distribution which extends from south-east Queensland, through New South Wales (NSW) and the Australian Capital Territory (ACT), to central Victoria. However, it is highly mobile, occurring only irregularly in most sites, and in variable numbers, often with long periods with few observation anywhere. It is most commonly associated with box-ironbark eucalypt woodland and dry sclerophyll forest, but also inhabits riparian vegetation and lowland coastal forest. In addition it can be found in a range of other habitats including remnant trees in farmland, roadside reserves and travelling stock routes, and in planted vegetation in parks and gardens. Principally a canopy bird, it is reliant on select species of eucalypt and mistletoe which provide rich nectar flows. Rapid declines have been observed in recent decades, thought to be mainly due to the clearing, fragmentation and degradation of its habitat.	No	Low	Some records in region, no suitable mistletoe observed within Property boundary.
Birds	<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes and spikerushes. The species is a secretive, stocky, heron-like bird, and can be very well camouflaged. 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. The species nests adjacent to relatively deep, densely vegetated freshwater swamps and pools, building its nests under dense cover over shallow water (Marchant & Higgins 1990). The Australasian Bittern is widespread but uncommon over south-eastern Australia. In Queensland, the species occurs as far north as Yeppoon and west to Wyandra. In the southeast there is habitat remaining on Fraser Island, the Fraser Coast, North Stradbroke Island, Redlands and out into the Lockyer Valley.	No	Moderate	Some suitable habitat, some records in region

Birds	<i>Erythrotriorchis radiatus</i>	Red Goshawk	V	E	Occurs in coastal and sub-coastal woodlands, rainforests, riparian areas and Eucalypt forests. Feeds mainly on other birds. Nests in large trees, frequently the tallest in a tall stand. Nest trees are usually within 1 km of permanent water. Rarely breeds in areas with fragmented native vegetation. The species is endemic to Australia. Sparsely dispersed across coastal and subcoastal Australia from the Kimberleys (NT) to northern NSW. Likely to occur in central Australia, but no breeding has been recorded. Within Queensland, most sightings are recorded within existing National Parks or state forests.	No	Low	No recent records in SEQ, requires a larger habitat area but may pass through
Birds	<i>Falco hypoleucos</i>	Grey Falcon	V	V	The species occurs in arid and semi-arid Australia, mainly found where annual rainfall is less than 500 mm, except when wet years are followed by drought, when the species might become marginally more widespread. 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. The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses. Breeding occurs from Jun-Nov in the old nests of other birds, particularly those of other raptors or corvids, usually in the tallest trees along watercourses.	No	Transient	No recent records in SEQ, moves seasonally and may pass through
Birds	<i>Geophaps scripta scripta</i>	Squatter pigeon (southern)	V	V	The habitat of this species is generally defined as open forests to sparse, open woodlands and scrub which are dominated by Eucalypt species, contain remnant or regrowth vegetation and are within 3 km of watercourses. Forms nests in the ground beneath grasses or logs. Usually forages for seeds along roadsides or tracks. Within Queensland, known distribution occurs on the inland slopes of the Great Dividing Range from Cape York Peninsula to south east Queensland. Potential distribution extends to northern NSW.	No	Low	No recent records in SEQ.
Birds	<i>Grantiella picta</i>	Painted Honeyeater	V	V	The species is sparsely distributed from south-eastern Australia to north-western Queensland and eastern Northern Territory. 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, these host more mistletoes as its diet mainly consists of mistletoe fruits. It is more common in wider blocks of remnant woodland, and one of its key threats is habitat loss from mature trees being cleared or habitat degradation from grazing by livestock.	No	Low	No recent records in SEQ, requires a larger habitat area and no suitable mistletoe identified within Property boundary.

Birds	<i>Lathamus discolor</i>	Swift parrot	CE	E	During summer, it breeds in colonies in blue gum forest of south-east Tasmania. Infrequent breeding also occurs in north-west Tasmania. Breeding occurs in tree hollows and they have high site fidelity. The entire population migrates to the mainland for winter. On the mainland it disperses widely and forages on flowers and psyllid lerps in eucalypts. The birds mostly occur on inland slopes, but occasionally occur on the coast.	No	Transient	Some suitable habitat, some records in region. Nonbreeding visitor to Queensland
Birds	<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	CE	E	Occurs in fresh and brackish waters on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. Occasionally recorded inland around ephemeral and permanent lakes, dams, and waterholes with bare edges of mud or sand. Forage on worms, molluscs, crustaceans and insects. Generally roost on beaches, around lagoons and other wetlands and occasionally in dunes and in saltmarshes. Migratory from Australia to Siberia. Occurs mainly around the coastlines of Australia, and is widespread inland, though in smaller numbers. Within Queensland, scattered records occur in the Gulf of Carpentaria, with widespread records along the coast south of Cairns. There are sparsely scattered records inland.	No	Low	Not many records in area, not common in small ponds
Birds	<i>Psephotus pulcherrimus</i>	paradise parrot	EX (Extinct)	PE (Extinct in the Wild)	The Paradise Parrot is now extinct. It formerly occurred in central and southern Queensland, north near Brisbane to sites near Duaringa and on the Comet and Nogoa Rivers, and west to St George. The last documented record of the species was in 1927.	(In 1905)	Low	Extinct
Birds	<i>Rostratula australis</i>	Australian Painted Snipe	E	V	The Australian Painted Snipe has been recorded at wetlands all around Australia but it is most common in eastern Australia, where it has been recorded at scattered locations throughout much of Queensland. It generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of lignum <i>Muehlenbeckia</i> or canegrass or sometimes tea-tree. It sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber. Australian Painted Snipe breeding habitat requirements may be quite specific: shallow wetlands with areas of bare wet mud and both upper	No	Transient	May utilise wetlands on site. Some records in area. Non breeding habitat observed within Property boundary.

					and canopy cover nearby. Nest records are all, or nearly all, from or near small islands in freshwater wetlands.			
Birds	<i>Turnix melanogaster</i>	Black-breasted Button-quail	V	V	<p>Restricted to rainforests and forests, particularly low closed forests, semi-evergreen vine thicket, low microphyll vine forest, araucarian microphyll/notophyll vine forest, dense acacia thickets, and sometimes sand dunes. Mostly in areas high rainfall (Hughes & Hughes 1991). An extensive dense leaf-litter layer is required for foraging (Hughes & Hughes 1991) and possibly also roosting. Fallen logs and a dense, heterogeneously distributed shrub layers are also considered to be important habitat characteristics for shelter and breeding (Smith et al. 1998). The diet is mostly invertebrates, taken from litter on the forest floor (Hughes & Hughes 1991), but seeds are also possibly taken.</p> <p>In Queensland, extends from near Byfield in the north, south to the New South Wales border and westwards to Palm Grove National Park and Barakula State Forest (Marchant & Higgins 1993). The most significant populations appear to be in the Yarraman-Nanango, Jimna-Conondale and Great Sandy regions .</p>	No	Low	A few records in area. No suitable habitat within area.
Birds, Migratory Terrestrial Species	<i>Hirundapus caudacutus</i>	White-throated Needletail	V, M	V	<p>In eastern Australia, it is recorded in all coastal regions of Queensland and NSW extending inland to the western slopes of the Great Dividing Range and occasionally in the adjacent inland plains. The general habitat consists of heights of less than 1 m up to more than 100 m above the ground. Recorded most above wooded areas, including open forest and rainforest. Roosts in trees amongst dense foliage in the canopy or in hollows.</p>	Yes	Transient	Many records in region, suitable transient habitat within Property boundary. Limited suitable habitat

								observed within Property boundary.
Birds, Migratory Wetland Species	<i>Calidris ferruginea</i>	Curlew Sandpiper	CE	CE; SL	In Australia, Curlew Sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states during the non-breeding period, and also during the breeding season when many non-breeding one year old birds remain in Australia rather than migrating north. In Queensland, scattered records occur in the Gulf of Carpentaria, as well as sparsely scattered records inland. 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 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. Occasionally they are recorded around floodwaters. Curlew Sandpipers may roost on coastal or near-coastal lagoons and other wetlands.	No	Transient	In range. Possible habitat in wetlands, lakes or floodplains in flood. Non breeding habitat observed within Property boundary.
Fish	<i>Neoceratodus forsteri</i>	Australian Lungfish, Queensland Lungfish	V	V	The Australian Lungfish requires still or slow-flowing, shallow, vegetated pools with clear or turbid water in which to spawn and feed. The species is restricted to areas of permanent water and cannot live in saline waters or migrate through sea water. Emergent or submerged vegetation are essential for successful deposition of eggs and for providing refuges for juveniles. The Australian Lungfish is endemic to Australia and restricted to south-eastern Queensland. The species' natural distribution is the Mary, Burnett and Brisbane River systems and (possibly) the Pine River system. The species has been translocated to many other locations and translocated populations persist in the Coomera, Condamine, Albert and Logan Rivers.	No	Low	No recent records in area, water pools may be suitable but connectivity to creek may be too ephemeral.
Insects	<i>Argynnis hyperbius inconstans</i>	Australian Fritillary	CE	E	The Australian fritillary has been recorded in scattered locations across south-eastern Queensland and north-eastern New South Wales. One of the last reliable sightings of the species was in 2001 near Port Macquarie. The Australian fritillary usually occurs around river estuaries or open, swampy coastal areas. The species is restricted to areas where the larval food plant, <i>Viola betonicifolia</i> (the arrowhead violet), occurs. The arrowhead violet is a small perennial herb which usually grows in damp, shaded forest habitats (Australian National Herbarium 2015) and often grows in association with <i>Lomandra longifolia</i> (long leaved matrush) and <i>Imperata cylindrica</i> (bladey grass)	No	Low	No recent records in area, no food plant recorded

Mammals	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat, Large Pied Bat	V	V	The Large-eared Pied Bat's former and current distributions are poorly known. The species requires a combination of sandstone cliff/escarpment to provide roosting habitat that is adjacent to higher fertility sites, particularly box gum woodlands or river/rainforest corridors which are used for foraging. Almost all records have been found within several kilometres of cliff lines or rocky terrain. The majority of records are from canopied habitat, suggesting a sensitivity to clearing, although narrow connecting riparian strips in otherwise cleared habitat are sometimes quite heavily used. In south-east Queensland the species has primarily been recorded from higher altitude moist tall open forest adjacent to rainforest.	No	Low	No recent records in area, no sandstone/cliff escarpment roosting / foraging habitat in area
Mammals	<i>Dasyurus hallucatus</i>	Northern Quoll	E	LC	The Northern Quoll was historically common across northern Australia, but it now occurs in five regional populations across Queensland, the Northern Territory and Western Australia both on the mainland and on offshore islands (QLD DERM). In Queensland it is known to occur as far south as Gracemere and Mt Morgan, south of Rockhampton, as far north as Weipa in Queensland and extends as far west into central Queensland to the vicinity of Carnarvon Range National Park. The species is highly fragmented in the state and it has suffered severe declines from its former distribution. The Northern Quoll occupies a diversity of habitats across its range which includes rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert. Northern Quoll habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal. Rocky habitats are usually of high relief, often rugged and dissected but can also include tor fields or caves in low lying areas. 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. Northern Quolls sometimes occur around human dwellings and campgrounds. Northern Quolls appear to be most abundant in habitats within 150 km of the coast. They also prefer areas with less fire impact and close to permanent water.	No	Low	No records in area, no suitable habitat
Mammals	<i>Dasyurus maculatus maculatus</i>	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	E	E	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. Mostly nocturnal, although will hunt during the day; spends most of the time on the ground, although also an excellent climber and will hunt possums and gliders in tree hollows and prey on roosting birds.	No	Low	A couple of records in area, needs connectivity suitable habitat

Mammals	<i>Petauroides volans</i>	Greater Glider	V	V	Tall eucalypt forests and woodlands. Uncommon, but widespread in southern Brisbane suburbs; probably extinct in northern and western suburbs. Patchy distribution along coastal eastern Australia. The Greater Glider (southern) is found in tall forests and woodlands, on fertile sites, with a diversity of eucalypt species. It is distributed across an elevational range from sea level to 1200 m ASL, with the highest numbers recorded at higher rather than lower elevations. The habitat requirements for the Greater Glider (southern), includes large diameter at breast height (DBH) Eucalypt trees, as the older trees (120 years) generate the hollows required by the species	No	Low	Lack of connectivity and quality habitat
Mammals	<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	V	V	This species prefers rocky habitats, including loose boulder-piles, rocky outcrops, steep rocky slopes, cliffs, gorges and isolated rock stacks and utilises tree limbs. A range of vegetation types are associated with Brush-tailed Rock-wallaby habitat, including dense rainforest, wet sclerophyll forest, vine thicket, dry sclerophyll forest, and open forest. Brush-tailed Rock-wallabies typically shelter during the day in rock crevices, caves and overhangs, yet often bask in exposed sunny spots. Within their home range, rock-wallabies habitually use the same refuges, sunning spots, feeding areas and pathways. Rocky outcrops appear crucial to current habitat selection by rock-wallabies, as well as dense arboreal cover and 'lookout' structures. Preferred breeding habitats include a rocky habitat with an abundant supply of ledges, caves and potential pathways, plus a northerly aspect . Rock-wallabies forage mostly at night on grasses (35–50%), forbs (25–40%) and "browse" (shrubs, trees and climbers) (12–30%) and rarely ferns and sedges. The Brush-tailed Rock-wallaby is still the most widespread Petrogale in eastern Australia. It occurs throughout the Great Dividing Range from the border with NSW to Nanango, 100 km northwest of Brisbane .	No	Low	Recent records in area, however habitat in Property boundary unsuitable
Mammals	<i>Phascolarctos cinereus</i>	Koala	V	V	Koalas inhabit any forest or woodland containing species that are known koala food trees, or shrubland with emergent food trees. Koala habitat trees include: a) a food tree of the Corymbia, Eucalyptus, Lophostemon, or Melaleuca genera b) a preferred shelter species such as Angophora. (State of Queensland, 2010).	Yes	High	Signs found and records in site. Core habitat mapped.

Mammals	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	LC	The Grey-headed Flying-fox is Australia's only endemic flying-fox and occurs in the coastal belt from Rockhampton in central Queensland to Melbourne in Victoria. However, only a small proportion of this range is used at any one time, as the species selectively forages where food is available. As a result, patterns of occurrence and relative abundance within its distribution vary widely between seasons and between years. At a local scale, the species is generally present intermittently and irregularly. The Department of the Environment maintains records of known flying-fox camps. These locations have been used to produce maps of the modelled distribution. 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 crops and on introduced tree species in urban areas. The primary food source is blossom from Eucalyptus and related genera but in some areas it also utilises a wide range of rainforest fruits. None of the vegetation communities used by the Grey-headed Flying-fox produce continuous foraging resources throughout the year. As a result, the species has adopted complex migration traits in response to ephemeral and patchy food resources.	No	Moderate	Roosts located from 2-7.5km away in Ipswich (Bremer river). May use site for foraging.
Migratory Marine Birds	<i>Apus pacificus</i>	Fork-tailed Swift	M	SL	They are found in scattered areas around Qld but are more widespread west of the Great Divide, and are commonly found west of the line joining Chinchilla and Hughenden. The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground. They mostly occur over dry or open habitats, like treeless grassland and sandplains covered with spinifex or open farmland, however they are also associated with a variety of other habitats including riparian woodland and swamps, low scrub, heathland or saltmarsh. They also often occur in areas of updraughts, especially around cliffs. They probably roost aerially, but are occasionally observed to land. The Fork-tailed Swift does not breed in Australia.	No	Transient	Potentially occurs in the area, but does not roost or feed on the ground. Almost exclusively aerial. (Non-breeding in Aus).
Migratory Terrestrial Species	<i>Cuculus optatus</i>	Horsfield's Cuckoo	M	LC	Non-breeding migrant to Aus (Sept- May). The species uses a range of vegetated habitats such as monsoon rainforest, wet sclerophyll forest, open Casuarina, Acacia or Eucalyptus woodlands and appears quite often along edges of forests, or ecotones between forest types. There are widespread records from the eastern slopes of the Great Divide from near Cooktown to the NSW border.	No	Transient	In range, may use habitat like forests and woodlands for foraging and roosting

								(Non-breeding in Aus).
Migratory Terrestrial Species	<i>Monarcha melanopsis</i>	Black-faced Monarch	M	SL	The Black-faced Monarch is widespread in eastern Australia. The Black-faced Monarch mainly occurs in rainforest ecosystems, including semi-deciduous vine-thickets, complex notophyll vine-forest, tropical (mesophyll) rainforest, subtropical (notophyll) rainforest, mesophyll (broadleaf) thicket/shrubland, warm temperate rainforest, dry (monsoon) rainforest and (occasionally) cool temperate rainforest. It is also sometimes found in nearby open eucalypt forests (mainly wet sclerophyll forests), especially in gullies with a dense, shrubby understorey as well as in dry sclerophyll forests and woodlands, often with a patchy understorey. The species especially occurs in 'marginal' habitats during winter or during passage (migration). The movements of the Black-faced Monarch are poorly known. They exhibit migratory behaviour, spending spring, summer and autumn in eastern Australia, and wintering in southern and eastern Papua New Guinea from March to August.	No	Low	No main habitat in site, may pass through. Some records in region.
Migratory Terrestrial Species	<i>Monarcha trivirgatus</i>	Spectacled Monarch	M	SL	The Spectacled Monarch is found in coastal north-eastern and eastern Australia, including coastal islands, from Cape York, Queensland to Port Stephens, New South Wales. The Spectacled Monarch prefers thick understorey in rainforests, wet gullies and waterside vegetation, as well as mangroves.	No	Low	No main habitat in site, may pass through. Some records in region.
Migratory Terrestrial Species	<i>Motacilla flava</i>	Yellow Wagtail	M	SL	The Yellow Wagtail is a regular but uncommon non-breeding summer visitor to northern Australia. Habitat requirements for the Yellow Wagtail are highly variable, but typically include open grassy flats near water. Habitats include open areas with low vegetation such as grasslands, pastures, damp open areas such as muddy or grassy edges of wetlands, rivers, irrigated farmland, dams and waterholes. Resident in Queensland to Rockhampton, summer breeding migrant further south.	No	Transient	No records in the area, unlikely vagrant

Migratory Terrestrial Species	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	M	SL	The Satin Flycatcher is widespread in eastern Australia. Satin Flycatchers are widespread in south-eastern Queensland. Satin Flycatchers mainly inhabit eucalypt forests, often near wetlands or watercourses. They 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. They also occur in eucalypt woodlands with open understorey and grass ground cover, and are generally absent from rainforest. Satin Flycatchers are migratory, moving north in autumn to spend winter in northern Australia and New Guinea. They return south in spring to spend summer in south-eastern Australia.	No	Low	Some suitable habitat in site, may pass through. Some records in region.
Migratory Terrestrial Species	<i>Rhipidura rufifrons</i>	Rufous Fantail	M	SL	The Rufous Fantail occurs in coastal and near coastal districts of northern and eastern Australia. In east and south-east Australia, the Rufous Fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts such as Tallow-wood (<i>Eucalyptus microcorys</i>), Mountain Grey Gum (<i>E. cypellocarpa</i>), Narrow-leaved Peppermint (<i>E. radiata</i>), Mountain Ash (<i>E. regnans</i>), Alpine Ash (<i>E. delegatensis</i>), Blackbutt (<i>E. pilularis</i>) or Red Mahogany (<i>E. resinifera</i>); usually with a dense shrubby understorey often including ferns. They also occur in subtropical and temperate rainforests. They occasionally occur in secondary regrowth, following logging or disturbance in forests or rainforests. When on passage, they are sometimes recorded in drier sclerophyll forests and woodlands. The Rufous Fantail breeds from about September to February, with 81% of eggs laid November-December. Movement patterns are not fully understood, but some populations of the Rufous Fantail in east Australia are migratory.	No	Moderate	Some suitable habitat in site, many records in region.
Migratory Wetland Species	<i>Actitis hypoleucos</i>	Common Sandpiper	M	SL	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The species utilises a wide range of coastal wetlands and some inland wetlands. The Common Sandpiper has been recorded in deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans. Non-breeding in Aus.	No	Transient	In range, may use wetlands, water courses, lakes or artificial water sources in Property boundary. (Non-breeding in Aus).

Migratory Wetland Species	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	M	SL	The Sharp-tailed Sandpiper is a non-breeding migrant in Australia (August-April), mostly to the south-east but are widespread in both inland and coastal locations and in both freshwater and saline habitats. It is very sparsely scattered inland in Qld. The species prefers muddy edges of shallow fresh or brackish wetlands, including lagoons, swamps, lakes and dams, waterholes, soaks. They also use flooded paddocks, sedgeland and other ephemeral wetlands, but leave when they dry.	No	Transient	In range, may use wetlands, water courses, lakes or artificial water sources in Property boundary. (Non-breeding in Aus).
Migratory Wetland Species	<i>Calidris melanotos</i>	Pectoral Sandpiper	M	SL	A non-breeding migrant in Australia (Sep - Jun). In Qld most records occur on the coast but scattered records have been made inland. The species is usually found in coastal areas but is occasionally found further inland. The Pectoral Sandpiper prefers shallow fresh to saline wetlands, but will also utilise lagoons, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	No	Transient	In range, may use wetlands, water courses, lakes or artificial water sources in Property boundary. (Non-breeding in Aus).
Migratory Wetland Species	<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe	M	SL	Latham's Snipe is a non-breeding visitor to south-eastern Australia, and is a passage migrant through northern Australia (Jul - Apr). In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). They are also regularly recorded in or around modified or artificial habitats including pasture, ploughed paddocks, irrigation channels and drainage ditches.	No	Transient	In range, may use wetlands, water courses, lakes or artificial water sources in Property boundary. (Non-breeding in Aus).

Migratory Wetland Species	<i>Pandion haliaetus</i>	Osprey	M	SL	In Australia Ospreys are found right around the mainland coastline. They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia. The Osprey is a piscivore (fish eater), foraging over open, clear water. Favoured habitats are coastal areas, especially the mouths of large rivers, lagoons and lakes but also along the larger coastal rivers. Breeding habitat for this species is in close proximity to water bodies. Large nests of sticks, driftwood and bark are constructed on a range of substrates, though most commonly nests are in the upper forks or broken trunks of dead trees, or in the dead canopy of a living tree.	No	Low	In range, may occur in Property boundary as it occasionally travels inland along rivers. Needs large water bodies to breed.
Migratory Wetland Species	<i>Tringa nebularia</i>	Common Greenshank , Greenshank	M	SL	The Common Greenshank does not breed in Australia, however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees. The species arrives in Australia from August to september and departs around March to April.	No	Transient	In range, may use wetlands, water courses, lakes or artificial water sources in Property boundary. (Non-breeding in Aus).
Plant	<i>Arthraxon hispidus</i>	Hairy-joint Grass	V	LC	In Australia, hairy joint-grass has been recorded from scattered locations throughout Queensland and on the northern tablelands and north coast of NSW. Hairy joint-grass has been recorded growing around freshwater springs on coastal foreshore dunes, in shaded gullies, on creek banks, on sandy alluvium in creek beds in open forests and with bog mosses in mound springs (TSSC 2008). Flowers from March to July.	No	Moderate	Not in range but may be associated with wet or damp areas in Property boundary.
Plant	<i>Bosistoa transversa</i>	Three-leaved Bosistoa, Yellow Satinheart	V	LC	Bosistoa transversa is known from the Richmond River, NSW, to Mt Larcom near Gladstone, Queensland. Hrows in wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 m in altitude. Associated vegetation includes <i>Argyrodendron trifoliolatum</i> , <i>Syzygium hodgkinsoniae</i> , <i>Endiandra pubens</i> , <i>Dendrocnide photinophylla</i> , <i>Acmena ingens</i> , <i>Diploglottis australis</i> and <i>Diospyros mabacea</i> (Queensland Herbarium 2012). Flowers from Jan to May and ripe fruits present from May to Nov.	No	Low	Not in range and habitat in Property boundary unsuitable

Plant	<i>Callitris baileyi</i>	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. (DEC 2005; Stanley & Ross 1983)	Yes	High	No suitable habitat of rocky slopes and mountainous areas not identified within Property boundary. However, limited suitable habitat of ironbark and spotted gum found on site. Not observed during field assessment.
Plant	<i>Calyptochloa gracillima subsp. ipsviciensis</i>		-	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 F.Muell.and E. moluccana Roxb. and/or Corymbia citriodora subsp. variegata (F.Muell.) A.R.Bean & M.W.McDonald on loam to clay loam duplex soils derived from shale on gently undulating to hilly terrain. REs represented include 12.9–10.2, 12.9–10.3 and 12.9–10.19. Associated ground layer species include Aristida caput-medusae Domin, Cleistochloa subjuncea C.E.Hubb. and Themeda triandra Forssk. The habitat is typically moderately shaded.	Yes	High	In range. Suitable habitat observed on site. No observed during field assessment.
Plant	<i>Cupaniopsis shirleyana</i>	Wedge-leaf Tuckeroo	V	V	Cupaniopsis shirleyana is restricted to south east Queensland, from Brisbane, north to Bundaberg. The species is known from Pine Mountain Reserve, Mt Gravatt, Cold Creek State Forest and Miva State Forest (Queensland Herbarium, 2012). Cupaniopsis shirleyana occurs at 20 to 550 m elevation and is recorded in a variety of rainforest types including vine thicket and dry rainforest. Occurs on hillsides, mountain tops, lower slopes of valleys, stream beds and along riverbanks. Grows in a variety of soil types (Queensland Herbarium, 2012). Flowering period is mainly in May to July, occasionally January or March.	No	Low	Not in range and no suitable habitat in Property boundary

Plant	<i>Cupaniopsis tomentella</i>	Boonah Tuckeroo	V	V	Boonah Tuckeroo is known only from an area between Boonah and Ipswich in south-eastern Queensland (Queensland Herbarium, 2008). It grows in vine thickets predominantly on fertile clay soils. These areas have been extensively cleared for agriculture and close settlement over the last 150 years, and the only seven known occurrences are confined to small isolated remnants on scree slopes and roadsides. All known records are from outside of conservation reserves (Queensland Herbarium, 2008). The most recent population estimate is between 120–140 individuals (Barry & Thomas, 1994). This species occurs within the South East Queensland Natural Resource Management Region. The distribution of this species overlaps with the following EPBC Act-listed threatened ecological communities: Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions, and Brigalow (Acacia harpophylla dominant and co-dominant).	No	Low	Not in range and no suitable habitat in Property boundary
Plant	<i>Dichanthium setosum</i>	Bluegrass	V	LC	In Queensland it has been reported from the Leichhardt, Morton, North Kennedy and Port Curtis regions. <i>Dichanthium setosum</i> is associated with heavy basaltic black soils and red-brown loams with clay subsoil. Associated species include White Box (<i>Eucalyptus albens</i>), Silver-leaved Ironbark (<i>Eucalyptus melanophloia</i>), Yellow Box (<i>Eucalyptus melliodora</i>), Manna Gum (<i>Eucalyptus viminalis</i>), Amulla (<i>Myoporum debile</i>), Purple Wire-grass (<i>Aristida ramosa</i>), Kangaroo Grass (<i>Themeda triandra</i>), Fine-leaved Tussock-grass (<i>Poa sieberiana</i>), Red-leg Grass (<i>Bothriochloa ambigua</i>), Pitted Blue-grass (<i>Bothriochloa decipiens</i>), <i>Macrozamia stenomera</i> , Small Woolly Burr-medic (<i>Medicago minima</i>), Scaly Buttons (<i>Leptorhynchos squamatus</i>), <i>Lomandra</i> aff. <i>longifolia</i> , Australian Bugle (<i>Ajuga australis</i>), Bogan-flea (<i>Calotis hispidula</i> and <i>Austrodanthonia</i> spp., <i>Dichopogon</i> spp., <i>Brachyscome</i> spp., <i>Vittadinia</i> spp., <i>Wahlenbergia</i> spp. and <i>Psoralea</i> spp.	No	Low	Not in range and suitable habitat and soil type not observed within Property boundary
Plant	<i>Fontainea venosa</i>		V	V	<i>Fontainea venosa</i> occurs south west of Beenleigh near Brisbane, along the Koolkooroon Creek in the Boyne Valley, and near Littlemore, in Queensland. The species is located within Dawes National Park State and Marys Creek State Forest (Queensland Herbarium, 2012). <i>Fontainea venosa</i> 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. Associated species include <i>Backhousia citriodora</i> , <i>Actephila lindleyi</i> , <i>Bosistoa medicinalis</i> , <i>Diospyros fasciculosa</i> , <i>Barkly syringifolia</i> , <i>Araucaria cunninghamii</i> , <i>Owenia venosa</i> , <i>Aphananthe philippinensis</i> , <i>Argyrodendron trifoliolatum</i> , <i>Croton acronychioides</i> , <i>Pentaceras australe</i> and <i>Planchonella myrsinoides</i> (Queensland Herbarium, 2012). Flowers have been	No	Low	Not in range and no suitable habitat in Property boundary

					recorded from January to October and ripe fruit from August to October (Department of the Environment, Water, 2008b).			
Plant	<i>Melaleuca irbyana</i>	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. (Byrnes 1984; Barlow 1987)	Yes	High	Suitable habitat within Property boundary. Recorded during field assessment.
Plant	<i>Notelaea ipsviciensis</i>	Cooneana Olive	CE	CR	The Cooneana Olive is known from only three closely clustered sub-populations in the Dinmore, Ipswich . Total extent of occurrence is less than 2 square kilometers, and total number of specimens is 17 (all mature). The Cooneana Olive grows as an understorey plant in open woodlands, and is primarily associated with eucalypt-dominated dry sclerophyll communities situated on poor, sandstone-based soils (Lock et al., 2004; Beyleveld, 2006, 2007). This species occurs within the South-East Queensland Natural Resource Management Region.	No	Moderate	Limited range but may be associated with open woodland in Property boundary. Not observed during field assessment.
Plant	<i>Notelaea lloydii</i>	Lloyd's Olive	V	V	Notelaea lloydii is endemic to south-east Queensland between Mt Brisbane, near Somerset Dam, to just south of Beaudesert and as far west as Mt Berryman near Laidley, a range of approximately 120 km, with an area of occupancy of approximately 3700 km ² (Halford, 1998). It commonly occurs in open eucalypt forest, often near the margins of vine thickets, vine forests and softwood scrub at altitudes between 80 and 480 m. It is usually found on stony, shallow and rocky soils derived from sandstone or acid volcanic rocks, often on steep slopes, or near drainage lines (Queensland Herbarium, 2008). At some sites it has been recorded as being rare, or with a few plants only, but the total number of individuals is unknown. It is recorded from three national parks in the area, but most populations occur on road verges or freehold land (Halford, 1998; Queensland Herbarium, 2008).	No	Moderate	Not in range but may be associated with open eucalypt forest in Property boundary. Not observed during field assessment.

Plant	<i>Rhodamnia rubescens</i>	Scrub Turpentine, Brown Malletwood	CE	CR	Occurs in coastal districts north from Batemans Bay in New South Wales, approximately 280 km south of Sydney, to areas inland of Bundaberg in Queensland. Populations of <i>R. rubescens</i> typically occur in coastal regions and occasionally extend inland onto escarpments up to 600 m a.s.l. in areas with rainfall of 1,000-1,600 mm. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. This species is characterised as highly to extremely susceptible to infection by Myrtle Rust. Myrtle Rust affects all plant parts.	No	Low	Not in range and no suitable habitat in Property boundary
Plant	<i>Rhodomyrtus psidioides</i>	Native Guava	CE	CR	<i>Rhodomyrtus psidioides</i> is known to occur from coastal districts of NSW north from Gosford (33.43° S, 151.34° E) to Maryborough in Queensland (25.52° S, 152.70° E). Occurrence records are typically restricted to coastal and sub-coastal areas of low elevation however the species does occur up to c. 120km inland in the Hunter and Clarence River catchments and along the Border Ranges (B. Makinson in litt. April 2016). Often along watercourses and on rainforest margins.	No	Low	Not in range and no suitable habitat in Property boundary
Plant	<i>Samadera bidwillii</i>	Quassia	V	V	<i>Samadera bidwillii</i> has been collected from Scawfell Island, east of Mackay, to as far south as Bauple and west to Biloela. The species is distributed within Byfield National Park, Goomborian National Park, Mount Bauple National Park, Mount Walsh National Park, South Cumberland National Park, Byfield State Forest, Cordalba State Forest Tiaro State Forest, Tuan State Forest, Young State Forest 3 and Callide Timber Reserve (Queensland Herbarium, 2012). <i>Samadera bidwillii</i> commonly occurs in lowland rainforest often with <i>Araucaria cunninghamii</i> or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland, it is commonly found in areas adjacent to both temporary and permanent watercourses up to 510 m altitude. Commonly associated trees in the open forest and woodlands include spotted gum (<i>Corymbia citriodora</i>), grey gum (<i>Eucalyptus propinqua</i>), white mahogany (<i>E. acmenoides</i>), forest red gum (<i>E. tereticornis</i>), pink bloodwood (<i>Corymbia intermedia</i>), ironbark (<i>E. siderophloia</i>), gum topped box (<i>E. moluccana</i>), Gympie messmate (<i>E. cloeziana</i>) and broad-leaved ironbark (<i>E. fibrosa</i>) (Queensland Herbarium, 2012). Flowers mainly in summer (Department of the Environment, 2019).	No	Moderate	Not in range but may be associated with open forest and woodlands in Property boundary

Plant	<i>Thesium australe</i>	Austral Toadflax, Toadflax	V	V	Thesium australe is found in south east Queensland from Bundaberg to Dalby and to the NSW border, and also found west in Carnarvon NP. The species also occurs in NSW and Victoria, it is presumed to be extinct in Tasmania (DSEWPC, 2012). Thesium australe grows in grassland or woodland, often in damp sites. Examples of associated vegetation includes: open woodland with Eucalyptus tereticornis and E. tindaliae on skeletal soils; on heavy alluvium soil in grassy E. populnea woodland; on black cracking clay in grassland of Dichanthium sericeum; and grassland dominated by Themeda triandra and Heteropogon contortus on basaltic, rocky soils (Queensland Herbarium, 2012). Flowering is recorded from Spring to Autumn (Department of the Environment, 2019).	No	Moderate	Not in range. Limited suitable habitat in Property boundary
Reptiles	<i>Delma torquata</i>	Adorned Delma, Collared Delma	V	V	The Collared Delma normally inhabits eucalypt-dominated woodlands and open-forests. In West-Brisbane the species typically inhabits forests with a midstorey of Red Ash (Alphitonia excelsa), Wattles including Brisbane Wattle (Acacia fimbriata), Hickory Wattle (A. concurrens), Brush Box (Lophostemon confertus), Hovea (Hovea longifolia), and Lantana (Lantana camara). The ground cover is predominantly native grasses such as Kangaroo Grass (Themeda triandra), Barbed-wire Grass (Cymbopogon refractus), Wiregrass (Aristida sp) and Lomandra (Lomandra sp). The presence of rocks, logs, bark and other coarse woody debris, and mats of leaf litter (typically 30–100 mm thick) appears to be an essential characteristic of the Collared Delma microhabitat and is always present where the species occurs.	No	Moderate	Although not in range, suitable woodland and open forest habitat is present, together with suitable microhabitat. Some records in area.
Reptiles	<i>Furina dunmalli</i>	Dunmall's Snake	V	V	Dunmall's Snake has a patchy distribution in southeastern Queensland and the border area with New South Wales, west to Carnarvon National Park, and north to Rockhampton on the coast, and Clermont west of the Great Dividing Range. It occurs primarily in the Brigalow Belt region in the south-eastern interior of Queensland. The species has been found in a broad range of habitats, including black alluvial cracking clay and clay loams dominated by Brigalow, and varied open forest and woodland associations on sandstone derived soils. open forest and woodland associations on sandstone derived soils	No	Low	Habitat requirements not well known but is not core and no records in area

1. Listed as Critically Endangered (CE), Endangered (E), Vulnerable (V), Migratory (M) and Extinct (EX) under the EPBC Act.
2. Listed as Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Extinct (PE) under the NC Act.

Annex 3 – Correspondence with Government Departments

From: [Water Services South](#)
To: [Alana Homewood](#)
Cc: [Lisa Carter](#)
Subject: Unmapped watercourse Lots 1 & 2 SP193446
Date: Thursday, 30 September 2021 4:07:44 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)

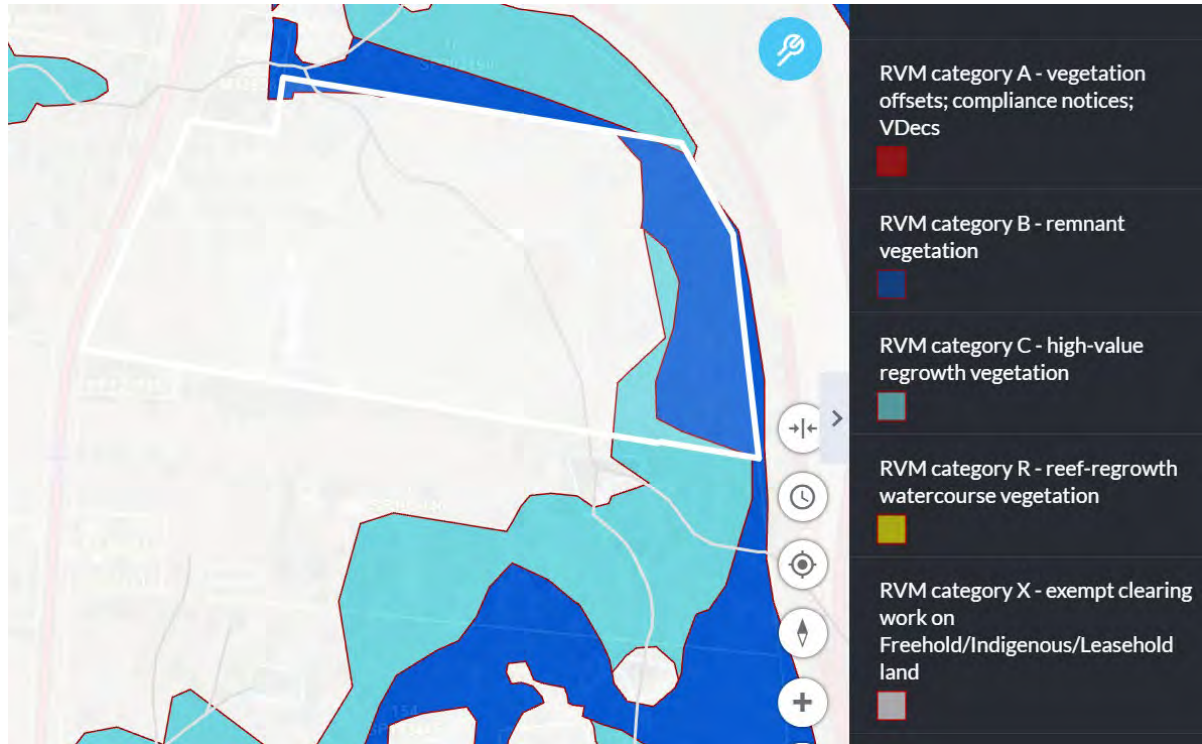
Some people who received this message don't often get email from waterservicessouth@rdmw.qld.gov.au. [Learn why this is important](#)

Good afternoon Alana,

My apologies for the delay in providing a response, unfortunately the officer who was previously investigating your enquiry has been seconded to another position.

Upon investigation it has been determined that the feature traversing Lots 1 and 2 on SP193446 is considered drainage for the purposes of the Water Act 2000. As a result water services have no further requirements in relation to excavation, fill or vegetation.

Depending on the location and extent of vegetation clearing required, I would suggest contacting the Vegetation Hub (Ph: 13 58 34 or email vegetation@resources.qld.gov.au) to ensure they have no further requirements.



Regards,



Carly Nielsen
Water Officer
Water Services | South Region
Department of Regional Development, Manufacturing and Water

P: 1800 994 188
E: Waterservicessouth@rdmw.qld.gov.au
A: 275 George Street, Brisbane Qld 4000 | GPO Box 2771, Brisbane QLD 4001
W: www.rdmw.qld.gov.au

From: Alana Homewood
Sent: Friday, 27 August 2021 6:52 PM
To: Water Services South <WaterServicesSouth@dnrme.qld.gov.au>
Cc: Lisa Carter <lcarter@niche-eh.com>; Barry Patrick <bpatrick@niche-eh.com>; Rebecca Rowlingson <rrowlingson@niche-eh.com>
Subject: Information request - unmapped watercourse on Lot 2 on SP193446 and Lot 1 on SP193446

Good afternoon,

Could you please advise whether an unmapped watercourse on Lot 2 on SP193446 and Lot 1 on SP193446 is a watercourse or drainage feature under the *Water Act 2000*? The land parcels are located within the Moreton Water Plan and Bremer River subcatchment areas. Information and field photos of the unmapped watercourse and adjoining reservoirs is provided below (Queensland Globe) and attached to this email.



Could you also please advise if there are requirements or approvals for works (eg. excavate, place fill or destroy vegetation) within the mapped reservoirs on Lot 2 on SP193446 and Lot 1 on SP193446 (as per above screenshot)?

Activities relating to reservoirs are not mentioned in my own review of the *Water Act 2000*, *Water Management Regulation 2016* and *Water Plan (Moreton) 2007*.

Please contact myself or my colleague Lisa Carter (lcarter@niche-eh.com; 0407 410 654) if you require further information.

Thank you,

Alana Homewood BSc, MEnvMgmt, MEIANZ
Ecology Consultant
0488 774 921
QLD Head Office – Brisbane
PO Box 540 Sandgate QLD 4017



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Annex 4 – Queensland Government Offsets Calculator



Queensland Government home > For Queenslanders > Environment, land and water > Environment and pollution management > Environmental management > Environmental offsets > **Impact site assessment tool**

Impact site assessment tool

Impact area details

Section 1

LGA

Ipswich City Council

Bioregion

Southeast Queensland

Subregion

Moreton Basin

Impact area

0.08 ha

Impact area details

Matter groups:

- 0.08 ha of SEQ Koala Habitat
- 0.05 ha of Regional ecosystem—12.9-10.7 (Eucalyptus crebra E. tereticornis, Corymbia tessellaris, Angophora spp., E. melanophloia woodland on sedimentary rocks)
- 0.05 ha of Threatened animals—Delma torquata (collared delma)

Ipswich City Council koala habitat

The notional offset area for this LGA is 0.24 ha.

Sections, areas and matter groups used in calculations

Section	Bioregion / Marine (and waterways) zone	Subregion / Marine bioregion	Local government area (LGA)	Section significant residual impact area (ha)	Section notional offset area (ha)	Matter group	Matter's significant residual impact area (ha)	Matter's notional offset area (ha)
1	Southeast Queensland	Moreton Basin	Ipswich City Council	0.08	0.56	1.1 SEQ Koala Habitat	0.08	0.24
1	Southeast Queensland	Moreton Basin	Ipswich City Council	0.08	0.56	1.2 Regional ecosystem— 12.9-10.7 (Eucalyptus crebra E. tereticornis, Corymbia tessellaris, Angophora spp., E. melanophloia woodland on sedimentary rocks)	0.05	0.2

Section	Bioregion / Marine (and waterways) zone	Subregion / Marine bioregion	Local government area (LGA)	Section significant residual impact area (ha)	Section notional offset area (ha)	Matter group	Matter's significant residual impact area (ha)	Matter's notional offset area (ha)
1	Southeast Queensland	Moreton Basin	Ipswich City Council	0.08	0.56	1.3 Threatened animals— Delma torquata (collared delma)	0.05	0.2

Email these results

Email address

Contact

For any questions relating to the financial settlement offset calculator, please email the Offsets Team offsets@des.qld.gov.au (<mailto:offsets@des.qld.gov.au>).

For any questions relating to payment of a financial settlement offset, please email the Offset Fund Management and Delivery unit financialoffsets@des.qld.gov.au (<mailto:financialoffsets@des.qld.gov.au>).

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Last updated 24 August 2020

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Queensland Government (<https://www.qld.gov.au/>)

Contact Us

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02 9630 5658
info@niche-eh.com

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PO Box 2443 North Parramatta
NSW 1750 Australia

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PO Box 540 Sandgate
QLD 4017 Australia

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Port Macquarie
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Coffs Harbour
Central Coast
Gold Coast
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Our services

Ecology and biodiversity

Terrestrial
Freshwater
Marine and coastal
Research and monitoring
Wildlife Schools and training

Heritage management

Aboriginal heritage
Historical heritage
Conservation management
Community consultation
Archaeological, built and landscape values

Environmental management and approvals

Impact assessments
Development and activity approvals
Rehabilitation
Stakeholder consultation and facilitation
Project management

Biodiversity offsetting

Offset strategy and assessment (NSW, QLD, Commonwealth)
Accredited BAM assessors (NSW)
Biodiversity Stewardship Site Agreements (NSW)
Offset site establishment and management
Offset brokerage
Advanced Offset establishment (QLD)

Greater Brisbane Greyhound Centre

APPENDIX

F

FLORA SURVEY SPECIES LIST

 **Cardno**

now

 **Stantec**

Family	Scientific name	Common name	NC Act Status	EPBC Act Status	Introduced?
Agavaceae	<i>Agave americana</i>	century plant	-	-	Y
Apocynaceae	<i>Gomphocarpus physocarpus</i>	balloon cottonbush	-	-	Y
Apocynaceae	<i>Parsonsia straminea</i>	monkey rope	C	-	
Aristolochiaceae	<i>Aristolochia meridionalis</i> <i>subsp. meridionalis</i>		C	-	
Asparagaceae	<i>Asparagus plumosus</i>	feathered asparagus fern	-	-	Y*
Asteraceae	<i>Ageratum conyzoides</i>	billygoat weed	-	-	Y
Asteraceae	<i>Ageratum houstonianum</i>	blue billygoat weed	-	-	Y
Asteraceae	<i>Ambrosia artemisiifolia</i>	annual ragweed	-	-	Y*
Asteraceae	<i>Baccharis halimifolia</i>	groundsel bush	-	-	Y
Asteraceae	<i>Bidens pilosa</i>	cobblers pegs	-	-	Y
Asteraceae	<i>Chrysocephalum apiculatum</i>	yellow buttons	C	-	
Asteraceae	<i>Cirsium vulgare</i>	spear thistle	-	-	Y
Asteraceae	<i>Emilia sonchifolia</i>	emilia	-	-	Y
Asteraceae	<i>Erigeron bonariensis</i>		-	-	Y
Asteraceae	<i>Erigeron sumatrensis</i>	tall fleabane	-	-	Y
Asteraceae	<i>Senecio madagascariensis</i>	fireweed	-	-	Y*
Asteraceae	<i>Tagetes minuta</i>	stinking roger	-	-	Y
Cactaceae	<i>Opuntia stricta</i>	prickly pear	-	-	Y*
Casuarinaceae	<i>Allocasuarina torulosa</i>		C	-	
Commelinaceae	<i>Commelina diffusa</i>	wandering jew	C	-	
Commelinaceae	<i>Tradescantia zebrina</i>		-	-	Y
Convolvulaceae	<i>Cuscuta campestris</i>	dodder	-	-	Y
Convolvulaceae	<i>Dichondra repens</i>	kidney weed	C	-	
Crassulaceae	<i>Bryophyllum delagoense</i>	mother-of-millions	-	-	Y*
Cyperaceae	<i>Cyperus brevifolius</i>	Mullumbimby couch	-	-	Y
Cyperaceae	<i>Cyperus rotundus</i>	nutgrass	-	-	Y
Euphorbiaceae	<i>Ricinus communis</i>	castor oil bush	-	-	Y
Hemerocallidaceae	<i>Dianella caerulea</i>		C	-	
Iridaceae	<i>Patersonia glabrata</i>		C	-	
Laxmanniaceae	<i>Lomandra filiformis</i>		C	-	
Laxmanniaceae	<i>Lomandra longifolia</i>	spiny-headed mat-rush	C	-	
Leguminosae	<i>Acacia fimbriata</i>	Brisbane golden wattle	C	-	
Leguminosae	<i>Acacia glaucocarpa</i>	hickory wattle	C	-	
Leguminosae	<i>Acacia irrorata</i>		C	-	
Leguminosae	<i>Acacia leiocalyx</i>		C	-	
Leguminosae	<i>Crotalaria lanceolata</i> <i>subsp. lanceolata</i>	lance-leaved rattlepod	-	-	Y
Leguminosae	<i>Glycine tabacina</i>	glycine pea	C	-	
Leguminosae	<i>Leucaena leucocephala</i>		-	-	Y
Leguminosae	<i>Macroptilium atropurpureum</i>	siratro	-	-	Y
Leguminosae	<i>Macroptilium lathyroides</i>		-	-	Y
Leguminosae	<i>Mimosa pudica</i>	sensitive plant	-	-	Y

Family	Scientific name	Common name	NC Act Status	EPBC Act Status	Introduced?
Leguminosae	<i>Pultenaea euchila</i>	orange pultenaea	C	-	
Leguminosae	<i>Stylosanthes guianensis</i>		-	-	Y
Leguminosae	<i>Tipuana tipu</i>	tipuana	-	-	Y
Leguminosae	<i>Vachellia nilotica</i>	prickly acacia	-	-	Y*
Malvaceae	<i>Sida cordifolia</i>		-	-	Y
Menyanthaceae	<i>Nymphoides indica</i>	water snowflake	C	-	
Moraceae	<i>Ficus elastica</i>	rubber-leaf fig	-	-	Y
Myrtaceae	<i>Corymbia citriodora</i>	spotted gum	C	-	
Myrtaceae	<i>Corymbia tessellaris</i>	Moreton Bay ash	C	-	
Myrtaceae	<i>Eucalyptus crebra</i>	narrow-leaved red ironbark	C	-	
Myrtaceae	<i>Eucalyptus moluccana</i>	gum-topped box	C	-	
Myrtaceae	<i>Eucalyptus tereticornis</i>	forest red gum	C	-	
Myrtaceae	<i>Melaleuca irbyana</i>	swamp tea-tree	E	-	
Myrtaceae	<i>Syzygium australe</i>	scrub cherry	C	-	
Nymphaeaceae	<i>Nymphaea mexicana</i>		-	-	Y
Onagraceae	<i>Ludwigia longifolia</i>		-	-	Y
Oxalidaceae	<i>Oxalis debilis</i>	pink woodsorrel	-	-	Y
Phyllanthaceae	<i>Phyllanthus tenellus</i>		-	-	Y
Picrodendraceae	<i>Petalostigma pubescens</i>	quinine tree	C	-	
Poaceae	<i>Andropogon virginicus</i>	whiskey grass	-	-	Y
Poaceae	<i>Aristida vagans</i>		C	-	
Poaceae	<i>Chloris gayana</i>	rhodes grass	-	-	Y
Poaceae	<i>Cortaderia selloana</i>	pampas grass	-	-	Y
Poaceae	<i>Cynodon dactylon</i>	common couch grass	-	-	Y
Poaceae	<i>Echinochloa colona</i>	awnless barnyard grass	-	-	Y
Poaceae	<i>Eragrostis brownii</i>	Brown's lovegrass	C	-	
Poaceae	<i>Eragrostis curvula</i>		-	-	Y
Poaceae	<i>Imperata cylindrica</i>	blady grass	C	-	
Poaceae	<i>Megathyrsus maximus</i>		-	-	Y
Poaceae	<i>Melinis repens</i>	red natal grass	-	-	Y
Poaceae	<i>Ottochloa gracillima</i>	pademelon grass	C	-	
Poaceae	<i>Setaria sphacelata</i>		-	-	Y
Poaceae	<i>Urochloa decumbens</i>		-	-	Y
Polygonaceae	<i>Antigonon leptopus</i>		-	-	Y
Polygonaceae	<i>Persicaria attenuata</i>		C	-	
Portulacaceae	<i>Portulaca pilosa</i>		-	-	Y
Rhamnaceae	<i>Alphitonia excelsa</i>	soap tree	C	-	
Rutaceae	<i>Flindersia australis</i>	crow's ash	C	-	
Santalaceae	<i>Exocarpos cupressiformis</i>	native cherry	C	-	
Typhaceae	<i>Typha orientalis</i>	broad-leaved cumbungi	C	-	
Verbenaceae	<i>Duranta erecta</i>	duranta	-	-	Y
Verbenaceae	<i>Glandularia aristigera</i>		-	-	Y
Verbenaceae	<i>Lantana camara</i>	lantana	-	-	Y*

Family	Scientific name	Common name	NC Act Status	EPBC Act Status	Introduced?
Verbenaceae	<i>Lantana montevidensis</i>	creeping lantana	-	-	Y*
Verbenaceae	<i>Verbena bonariensis</i>	purpletop	-	-	Y

*Listed as restricted invasive pursuant to the *Biosecurity Act 2014*.