



Baseline Survey Report

EPBC 2017/8090

Lyons Offset Site

Prepared for EnviroCapital as the approved offset provider for Pointcorp Heritage Park Pty Ltd

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Abbreviations and Acronyms

AU	Assessment Unit
DAM	Declared Area Map
DAWE	Department of Agriculture, Water and the Environment
DES	Department of Environment and Science (Qld)
DoR	Department of Resources (Qld) (formerly DNRME, Department of Natural Resources, Mines and Energy)
EDQ	Economic Development Queensland (Qld)
EPBC	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
GHFF	Grey-headed Flying-fox (<i>Pteropus poliocephalus</i>)
NCA	<i>Nature Conservation Act 1992</i> (Qld)
NCPR	Nature Conservation (Plants) Regulation 2020
OMU	Operational Management Unit
PDA	Priority Development Area (herein referencing the Greater Flagstone Priority Development Area)
PMAV	Property Map of Assessable Vegetation
RAI	Relative Abundance Index
RE	Regional Ecosystem
RGB	Regularised grid-based
SEQ	South-east Queensland
SHG	Sunders Havill Group
VMA	<i>Vegetation Management Act 1992</i> (Qld)
WONS	Weeds of National Significance

1. Introduction

The *Environmental Management Division* of Saunders Havill Group (SHG) was engaged by EnviroCapital as the approved offset provider for Pointcorp Heritage Park Pty Ltd (the Proponent) to prepare a Baseline Survey Report for the Lyons offset site associated with the impact for the approved 'Park Ridge Residential Development' located at Clarke Road, Park Ridge (EPBC Act reference 2017/8090). The approval pertains to the construction of a residential development comprising of industrial, mixed use and residential development covering 116.35 hectare (ha) incorporating a 12.96 ha area for environmental management and conservation.

The Park Ridge Residential Development was referred under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and subsequently declared a "Controlled Action" requiring assessment by "Preliminary Documentation" pursuant to section 18 and 18A (listed threatened species and communities) (EPBC 2017/8090) on the 19th March 2017. The trigger for the controlling provision was due to potential impacts on the Koala (*Phascolarctos cinereus*) and the Grey-headed Flying-fox (GHFF) (*Pteropus poliocephalus*), which are both listed as 'vulnerable' under the EPBC Act.

As part of the Preliminary Documentation requirements, a proposal was developed to compensate for the impacts from clearing of up to 89.93 ha and functional loss of 28.01 ha of Koala habitat and GHFF foraging habitat. This offset was approved by a delegate of the Minister as part of the EPBC Act Approval for 2017/8090. The offset includes the dedication and rehabilitation of a total of 401.7 ha of land across two (2) offset sites referred to as the Burnett Creek Offset Site and Lyons Offset site. This report documents the baseline survey results for the Lyons Offset Site. The baseline survey results for the Burnett Creek Offset Site will be contained within a separate report. Additionally, the proposed management and rehabilitation actions required across both offset sites to achieve the offset are provided within a subsequent Offset Management Plan.

The project was approved under the EPBC Act subject to conditions on 23 November 2020 with effect until 30 June 2045. Condition 6 of the approval requires that the approval holder must complete and provide the Department with the results and dates of the following surveys:

- a. The vegetation condition attributes for each Regional Ecosystem (RE), specifying the baseline habitat quality assessment data for each operation management unit (OMU);
- b. The number and condition of winter or spring flowering GHFF foraging species across the offset site;
- c. The species stocking rate for the Koala and GHFF;
- d. The extent of weed cover;
- e. The number of non-native predators in each season, including in areas adjacent to the offset site;
- f. The number of Koala mortalities attributable to non-native predators; and
- g. The baseline conditions in respect of each of the outcomes specified in conditions 9-11.

The surveys must be conducted by a suitably qualified person, consistent with the Department's approved survey guidelines and designed to provide results that are representative of the entire offset site.

This report has been prepared to satisfy the requirements of the conditions of approval accompanying the controlled action determination.

1.1. Offset site summary

Two (2) offset sites were secured to deliver the offset required under the EPBC Act approval:

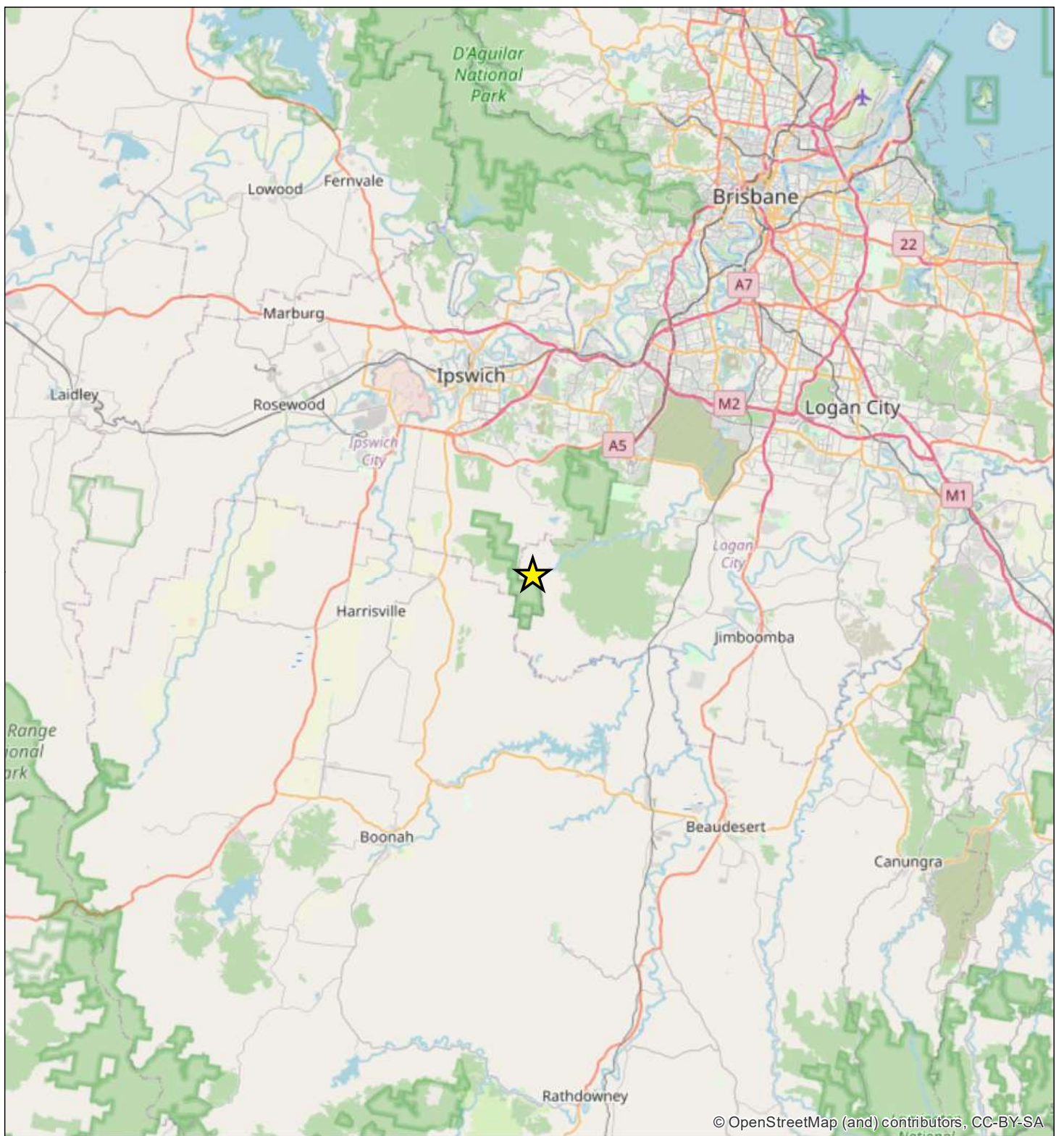
- Burnett Creek; and
- Lyons.

In accordance with Condition 5(a) of the EPBC Act approval conditions the approval holder must legally secure at least 151.3 ha of land at the Burnett Creek Offset Site and at least 250.4 ha of land at the Lyons Offset Site. During the Voluntary Declaration process to legally secure the offset sites under the Queensland *Vegetation Management Act 1999*, only 150.497 ha of suitable land was available at the Burnett Creek Offset Site. This shortfall was remedied through increasing the land secured across the Lyons Offset Site. This matter is discussed further in the subsequent Offset Management Plan.

The Lyons offset site is located in the Logan City Council local government area (LGA), approximately 20 kilometres (km) south of the City of Ipswich. The Offset Site is zoned Environmental Management and Conservation and accessed via Mount Flinders Road. Key details relating to the Lyons offset site are provided in **Table 1**.

Table 1: Lyons offset site summary

Address	Mount Flinders Road, Lyons 4124
Lot / Plan	Part Lot 7 S312785
Property Area	261.54 ha
Offset Area	250.843 ha
Tenure	Freehold
Local government area	Logan City Council
Date legally secured	15 March 2021 (248.68 ha) & 29 July 2021 (2.163 ha)



Legend

★ Offset Site Location

Figure 1
Site Context

File ref. 9694 E Figure 1 Site Context Lyons A
Date 3/08/2021
Project Lot 7 on S312785



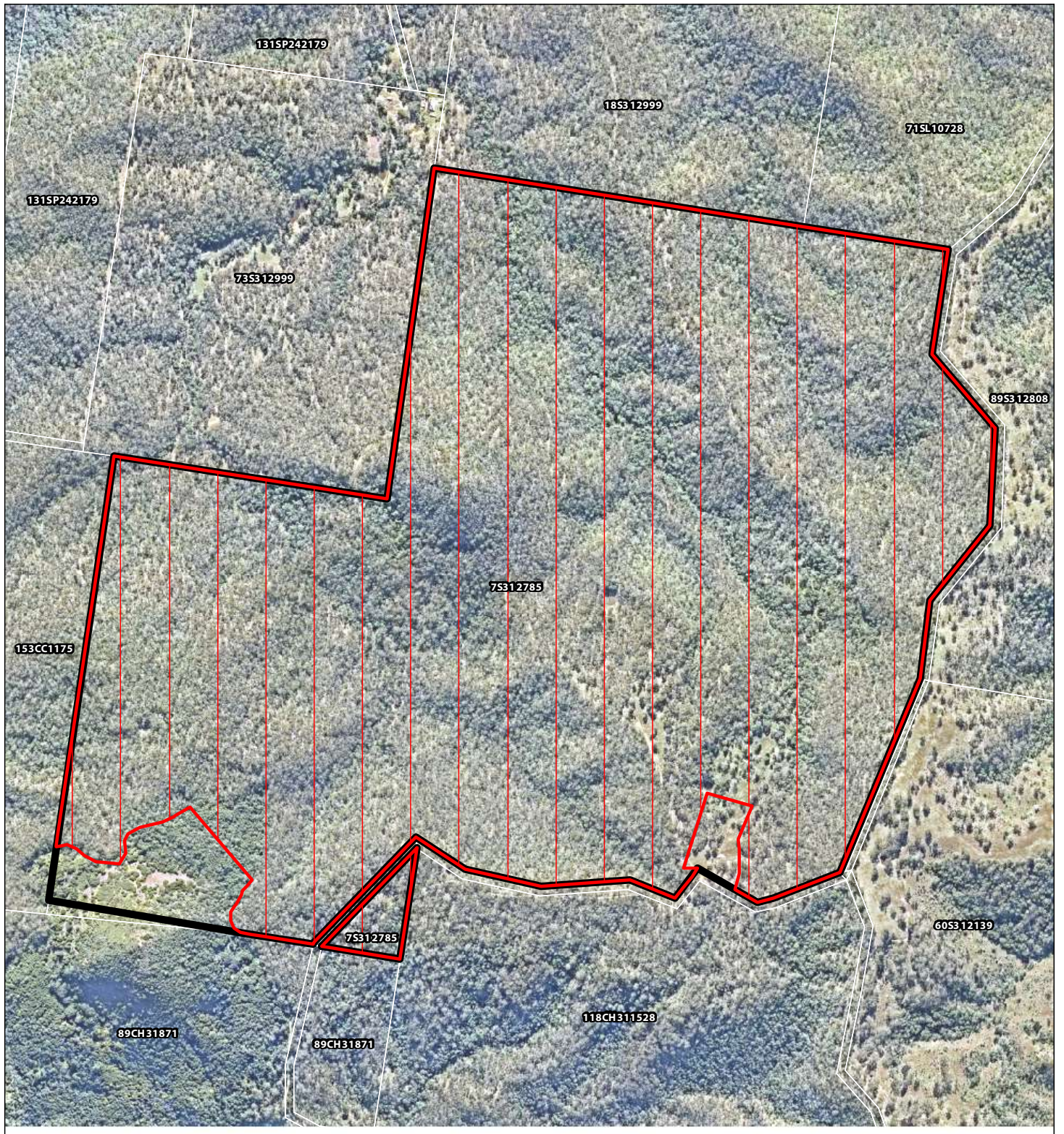
Scale (A4): 1:500,000 [GDA 2020 MGA Z56]



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Legend




-  Site DCDB
-  Qld DCDB
-  Offset Area (250.84 ha)

Figure 2

Site Aerial

File ref. 9694 E Figure 2 Site Aerial Lyons A
Date 5/08/2021
Project Lot 7 on S312785



Scale (A4): 1:12,500 [GDA 2020 MGA Z56]



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2. Baseline survey methodology

These surveys have been conducted by the Saunders Havill Group, and suitably qualified personnel consistent with the Department's approved survey guidelines, and designed to provide results that are representative of the entire Lyons offset site.

Condition 6 states that within 6 months of the date of the approval, the approval holder must complete baseline surveys of the Lyons Offset Site including the following surveys:

- a. vegetation condition attributes for each Regional Ecosystem (RE), specifying the baseline habitat quality assessment data for each operation management unit (OMU);
- b. number and condition of winter or spring flowering GHFF foraging species across the offset site;
- c. species stocking rate for the Koala and GHFF;
- d. extent of weed cover;
- e. number of non-native predators in each season, including in areas adjacent to the offset site;
- f. number of Koala mortalities attributable to non-native predators; and
- g. baseline conditions in respect of each of the outcomes specified in conditions 9-11.

The methodology of each survey detailed within the following sections incorporates the required baseline surveys outlined above. A summary of the surveys conducted is provided within **Table 2**.

Table 2: Survey Methodology Summary

Condition	Methodology	Survey Date
6 (a)	Modified Habitat Quality Assessment (MHQA)	27 May 2019 & 20 February 2020
6 (b)	MHQA-Stem Density	27 May 2019 & 20 February 2020
6 (c)	Koala - Regularised grid-based Spot Assessment Technique (RGB-SAT)	19, 20, 22 & 23 April 2021 and 14 May 2021
	GHFF – MHQA-Stem Density	27 May 2019 & 20 February 2020
6 (d)	Random diurnal meander recording extent, MHQA and targeted non-native plant transect assessments	3 June 2019 & 28 February 2020
		19, 20, 22 & 23 April 2021 and 14 May 2021
6 (e) & (f)	Motion Sensor Camera survey	19 April to 13 May 2021

Condition	Methodology	Survey Date
6 (g)	MHQA	3 June 2019 & 28 February 2020

Table 3: Surveyor Details

Name	Position	Qualifications	Survey Date
Andrew Ridley	Senior Environmental Scientist	Bachelor of Science	22 & 23 April 2021 and 14 May 2021
David Havill	Senior Ecologist	Bachelor of Applied Science (Natural Systems and Wildlife Management) Diploma of Arboriculture	13 June 2019, 28 February 2020 and 19 & 20 April 2021
Liam Brzezinski	Ecologist	Bachelor of Environmental Management (Natural Systems and Wildlife)	19, 20, 22 & 23 April 2021 and 14 May 2021

As demonstrated within **Table 3**, all surveys were conducted by a suitably qualified person with professional qualifications and experience related to the nominated subject matter, ensuring an independent assessment and analysis in accordance with relevant standards and methodologies.

2.1. Offset Site Assessment Units

The Lyons offset site was separated into assessment units (AU) for the baseline surveys. Vegetation was categorised according to status, remnant and non-remnant. Within each of these categories each Regional Ecosystem (RE) (remnant or pre-clear) is a separate AU. The Lyons offset site was separated into AUs to ensure each habitat type was assessed to provide results that are representative of the entire offset site.

The Lyons offset site consists of six (6) AUs, one (1) within each different RE and status category (refer **Table 4**).

Table 4: Assessment Units – Lyons

Assessment Unit	Vegetation Status	Regional Ecosystem	Area (ha)
AU1	Remnant	12.8.20	7.69
AU2	Remnant	12.9-10.17	21.93
AU3	Remnant	12.9-10.3	9.59
AU4	Remnant	12.9-10.7	20.39
AU5	Remnant	12.9-10.2	181.09

Assessment Unit	Vegetation Status	Regional Ecosystem	Area (ha)
AU6	Regrowth	12.9-10.2	10.15

Further, a 350 m grid was applied over the offset site to stratify sampling, reducing bias and increasing repeatability of SAT and camera trap surveys. Grid cells were separated by 350 m for monitoring across the Lyons offset site after a literature review of home ranges for targeted species, being Koala (SAT), cat, dog and foxes (non-native koala predators). Home ranges for Koalas vary depending on gender and, availability and quality of habitat. Thus, home ranges increase in size with limited habitat and food resources. Home ranges have been estimated between 10 - 135 ha depending on these factors.

In South East Queensland (SEQ), the average distance between natal and breeding home ranges was similar for males and females, at approximately 3.5 km (Dique *et al.* 2003b). Maximum dispersal distances were up to about 10 km for males and females (Dique *et al.* 2003b). Other studies have reported moves of just over and 16 km in rural south-east Queensland (White 1999).

Feral cat and dog home ranges are usually much larger as they are highly mobile. McGregor *et al.* 2015 found that home ranges for feral cats ranged from 397 ha for females to 855 ha for males. The *NSW Wild Dog Management Strategy 2017-2021* (NSW DPI 2017) cat home ranges vary from 160-2060 ha or larger. As such, a 700 m grid cell separation is recommended for feral dog monitoring.

The application of 35 0m grid cells for SAT and Camera trap locations were determined appropriate for the Lyons property based on the home ranges of target animals and property size.

2.2. Diurnal Searches

Diurnal searches for direct observations of fauna or signs of fauna activity and potentially suitable habitat resources are an important component of fauna surveys. Searches were conducted for direct observations of fauna or signs of fauna activity and potential habitat resources were conducted simultaneously with all other surveys conducted throughout the surveying period and across the Lyons offset site (detailed in following sections). As such, these surveys were conducted between the 19 April 2021 and 14 May 2021.

As discussed within **Section 2.1**, the offset site was separated into quadrants in representative habitats to ensure that each offset site was systematically searched. The results of these surveys are therefore considered an accurate representation of the entire offset site. The use of quadrants and assessment units ensures the effort can be repeated over time for comparisons. Importantly, these searches targeted direct observations of koalas, koala scat, koala food trees, GHFF roost sites and GHFF foraging species. Where identified significant habitat resources or signs of fauna activity were located using a GPS.

As noted within the *Survey Guidelines for Australia's threatened mammals* (Department of Sustainability, Environment, Water, Pollution and Communities, 2011), the time taken to effectively search a subject site

varies considerably according to the size and nature of the area. For large sites and remote areas, such as the Lyons offset site, constraints required the identification of potential habitat resources through ground-truthing after reviewing vegetation maps, aerial photographs and imagery. The size and topography of both offset sites contributed to time constraints limiting the search area. This limitation was reduced with the use of AUs and the RGB approach, ensuring results are representative of the entire area.

2.3. Modified Habitat Quality Assessment

This survey method addresses Condition 6(a)-(d) and (g) compiling details including;

- The vegetation condition attributes for each RE;
- number and condition of winter or spring flowering GHFF foraging species across the offset site;
- species stocking rate for the Koala and GHFF;
- extent of weed cover; and
- baseline conditions in respect of each of the outcomes specified in conditions 9-11.

These values were incorporated into a larger habitat assessment using a modified version of the Queensland State Governments *"Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy"* Version 1.2 April 2017. The purpose of this guideline is to provide a methodology for proponents to determine the habitat quality of a site under the Queensland Environmental Offsets framework. The guideline is a step-by-step methodology explaining how to measure habitat quality for land-based offsets. This methodology has been adopted and tailored/modified to assess the impacts and offsets relating to MNES.

The MHQA combines the three (3) core indicators into two (2) (site condition and site context) with each being equally weighted at 30 % of the final score. The balance of the weighting (40 %) has been attributed to the third indicator which is independent of the traditional habitat quality assessment, being species stocking rate. The species stocking rate has been added to the MHQA to better incorporate MNES, and for the purpose of this preliminary documentation, the vulnerable-listed Koala and GHFF MNES. The following section details the methodology utilised to assess the site condition, site context and species stocking rate under the MHQA.

Site Condition (30 %)

Assessing site condition is an integral step in determining specific quantification of impacts, while also determining whether an offset site is suitable to establish a desired capacity to support the prescribed environmental matters being offset. The on-site condition is a key element of habitat quality and has a direct influence on the biodiversity it supports. Site condition is assessed using a suite of attributes to describe the structure and function of the vegetation community, and is benchmarked against the expected range for a relatively undisturbed community.

The site condition assessment under the MHQA is assessed using 15 condition characteristics being:

- recruitment of woody perennial species in Ecologically Dominant Layer (EDL);
- native plant species richness – trees;

- native plant species richness – shrubs;
- native plant species richness – grasses;
- native plant species richness – forbs;
- tree canopy height;
- Sub-canopy cover;
- tree canopy cover;
- native grass cover;
- organic litter;
- large trees;
- coarse woody debris;
- non-native plant cover;
- quality and availability of food and foraging habitat; and
- quality and availability of shelters.

Assessment methodology of the above condition characteristics do not differ from the traditional habitat quality assessment. In developing the MHQA to better incorporate MNES, two (2) species habitat index characteristics, being, quality and availability of food and foraging habitat and quality and availability of shelters have been added to the site condition indicator.

Site Context (30 %)

The site context assessment deals with the site and its adjacent surroundings. Site context is measured using a suite of attributes to describe the location of the habitat within the surrounding landscape and the influence of its associated threats. This assessment also considers the influence of adjacent vegetated areas and ecological corridors. Under the MHQA, site context is measured using the following seven (7) characteristics:

- size of patch;
- connectedness;
- context;
- ecological corridors;
- role of site location to species overall population in the state;
- threats to the species; and
- species mobility capacity.

Unlike the traditional habitat quality assessment methodology where site connectedness is assessed against the surrounding remnant vegetation only, the MHQA site connectedness is assessed against the surrounding MNES habitat, in this instance, Koala habitat. Whilst remnant eucalypt forest vegetation is critical habitat for

Koala, equally Koalas can utilise areas of non-remnant vegetation or high value regrowth vegetation that does not yet achieve remnant status. Therefore, site context under the MHQA accounts for surrounding Koala habitat rather than remnant vegetation.

In developing the MHQA, three (3) species habitat index characteristics were nominated-role of site location to overall species population in the state, threats to the species and species mobility capacity.

Species Stocking Rate (40 %)

The MHQA incorporates species stocking rate as an attribute not discussed under the traditional terrestrial habitat assessment methodology. Species stocking rates are estimates of the Koala carrying capacity of the site at the time of undertaking the survey.

Baseline Koala activity levels were determined by utilising the SAT (*Phillips et al. 2011*). The SAT survey results indicated a ‘low’ Koala activity across both the impact and offset sites (refer **Section 2.3.1** for details). Utilising these Koala activity levels, and inferring the results with current available published scientific literature, an estimated Koala carrying capacity (stocking rate) was determined.

Table 5: Koala MQHA Stocking Rate Scoring

Species Stocking Rate (40%)			
SAT survey results	Low (<22.52% (East Coast Med-High))	Medium (>22.52% but <32.84% (East Coast Med-High))	High (>32.84% (East Coast Med-High))
	20	30	40

A 100 m X 20 m plot was used to gather the data required for the MHQA. The offset sites were surveyed using Fourteen (14) plots located at Lyons. Five (5) 1 m x 1 m quadrats, located 10 m apart and on alternate sides along the transect we performed within each plot. Each of the ground cover component was assessed so that the cover totals 100%. Although not all components are used in the scoring, assessment of all attributes improves the ability to estimate cover of the assessable attributes.



Photo Set 1: The 100m x 20m plot within offset site, centre line shown by measuring tape.



Photo Set 2: Example of 1m x1m quadrants.

2.3.1 Species Stocking Rate - Koala

Koalas are difficult to detect and occur at low densities in many parts of their range. The most appropriate survey method and design depends on the type of data that is desired (i.e. presence/absence, abundance, habitat preference, density, tree species preference) and the size/complexity of the site. Gathering more complex data (i.e. density) or surveying larger, more complex sites will generally require more time and resources. The benefits of more thorough surveys are a higher level of confidence in the assessment and more information on which to plan and make decisions (DoE, 2014).

The direct and indirect sampling techniques can be categorised into three different approaches;

- total counts;
- partial counts; and
- indices.

Total counts are direct visual observations where each individual is counted within a survey area. This technique is popular with large easy to detect and identifiable animals. It determines the total number of

individuals within the sampling site. This method is not always viable over large areas or where animals are hard to detect.

Partial counts using line transect with distance sampling or strip transects where individuals are counted within a predetermined distance of the transect. Distance sampling with line transects can be used to determine relative density/abundance of a population based on the recorded distance from the line to the animal and the angle at which the animal is from the observer.

Indices using animal signs such as scats, tracks or scratches are used to indicate presence/absence and activity within habitats. Animal signs can be sampled along line transects, strip transects or selection of specific habitat element. Munks *et al.* 1996 found that due to koala behaviour they require more effort to survey using visual observations. Sullivan *et al.* 2002 advocates for the use of faecal pellet counts for sampling as this method requires less effort. Indices have been included within the baseline koala surveys and discussed further in **Section 3.2.**

For actions with a large footprint, or landscape-scale impacts, baseline monitoring which evaluates koala abundance, movement and habitat preferences in the area proposed to be affected by the project are considered necessary. This may involve a combination of direct and indirect survey methods in the study area, particularly if there is limited desktop data available. These surveys will be important for the implementation of mitigation measures and offsets (DoE, 2014).

To satisfy the approval conditions, a baseline koala density survey is required to measure progress towards achieving the performance criteria as prescribed within the approval conditions (ref. EPBC 2017/8090). The offset site was both surveyed using direct methods, including;

- Diurnal Searches; and
- Opportunistic observations during other works (i.e. habitat transects, motion sensor camera traps, SAT, etc.).

Given Koalas are largely nocturnal and travel during the night, it is difficult to survey an animal as elusive and cryptic as the Koala, which has contributed to the lack of a standardised survey method (Phillips and Callaghan 2011). Visual observations through spotlighting is considered to be one of the most effective methods for detecting Koalas as the animal is more active and eyes reflect light. However, given the remoteness and size of the offset site direct observations through transects covering the entirety of the site are not feasible. Fauna signs such as tree scratches and faecal pellets identified during diurnal searches can be used as indicators of presence within a habitat and provide an estimate for abundance or density.

Regularised Grid-Based Spot Assessment Technique

As discussed above, indirect methods can be used to determine presence/absence of fauna. Indices using animal signs including scats, tracks and scratches can indicate species presence and habitat use. Koala activity levels and density were determined by utilising SAT. Surveys are undertaken in accordance with the methodology developed by Phillips and Callaghan (2011) and specified in the *EPBC Act Referral Guidelines for the Vulnerable Koala*. The SAT method is an assessment of Koala activity involving a search for any Koalas and signs of Koala usage and is therefore uses indices to determine presence/absence.

The SAT involves identifying a non-juvenile tree of any species within the site that is either observed to have a Koala or scats, or is known to be a food tree or otherwise important for Koalas, and recording any evidence of Koala usage of that tree including presence, identifiable scratches or scats. The nearest non-juvenile tree is then identified and the same data recorded. The next closest non-juvenile tree to the first tree is then assessed and so on until 30 trees have been surveyed.

The number of trees showing evidence of Koala activity is expressed as a percentage of the total number of trees sampled to indicate the frequency of Koala usage. Assessment of each tree involves a systematic search for Koala scats beneath the tree within one metre radius of the trunk. After approximately two person minutes of searching for scats, the base of the trunk is observed for scratches and the crown for Koala (Phillips and Callaghan 2011).

This approach results in an activity level; low, medium or high for the study area. Activity levels derived from SAT sites should only be interpreted in the context of location specific habitat use. Low activity levels can be associated with low density populations, density is usually affected by primary food tree availability (Phillip and Callaghan 2011; Phillips and Callaghan 2000; Phillips *et al.* 2000).

The RGB-SAT sampling is typically applied at a rate of 1:10-20ha at a landscape using intervals from 200-500 m (Phillips and Hopkins 2007, Hopkins *et al.* 2007, Biolink 2017; Biolink 2019). Utilising the RGB-SAT method reduces sampling biases and ensures the results provide a representative of the entire offset site. The grid size was tailored to the offset sites size and estimated density and therefore detectability of pellets. To ensure detection of results and accurate representation of the offset site a 350 m grid was applied over the entire site.

The Koala SAT survey methodology is considered an accurate technique when estimating low-density Koala populations (Mossaz 2010). Research by Rhodes *et al.* (2015) indicates that within the Ipswich region the Koala density is approximately 0.03 Koalas/ha. Rhodes *et al.* (2015) attribute the low population density to a negative relationship identified between temperature and Koala densities. Therefore, when estimating a Koala density in an area that is known to be 'low', the SAT survey methodology is considered to provide an accurate determination on the activity levels (Mossaz 2010).

Although the SAT survey methodology is considered an accurate technique when estimating low-density koala populations there is a number of limitations. The abundance and density of Koalas cannot be determined through this method. However, fixed amount of sampling gives fixed proportion of population and the value of index usually increases with population density.

Stable populations have higher rate of faecal pellet deposition (Lunney *et al.* 1998), leading to bias occupational rate where multiple SAT sites can be occupied by only the one animal (Phillips and Hopkins 2008). Home ranges can be large depending on sex of the animal and availability of preferred food trees (Phillip and Callaghan 2011).

The selection of SAT sites is also very important as they may be in places where there is either really high or low activity rates which can skew results. As such, the RGB-SAT approach was used to reduce bias and ensure the results were representative of the offset sites. The size of the grids were tailored to each site for greater

detection of results. However, Cristescu *et al.* 2012, found that detectability varied up to 16% between plots of different ground cover.

There are a number of benefits to this survey method, most importantly, it is a relatively fast and repeatable process which can be applied to large areas such as the offset areas. It is a passive method of sampling and does not require disturbance of the target species and is easy to repeat. This method establishes if the area is occupied by Koalas, their possible distribution within the area and identifies habitat quality through the tree preference and distribution data. As the SAT method is easy to repeat with reproducible results conducting a study over time will be able to determine possible changes in distribution over time and the reason for this change.

2.4. Grey-headed Flying-fox Foraging Habitat Assessment

The impact and the offset sites have been assessed using a GHFF Foraging Habitat Assessment (FHA) tool developed by the Saunders Havill Group which adopts characteristics of the Queensland State Governments “*Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy*” Version 1.2 April 2017, while also integrating published scientific literature on GHFF foraging habitat.

The traditional terrestrial habitat quality assessment assesses three (3) core indicators—site condition, site context and species habitat index.

The GHFF FHA tool combines the aspects of the three (3) core indicators and published scientific literature into two (2) (site condition and site context) with site condition being weighted with 40% and site context weighted at 30% of the final score. The balance of the weighting (30%) has been attributed to the third indicator which is independent of the traditional habitat quality assessment, being species stocking rate. The species stocking rate assessment incorporated in the GHFF FHA tool is focused on ‘foraging habitat’ for GHFF rather than GHFF stocking rates (presence/absence of the species). This assessment of ‘foraging habitat’ for species stocking rate has been incorporated in the GHFF FHA tool as GHFF roosting camp or species presence was not observed on-site, however, suitable foraging habitat for the species was evident. Therefore, the density of foraging habitat available on-site is considered an appropriate assessment benchmark for species stocking rate.

The following section details the methodology utilised to assess the site condition, site context and species stocking rate under the GHFF FHA.

Site Condition (40%)

Assessing site condition is an integral step in determining specific quantification of impacts, while also determining whether an offset site is suitable to establish a desired capacity to support the prescribed environmental matters being offset. The on-site condition is a key element of habitat quality and has a direct influence on the biodiversity it supports. Site condition is assessed using a suite of attributes to describe the structure and function of the vegetation community, and is benchmarked against the expected range for a relatively undisturbed community.

The site condition assessment under the GHFF FHA is assessed using six (6) condition characteristics being:

- Vegetation condition;
- Species richness (canopy trees);
- Flower scores (average);
- Timing of biological shortages;
- Quality of foraging habitat (trees >0.65 wt p*r); and
- Non-native plant cover.

Assessment methodology of the above condition characteristics is outlined below:

- Vegetation condition – This condition characteristic is assessed using the Queensland *Vegetation Management Act 1999* vegetation community status definition, being Category B (remnant), Category C (high-value regrowth) and Category X (non-remnant). This characteristic is scored from a desktop mapping perspective and verified on-ground during assessment. Refer to **Table 6** for the benchmark scoring values for this condition characteristic.
- Species richness (canopy trees) – This condition characteristic is assessed using a 100 m X 20 m plot following the contour of the land when possible. Within the plot, all canopy tree and subcanopy tree specimens are recorded. It should be noted that non-GHFF foraging species are also documented. Refer to **Table 6** for the benchmark scoring values for this condition characteristic.
- Flower scores (average) – This condition characteristic is assessed by analysing and cross-referencing the species recorded in the ‘species richness (canopy trees)’ characteristic with the published literature, specifically the information within *Ranking the feeding habitat of Grey-headed flying foxes for conservation management* (Eby and Law 2008) and the *Draft Recovery Plan for the Grey-headed Flying-fox* (DoEE 2017) and determining the flower score of the recorded canopy species. The individual score for each flowering GHFF foraging tree is then divided by the number of species recorded (GHFF foraging and non-GHFF foraging trees) to produce an average. The benchmark values for this condition characteristic have been derived from the findings published by Eby and Law (2008) (*Ranking the feeding habitat of Grey-headed flying foxes for conservation management*). Refer to **Table 6** for the benchmark scoring values for this condition characteristic.
- Timing of biological shortages – This condition characteristic is assessed by analysing and cross-referencing the species recorded in the ‘species richness (canopy trees)’ characteristic with the published literature, specifically the information within *Ranking the feeding habitat of Grey-headed flying foxes for conservation management* (Eby and Law 2008) and the *Draft Recovery Plan for the Grey-headed Flying-fox* (DoEE 2017) and determining the ability of the canopy species in the vegetation community to produce foraging habitat during biological shortages (food shortages, pregnancy and birthing, lactation, mating and conception, migration paths and fruit industries). It should be noted that this condition characteristic is weighted and ‘food shortages’ has been weighted heavier than the balance of the characteristics which are equal, as ‘food shortages’ is recognised as a major issue. Refer to **Table 6** for the benchmark scoring values for this condition characteristic.

- Quality of foraging habitat – This condition characteristic is assessed by analysing and cross-referencing the species recorded in the ‘species richness (canopy trees)’ characteristic with the published literature, specifically the information within *Ranking the feeding habitat of Grey-headed flying foxes for conservation management* (Eby and Law 2008) and the *Draft Recovery Plan for the Grey-headed Flying-fox* (DoEE 2017) and determining which canopy species recorded contain a flower score greater than 0.65 wt p*r and is recognised as a significant food plant by Eby and Law (2008). It should be noted that species recorded that are not prescribed a value by Eby and Law (2008) but are recognised as GHFF foraging trees, have been given an average weighted value of related species or, in the case of *Eucalyptus crebra* (Narrow-leaved Ironbark) been prescribed a value of 0.65 and classified as a significant food plant given its importance as a winter flowering species as acknowledged in the *Draft Recovery Plan for the Grey-headed Flying-fox* (DoEE 2017). Refer to **Table 6** for the benchmark scoring values for this condition characteristic.
- Non-native plant cover – This condition characteristic is assessed using a 100 m X 20 m plot following the contour of the land when possible. All non-native plant cover was assessed by estimating the cover of exotic species over the 100 m X 20 m plot. Refer to **Table 6** for the benchmark scoring values for this condition characteristic.

It should be noted that for on-ground assessment purposes, the 100 m X 20 m plot utilised for the GHFF FHA overlaps with the on-ground condition characteristics of the Koala MHQA.

Site Context (30 %)

The site context assessment deals with the site and its adjacent surroundings. Site context is measured using a suite of attributes to describe the location of the habitat within the surrounding landscape and the influence of its associated threats. This assessment also considers the influence of adjacent vegetated areas and ecological corridors. Under the GHFF FHA, site context is measured using the following six (6) characteristics:

- Size of patch;
- Connectedness (active GHFF roost camps in a 20 km radius);
- Context (percentage of GHFF foraging habitat in a 20 km radius);
- Ecological corridors;
- Role of site location to species overall population in the state (active GHFF national flying-fox monitoring viewer ‘level 3’ roost camps in a 20 km radius); and
- Threats to the species.

Assessment methodology of the above context characteristics is outlined below:

- Size of patch – This context characteristic is assessed using a modified version of the traditional habitat quality assessment with the directly connected patch of GHFF foraging habitat to site measured. This context characteristic is measured using GIS. Refer to **Table 7** for the benchmark scoring values for this context characteristic.

- Connectedness – This context characteristic is assessed by analysing the number of active GHFF roost camps (over the past year of monitoring (11/17 – 11/18)) within a 20 km radius of the site. For consistency purposes this assessment is to utilise the data provided on the national flying-fox monitoring viewer (Australian Government). Refer to **Table 7** for the benchmark scoring values for this context characteristic.
- Context – This context characteristic is assessed using a modified version of the traditional habitat quality assessment with the percentage of GHFF foraging habitat within a 20 km buffer of the site measured. This context characteristic is measured using GIS. Refer to **Table 7** for the benchmark scoring values for this context characteristic.
- Ecological corridors – This context characteristic is assessed using the traditional habitat quality assessment methodology which involves determining the proximity of the site to state, bioregional, regional or sub-regional corridors. Refer to **Table 7** for the benchmark scoring values for this context characteristic.
- Threats to species – This context characteristic is assessed by analysing the published scientific literature regarding threats to GHFF and determining the number and severity of the threatening processes observed at or adjacent to the site. Refer to **Table 7** for the benchmark scoring values for this context characteristic.
- Role of site location to species overall population in the state (active GHFF national flying-fox monitoring viewer 'level 3' roost camps in a 20 km radius) – This context characteristic is assessed by analysing the number of active GHFF roost camps level 3 or greater (over the past year of monitoring (11/17 – 11/18)) within a 20 km radius of the site. For consistency purposes this assessment is to utilise the data provided on the national flying-fox monitoring viewer (DoEE, Australian Government, 2019). Refer to **Table 7** for the benchmark scoring values for this context characteristic.

2.4.1 Species Stocking Rate

Species Stocking Rate (40 %)

The GHFF FHA incorporates species stocking rate as an attribute not discussed under the traditional terrestrial habitat assessment methodology.

The species stocking rate was assessed by using the percentage of trees reaching the Large Tree benchmark. Large trees are described as a measure for the provision of reliable foraging resources for wildlife, providing nectar, leaves and seeds (Biocondition manual). Large trees provide greater leaf material and nectar for foraging purposes than trees with low DBH, and so are a reliable indicator of provision of quality habitat for GHFF. Larger trees, on average flower more frequently, more intensely and for a longer period of time than small trees (Wilson and Bennett 1999, Wilson 2002). The presence of Large Trees is considered to be of significant importance in identifying optimal habitat for GHFF.

Large trees are assessed using the Modified Habitat Quality Assessment Transects and are an indicator for the potential for foraging tree density and food availability. The number of Large Trees is recorded and compared

to the benchmark data for the relating Regional Ecosystem. This is converted into a percentage of the benchmark, and a score ascribed as per **Table 8**.

As stated within the *Survey Guidelines for Australian Threatened Bats*, the GHFF occupies most areas in their distribution in highly irregular patterns, and therefore surveys based on animal sightings are unlikely to be reliable. A more effective survey method is to conduct vegetation surveys to identify feeding habitat.

Table 6: GHFF FHA Site Condition (40%) Scoring Benchmarks

Score	Description
<i>Vegetation Condition Scoring</i>	
5	Category X / non-remnant
10	Category C / regrowth
20	Category B / remnant
<i>Species Richness Scoring</i>	
0	0 GHFF foraging species
5	1 – 3 GHFF foraging species
10	4 – 6 GHFF foraging species
20	> 6 GHFF foraging species
<i>Flower Score (average) Scoring</i>	
2	0.01 – 0.25
5	0.26 – 0.50
8	0.51 – 0.75
10	0.76 – 1.00
<i>Timing of Biological Shortages Scoring</i>	
5	Food shortages
3	Pregnancy and birthing
3	Lactation
3	Mating and conception
3	Migration paths
3	Fruit industries
Total (/20)	Combine total of above
<i>Quality of Foraging Habitat (trees >0.65 wt p*r) Scoring</i>	

Score	Description
0	0 significant GHFF foraging tree species
5	1 – 3 significant GHFF foraging tree species
10	4 – 6 significant GHFF foraging tree species
20	> 6 significant GHFF foraging tree species

Non-Native Plant Cover Scoring

1	> 50 % non-native plant cover
5	25 – 50 % non-native plant cover
10	5 – 25 % non-native plant cover
20	< 5 % non-native plant cover

Table 7: GHFF FHA Site Context (30%) Scoring Benchmarks

Score	Description
<i>Size of Patch Scoring</i>	
0	< 5 hectares
2	5 – 25 hectares
5	26 – 100 hectares
7	101 – 200 hectares
10	> 200 hectares
<i>Connectedness Scoring</i>	
0	< 1 active Grey-headed Flying-fox camp within a 20 km radius
3	1 – 3 active Grey-headed Flying-fox camp within a 20 km radius
6	4 – 6 active Grey-headed Flying-fox camp within a 20 km radius
10	> 6 active Grey-headed Flying-fox camp within a 20 km radius
<i>Context Scoring</i>	
0	< 10 % Grey-headed Flying-fox foraging habitat within a 20 km radius

Score	Description
3	10 – 30 % Grey-headed Flying-fox foraging habitat within a 20 km radius
6	31 – 75 % Grey-headed Flying-fox foraging habitat within a 20 km radius
10	> 75 % Grey-headed Flying-fox foraging habitat within a 20 km radius
Ecological Corridors Scoring	
0	Not within an ecological corridor
6	Sharing a common boundary with an ecological corridor
10	Within an ecological corridor
Threats to Species Scoring	
1	High level threat to the species
5	Moderate level threat to the species
10	Low level threat to the species
Role of Site Location to Species Overall Population in the State Scoring	
0	< 1 active level 3 Grey-headed Flying-fox camp within a 20 km radius
5	1 – 3 active level 3 Grey-headed Flying-fox camp within a 20 km radius
10	> 3 active level 3 Grey-headed Flying-fox camp within a 20 km radius

Table 8: GHFF Species Stocking Rate Scoring Benchmarks

Score	Large trees present
1	No large trees present
2	1-25% of the benchmark Regional Ecosystem DBH
4	26-50% of the benchmark Regional Ecosystem DBH
6	51-75% of the benchmark Regional Ecosystem DBH
8	76-100% of the benchmark Regional Ecosystem DBH
10	≥ Benchmark number of large trees of Regional Ecosystem DBH

2.5. Weed Cover Survey

Together with the MHQA methodology outlined above, this survey method was utilised to address Condition 6(d) and determine the extent of weed cover across the offset site.

Where time and resources are limited estimating plant populations should be simplified through sampling of random or fixed points. Sampling rather than attempting to measure everything over the whole site, estimates of the whole rather than a precise and complete record reducing resources and time. Measurements may be taken at random points on each visit or at fixed points that are revisited. While there are statistical reasons for choosing random points, revisiting fixed points provides greater confidence that changes have occurred over time rather than natural variation at the site (Auld, B. 2009). Fixed points were established over the offset site using the AUs and RGB approach to stratify sampling to ensure each area of interest is sampled and result in a representative measure across the entire site (refer to **Figure 1**).

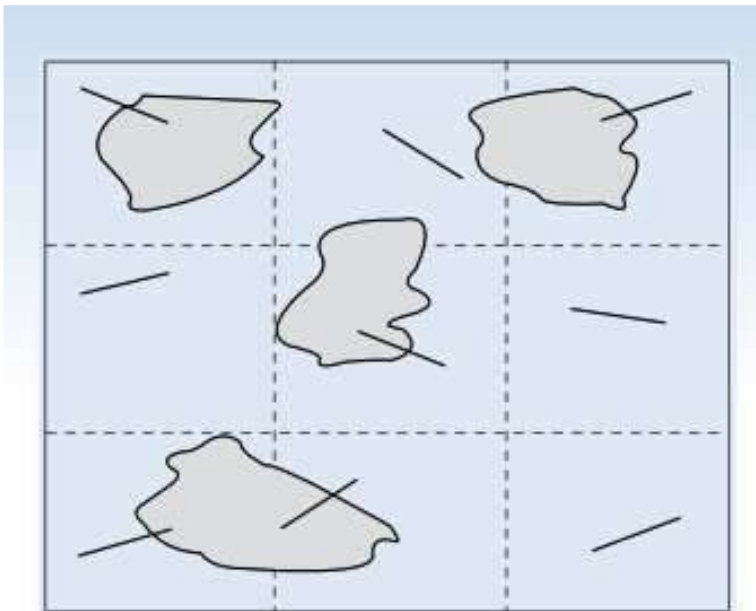


Figure 3. The area has been divided or 'stratified' into equal parts to ensure greater coverage from a limited number of sampling points.

Figure 3: Stratified sampling method (extract- Figure 3: Auld, B 2009)

Mapping an entire site accurately for weeds and native vegetation would not normally be attempted except for very small sites. So, maps would not usually form part of a quantitative monitoring program but could be used to indicate gross changes in vegetation cover, if updated over time (Auld, B. 2009).

A combination of three (3) survey methods was used to measure non-native plant coverage across the offset site including, MQHA, targeted weed transects (stratified sampling) and mapping of ground-truthed weed extent. All of these survey techniques were used to complement one another to build a baseline measurement to ensure improvements can be measured over the offset site management period.

Weed coverage has been incorporated into the 100 m x 20 m plot performed for MHQA (refer **Section 3.3.1**). All non-native plant cover was assessed by estimating the cover of exotic species over the 100 m x 20 m plot and is recorded as a percentage of overall vegetation. This data is recorded within Part E of the habitat quality assessment sheet records the non-native plant species and percentage of cover (refer to **Appendix B**).

Targeted weed transects were also conducted across the offset site. As discussed, transects were stratified across the offset sites to sample each offset site using the RGB approach. Each transect was 100 m in length and estimated the abundance of non-native plant cover. This is most conveniently done by measuring their ground cover which is the perpendicular projection of aerial parts of plants on to the ground, for a given area this is often measured as a percentage of the whole area (refer to **Figure 2**).

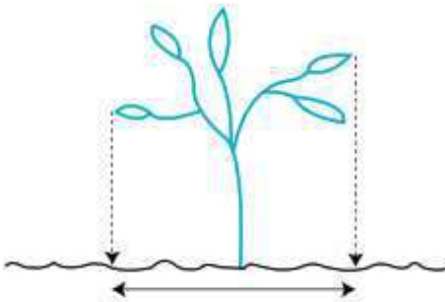


Figure 5. Ground cover of a plant indicated by the horizontal arrowed line.

Figure 4: Measuring ground cover (extract- Figure 5: Auld, B. 2009)

The width of a transect can be reduced to a single line: a line-transect. Using a tape measure stretched between two fixed points as a line-transect is a convenient way to estimate cover of different species as lengths along the tape (refer to **Figure 3**). This technique was applied to the Lyons offset site.



Figure 8. Using one edge of a tape measure to estimate the percent cover of flatweed or cat's ear amongst grass and plant litter.

Figure 5: Line transect methodology (extract- Figure 8: Auld, B. 2009)

Further, where patches of weed cover were identified within the offset site, these were located using a hand-held GPS. Sampling points overlap a number of these patches providing further detail for future site management.

2.6. Non-native Koala Predator Survey

To address Condition 6 (e) and (f) an assessment of non-native Koala predators was conducted via the use of camera trapping along with assessing and recording evidence of predators (e.g. scats, tracks, den count and traces) and/or Koala mortalities attributable to predators. Non-native Koala predators means any animal not native to Australia that is known to predate on Koalas of any age.

Camera traps have the advantage of potentially obtaining a wide range of significant information. Automatic camera systems are triggered by an animal passing in front of a sensor that detects movement, changes in ambient light, or a thermal differential (Moen & Lindquist 2004). Cameras allow for the detection of species that are difficult to study due to their elusive and nocturnal habits (Mace *et al.* 2004). They are less time consuming, less costly, and less invasive than long-term direct observation of animals. They are also beneficial in studying animals in inaccessible or difficult to access locations such as dens and nest cavities, or in rugged terrain (Mace *et al.* 1994). In addition, they enable the collection of valuable information about multiple species within any given community (Rosellini *et al.* 2008) and provide data that is more permanent and less disputable than data gathered by direct observation.

The use of camera trapping and den count is considered to be an effective method in capturing, assessing and monitoring pest management.

Motion-triggered infrared camera trap

Camera trapping involves setting up a fixed motion-triggered infrared camera to capture images or video of animals which pass in front of camera or are lured by bait. This set-up identifies fauna activity beyond the scope of direct observational studies and in the absence of potential observer impacts.

Infrared sensing cameras with an infrared flash were deployed, which use motion to trigger. Cameras were attached 30-50 cm from the ground on a tree or post, and directed towards the bait which is placed about 1.5-2 m from the mounted camera. The bait generally consisted of chicken bones/carcasses. The programming was consistent across all cameras, and cameras were set up in a consistent manner to maintain similar detection probabilities. For detecting Koala predators, cameras were placed in the vicinity of an animal trail. Cameras may be placed in alternate locations where active trails are identified.

Seven (7) cameras were deployed across the offset site between 19 April and 13 May 2021. As discussed within **section 2.1**, the number of cameras deployed across the offset site was determined using the 350 m grid to stratify sampling, reducing bias and increasing repeatability. Grid cells were separated by 350 m for monitoring across the offset site after a literature review of home ranges for targeted species, being Koala (SAT), cat, dog and foxes (non-native koala predators).

A relative abundance index (RAI) is to be calculated for non-native Koala predators, cats, dogs and foxes, using the formula $RAI = D/TN \times 100$, where D is numbers of detection and TN is the total number of camera-trap days (all cameras combined). This methodology ensures that the surveys are representative of the entire offset site and repeatable for future monitoring requirements.



Figure 6: Camera trap set-up at offset site (Camera 5).

Further, a non-native predator control program is to be implemented (to be outlined in the Offset Management Plan). Throughout the duration of control program, the results of each trapping, baiting and shooting event will be reported to provide evidence that progress is made towards achieving the targets outlined within approval Conditions 6 (e) and (f). This will be shown through a decrease in records of lethal predator control.

2.7. Limitations

Direct observation of koalas is most successful when conducted between August and January as resident females with back-young are more easily observed during this time (DoE 2013). This survey work occurred between 8 April – 27 May 2021 and therefore reduced detectability and lower activity levels was an expected limitation.

High rainfall can impact surveys as it can interfere with placement of faecal pellets and/or speed up decomposition. Although the Lyons Alert weather station is the closest to the offset site, this station was not in operation during the entire survey period (22 March to 28 April). However, did record only 62.4 mm and 68 mm for January and February, respectively which are approximately 35% and 25% less than average. Following this period, the next closest weather station (Jingle Downs Alert) recorded over 300 mm in March exceeding the average for this month by 200 mm. Faecal pellets may have been washed away by surface runoff in the lead up to the survey and/or experienced an increased rate of decomposition. Additionally, the region experienced higher than average rainfall in April, potentially impacting the detection of faecal pellets during SAT surveys. As discussed, the months preceding the surveys recorded less rainfall than average. Droughts can also impact surveys as Koalas move away from their core habitat to find food and habitat.

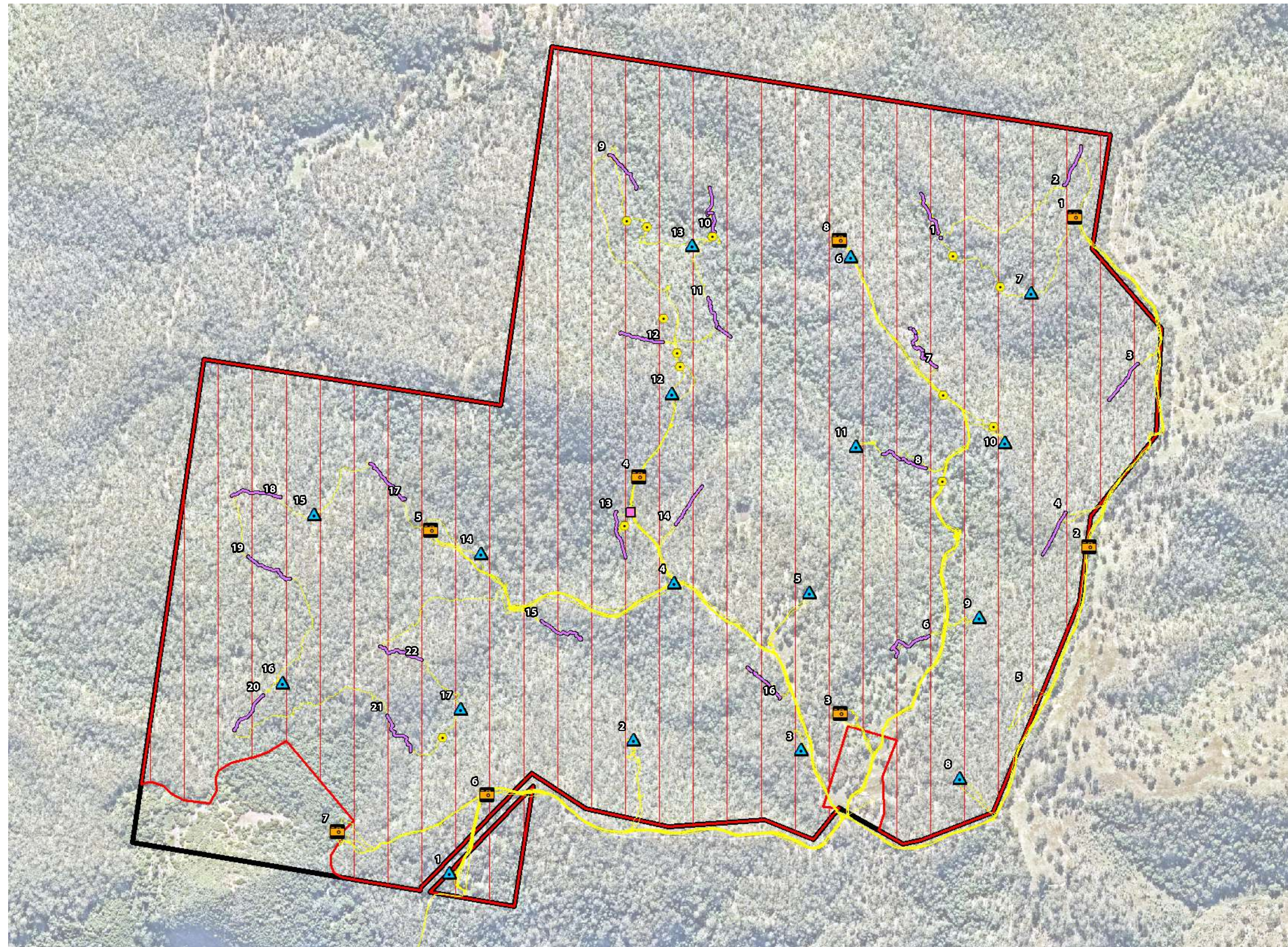
During camera trap surveying, an attempt to capture every animal several times over should be made to increase probability of species identification, however this could lead to individuals being counted multiple times. This limitation is moderated by camera set-up using bursts settings and the implementation of an independence threshold of two (2) minutes. Therefore, every observation of an animal two (2) minutes after the first observation is considered a new observation.

As noted within the *Survey Guidelines for Australia's threatened mammals* (Department of Sustainability, Environment, Water, Pollution and Communities, 2011), the time taken to effectively search a subject site varies considerably according to the size and nature of the area. For large sites and remote areas, such as the Lyons offset site, constraints required the identification of potential habitat resources through ground-truthing after reviewing vegetation maps, aerial photographs and imagery. The size and topography of both offset sites contributed to time constraints limiting the search area. This limitation was reduced with the use of AUs and the RGB approach, ensuring results are representative of the entire area.










The terrain across the offset site is difficult to traverse. As such, where possible surveys were conducted as close as possible to points dictated by the 350 m grid applied.

It is noted that some surveys were not conducted during peak activity seasons (Spring & Summer) however this is not expected to impact the baseline fauna or flora survey results as resident populations would be present on-site and flowering and fruiting species are identifiable within off-peak seasons. It is recommended future monitoring is conducted within the optimal seasons to ensure overall site variability is captured over the management period.

1. Survey Effort



Legend

-  Qld DCDB
-  Offset site DCDB
-  Offset area (250.84 ha)
-  Camera
-  Dog Print
-  SAT
-  Weed Observation
-  Weed transect
-  GPS Tracklog

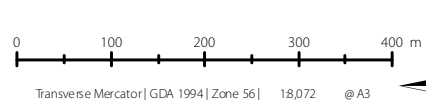


on behalf of
Pointcorp Heritage
Park Pty Ltd

NOTES
This plan was prepared as a desktop assessment tool.
The information on this plan is not suitable for any other purpose.
Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey.

Layer Sources
Old State Cadastre and Mapping layers © State of Queensland
(Department of Natural Resources and Mines) 2021. Updated data available at
<http://qldspatial.information.qld.gov.au/catalogue/>

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.



Issue	Date	Description	Drawn	Checked
A	5/08/2021	Preliminary	LS	LT

Transverse Mercator | GDA 1994 | Zone 56 | 18,072 @ A3

3. Baseline Survey Results

3.1. Species Stocking Rate

As outlined within **Section 2** above, the species stocking rates for Koala and GHFF were incorporated into the MHQA. This section discusses the survey results required to calculate the species stocking rates for both Koala and GHFF.

3.1.1 Koala

To satisfy the approval conditions, a baseline Koala density survey is required to measure progress towards achieving the performance criteria as prescribed within the approval conditions (ref. EPBC 2017/8090). The Lyons offset site was surveyed using direct methods, including, diurnal searches and opportunistic observations during other survey works. Diurnal searches and opportunistic observations failed to identify this species.

Although the detection of a single individual via camera survey does not provide a density or species stocking rate, a Koala was detected within the offset site via the motion detection camera survey deployed between the 19 April and 13 May 2021. This individual was detected on Camera 3 (refer to **Photo 1** and **Plan 1** for camera locations).

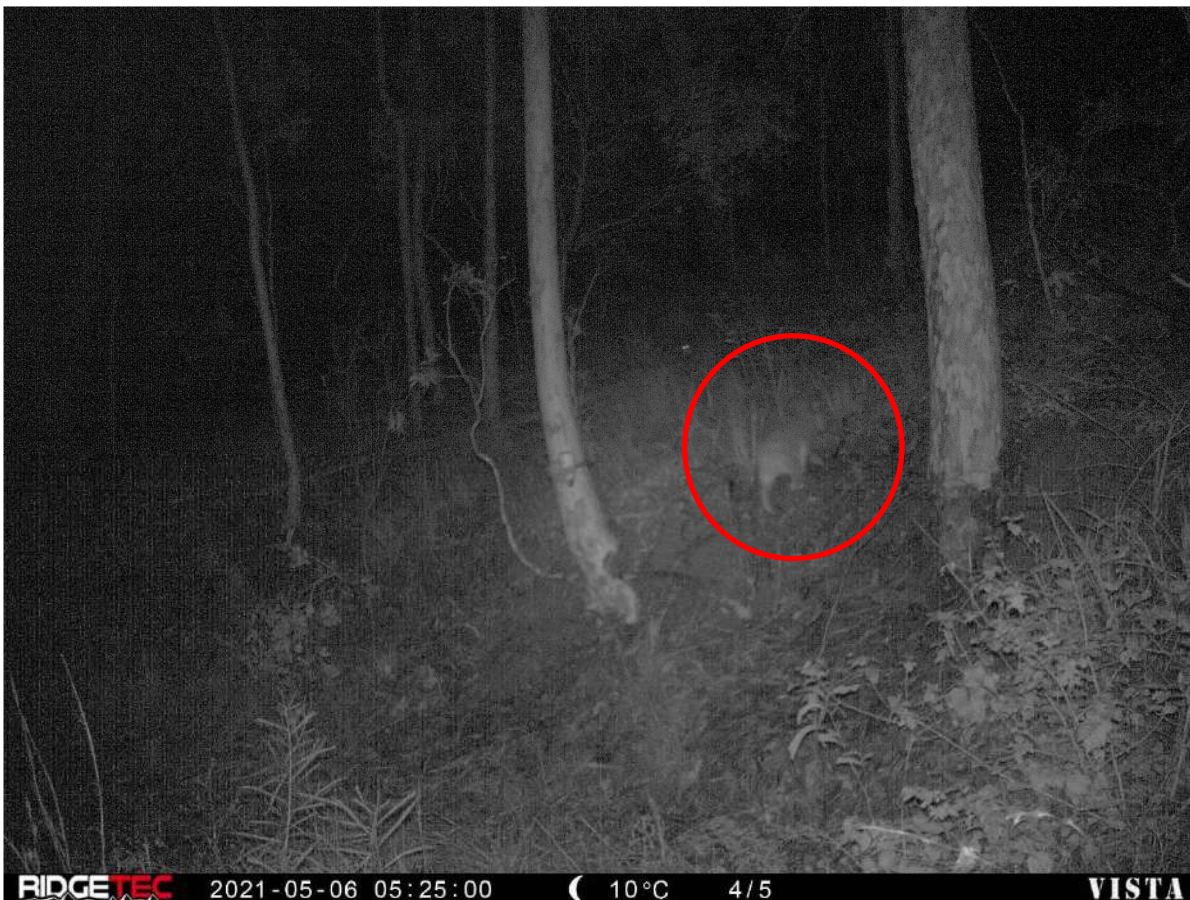


Photo 1: Koala detected at Camera 3 location.

Indirect methods can be used to determine presence/absence of fauna. Indices using animal signs including scats, tracks and scratches can indicate species presence and habitat use. Koala activity levels and density were determined by utilising SAT. Surveys are undertaken in accordance with the methodology developed by Phillips and Callaghan (2011) and specified in the *EPBC Act Referral Guidelines for the Vulnerable Koala*. The SAT method is an assessment of Koala activity involving a search for any Koalas and signs of Koala usage and is therefore uses indices to determine presence/absence. Phillips & Callaghan (1995) found this technique is suitable for use in conjunction with stratified/random or systematic survey techniques but has proved especially powerful when applied at the landscape-scale using a RGB sampling design and appropriate spatial modelling techniques.

RGB-SAT sampling aims to provide a simple, unbiased and robust sampling tool that addresses the issue of determining and delineating koala metapopulation boundaries for the purposes of providing conservation and planning certainty (Phillips, S. and Hopkins, M. 2007). A systematic approach was used to survey for evidence of koala activity. In order to ensure a uniform and unbiased distribution of sampling effort throughout the study area, a 350 m x 350 m grid was applied on a map of the offset site and the resulting grid-cell intersections selected as sampling.

Seventeen (17) SAT surveys were completed across the Lyons offset site between April and May 2021. Eight (8) SAT sites yielded a 'low Koala activity level' result (based on East Coast med-high area/density) (Phillips and Callaghan 2011) (refer to **Table 9**). The other nine (9) SAT sites yielded nil results. Refer to **Appendix A** for raw SAT data.

Table 9: SAT Survey Summary – Lyons

SAT	Date	Total Percentage	Activity Category
1	20 April 2021	0%	Nil
2	20 April 2021	6.667%	Low
3	20 April 2021	0%	Nil
4	20 April 2021	6.667%	Low
5	20 April 2021	0%	Nil
6	20 April 2021	3.333%	Low
7	22 April 2021	3.333%	Low
8	22 April 2021	0%	Nil
9	22 April 2021	3.333%	Low
10	22 April 2021	0%	Nil
11	22 April 2021	0%	Nil
12	23 April 2021	10.00%	Low
13	23 April 2021	10.00%	Low

SAT	Date	Total Percentage	Activity Category
14	14 May 2021	3.333%	Low
15	14 May 2021	0%	Nil
16	14 May 2021	0%	Nil
17	14 May 2021	0%	Nil

The usage of this methodology detailed by Phillips and Callaghan (2011) is considered an effective way of accurately gauging Koala density within a site. However, there are limitations to the method including the mobility of Koalas, total number entering and exiting the site, and mortality rates. However, given the time of year these surveys were undertaken (off-peak season) it can be assumed that the results are representative of the resident Koalas which would inhabit that offset site year-round and are not transient individuals which come and go during mating season (August to February). Other factors which may contribute to the low scores include the difficulty in identifying scats using the SAT method. This method relies heavily on the observer's ability to spot scat amongst ground cover which can vary significantly between SAT locations. Cristescu *et al.* 2012, found that detectability varied up to 16% between plots of different ground cover.

The Koala SAT survey methodology is considered an accurate technique when estimating low-density Koala populations (Mossaz 2010). Research by Rhodes *et al.* (2015) indicates that within the Ipswich region the Koala density is approximately 0.03 Koalas/ha. Rhodes *et al.* (2015) attribute the low population density to a negative relationship identified between temperature and Koala densities. Therefore, when estimating a Koala density in an area that is known to be 'low', the SAT survey methodology is considered to provide an accurate determination on the activity levels (Mossaz 2010).

As there was only one (1) observation across the Lyons offset site detected via the motion detection camera survey, Koala carrying capacity has been estimated using SAT survey results, scientific literature and data for the SEQ Koala population. The Koala carrying capacity has been estimated in the MHQA to coincide with the latest available published scientific literature and data for the SEQ Koala population.

A recent study undertaken by Rhodes *et al.* (2015) revealed that the density of Koala populations in SEQ ranges from 0.004 Koalas/ha to 6.54 Koalas/ha, with the average Koala density across the region being 0.04 Koalas/ha. These findings are supported by Melzer *et al.* (1994) who indicates that the Koala population in SEQ ranges from 0.005 Koalas/ha to 2.5 Koalas/ha. The more recent study by Rhodes *et al.* (2015) found that the negative relationship between temperature and Koala densities is consistent with other studies elsewhere (Adams-Hosking *et al.* 2011, Lunney *et al.* 2014) and is associated with low Koala densities in the Ipswich City Council region, where temperatures are relatively high. Within the Ipswich City Council region, the Rhodes *et al.* (2015) study detected thirty-six (36) Koalas over 1,078 transect hectares, resulting in a Koala density of 0.033 Koalas/ha.

Using the available published scientific literature and SAT results (refer to **Table 9**), it can be inferred that the Lyons offset site demonstrates low Koala activity levels (Phillips *et al.* (2011)), and therefore contain an estimated Koala density ranging from 0.02 to 0.08 Koalas/ha. Therefore, using these Koala density estimations

and Koala habitat, 250.843 ha, the offset site has an estimated Koala carrying capacity of between five (5) and twenty (20) (refer to **Table 10**). It should be noted that due to the lack of available published scientific literature of Koala densities in SEQ, these carrying capacity estimates are subject to ongoing adaptive management as data and scientific literature becomes available.

Table 10: Offset Site Koala Carrying Capacity Estimate

Offset Site	Area (ha)	Density (Koalas/ha)	Carrying Capacity (Koalas)
Lyons	250.843 ha	0.02 to 0.08	5 (5.016)– 20 (20.067)

Based on the findings of these surveys, condition characteristics for each of the AUs were calculated (refer **Table 11**).

Table 11: Species stocking rate condition characteristics - Koala

Condition Characteristic	AU1	AU2	AU3	AU4	AU5	AU6
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	10	10	10	10	10	10
Species usage of the site (habitat type & evidenced usage)	15	15	15	15	15	15
Approximate density (per ha)	10	10	10	10	10	10
Role/importance of species population on site	5	5	5	5	5	5
Species Stocking Rate Score	40/70	40/70	40/70	40/70	40/70	40/70
Species Stocking Rate Score (out of 4)	2.29	2.29	2.29	2.29	2.29	2.29

3.1.2 Grey-headed Flying-fox

The GHFF occupies most areas in their distribution in highly irregular patterns, and therefore surveys based on animal sightings are unlikely to be reliable. A more effective survey method is to search appropriate databases and other sources for the locations of camps, and to conduct vegetation surveys to identify feeding habitat. As discussed in **Section 2.4**, the following methods in accordance with the *Survey guidelines for Australia's threatened bats* were employed:

1. Prior to the survey.

A review of known flying fox camps was conducted for the project area, and the wider general area.

2. Daytime field surveys for camps.

Surveying for Flying-fox camps is considered to be appropriate through walking transects, watching for flying bats and listening for their distinctive calls. Due to the distinctness and clear visibility of flying-fox camps, GHFF presence was assessed by focusing on daytime field surveys for camps, in conjunction with vegetation surveys/habitat assessment as per **Section 3.2**.

3. Surveys of vegetation communities and food plants.

Foraging habitat assessments were conducted and are discussed in **Section 3.2**.

4. Night time surveys.

Evening searches were also conducted via walking transects and spotlighting whilst walking transects can survey for individuals using the site for foraging purposes. Flying-fox camp investigations were completed for known camps in the nearby area to confirm GHFF presence/absence, and were undertaken during the day when flying-fox are typically roosting.

Desktop Review

This species roosts in large aggregations or camps in close proximity (20 km or less) to a regular food source, often in stands of riparian rainforest, Paperbark or Casuarina forest (Eby, 1995). Camps provide resting habitat, sites of social interactions and refuge for animals during significant phases of their annual cycle, such as birth, lactation and conception (Parry-Jones and Augee 1992).

The GHFF occurs in the coastal belt from Rockhampton in central Queensland to Melbourne in Victoria (Tidemann, 1998; refer to **Figure 7**). 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 (Eby & Lunney 2002). At a regional scale, broad trends in the distribution of plants with similar flowering and fruiting times support regular annual cycles of migration (Eby & Lunney 2002). It is infrequently found west of the Great Dividing Range (Tidemann 1998). The species occurs at a higher latitude than any other megachiropteran (megabat) species (Aston 1987; Menkhorst & Dixon 1985; Parry-Jones & Augee 1991).

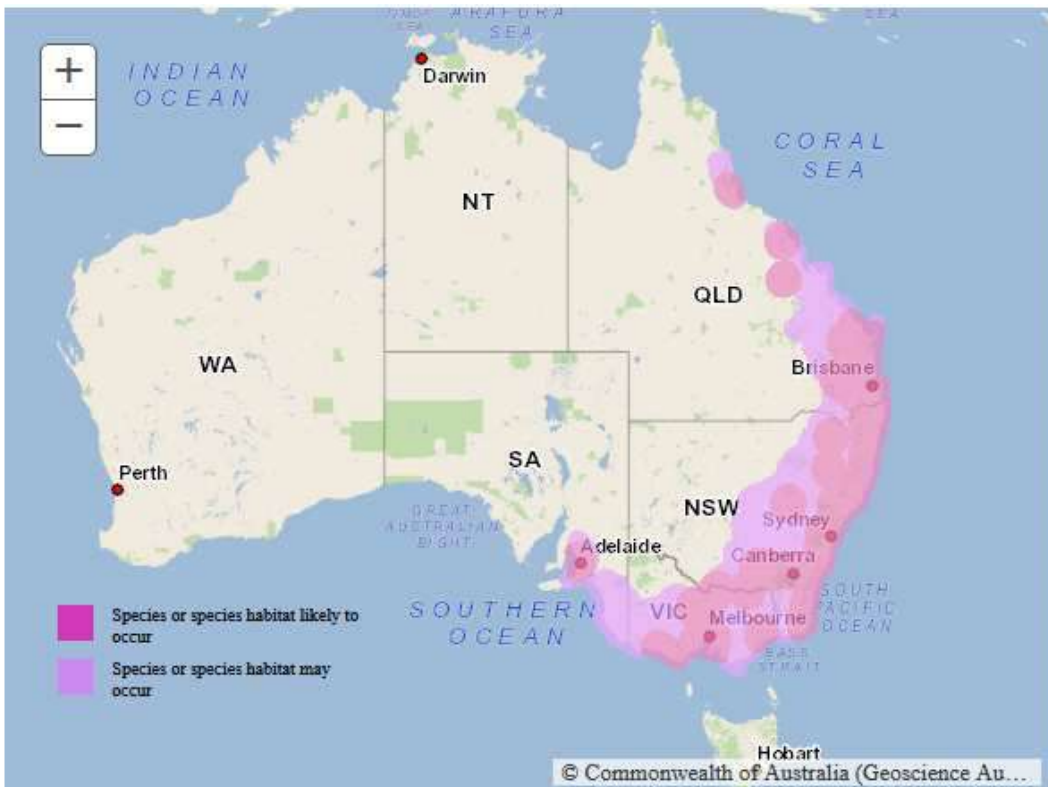


Figure 7: Grey-headed Flying-fox (*Pteropus poliocephalus*) Distribution Map (DAWE SPRAT, 2021)

A review of WildNet records indicate that the closet GHFF record occurs within approximately 4km of the Lyons offset site. Data derived from the DAWE national Flying-fox monitoring program indicates that five (5) flying-fox camps are known to occur within 20km of the Lyons offset site, one (1) of these is considered inactive (refer to **Plan 3**).

The Lyons site contains suitable foraging habitat for the GHFF (refer to **Table 12**). RE mapping demonstrates that the site contains a variety of flowering and fruiting foraging species to support individuals and larger populations. However, fruiting and flowering usually occurs between spring-autumn. These findings were ground-truthed through on-site surveys (refer to **Section 3.2**).

Table 12: Regional Ecosystem Summary

VMA Status	RE	Short Description	AU
Category B	RE12.8.20	Shrubby woodland with <i>Eucalyptus racemosa subsp. racemosa</i> or <i>E. dura</i> on Cainozoic igneous rocks	1
Category B & C	RE12.9-10.2	<i>Corymbia citriodora subsp. variegata</i> +/- <i>Eucalyptus crebra</i> open forest on sedimentary rocks	5 & 6
Category B	RE12.9-10.3	<i>Eucalyptus moluccana</i> open forest on sedimentary rocks	3

VMA Status	RE	Short Description	AU
Category B	RE12.9-10.7	<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	4
Category B	RE12.9-10.17	<i>Eucalyptus acmenoides</i> , <i>E. major</i> , <i>E. siderophloia</i> +/- <i>Corymbia citriodora</i> subsp. <i>variegata</i> open forest on sedimentary rocks	2

Site Surveys

A wide range of methods can be used to count bats. Murphy *et al.* (2008) identified just two methods that could be implemented rapidly and at large spatial scales; fly-out counts, where animals are counted in the air as they exit a camp, and ground counts, where animals are counted during the day in the camp. Following review of recommended methodologies for population density calculations within provided by CSIRO (A monitoring method for the Grey-headed Flying-fox, (*Pteropus poliocephalus*) (Westcott *et al.* 2011)), fly-out counts and ground-counts relating to flying-fox exiting camps and being situated within camps during the day were considered suitable for estimating abundance.

The offset sites were traversed by foot to identify GHFF presence or absence in the form of camps on-site. DAWE determined that the development was a controlled action as it will result in the clearing of vegetation identified as suitable foraging habitat for the GHFF (EPBC2017/8090). As such, the approved development does not directly impact on this species as no roosts/camps were identified within the impact site. As stated within the *Survey Guidelines for Australian Threatened Bats*, the GHFF occupies most areas in their distribution in highly irregular patterns, and therefore surveys based on animal sightings are unlikely to be reliable. A more effective survey method is to conduct vegetation surveys to identify feeding habitat.

As discussed above, species stocking rate for GHFF associated with this proposed action is related to the percentage of trees reaching the Large Tree benchmark at the site at the time of undertaking the survey. The number and condition of winter or spring flowering GHFF foraging species across the offset site were captured within the MHQA assessments (results provided in **Section 3.2.2**).

Baseline GHFF species stocking rate was assessed by using the percentage of trees reaching the Large Tree benchmark. Large trees are described as a measure for the provision of reliable foraging resources for wildlife, providing nectar, leaves and seeds (Biocondition manual). Large trees provide greater leaf material and nectar for foraging purposes than trees with low DBH, and so are a reliable indicator of provision of quality habitat for GHFF. Larger trees, on average flower more frequently, more intensely and for a longer period of time than small trees (Wilson and Bennett 1999, Wilson 2002). The presence of Large Trees is considered to be of significant importance in identifying optimal habitat for GHFF.

Large trees are assessed using the Modified Habitat Quality Assessment Transects and are an indicator for the potential for foraging tree density and food availability. The number of Large Trees is recorded and compared to the benchmark data for the relating Regional Ecosystem. This is converted into a percentage of the benchmark, and a score ascribed. (refer **Appendix C** for raw data).

3.2. Modified Habitat Quality Assessment

3.2.1 Koala

A total of fourteen (14) MHQAs were conducted across the Lyons offset site, with nine (9) completed in May 2019, and the five (5) completed in February 2020. Three (3) were conducted in AU1 and AU2 and two (2) conducted within AU3 being the smaller unit (refer **Appendix B** for results data).

The Lyons offset site scored a 2.46 out of 3 for site context based on size of patch, connectedness, context, ecological corridors, role of site location to species overall population in the State, threats to the species and species mobility capacity (refer to **Plan 2** for context analysis). The site condition, site context score and species stocking rate (2 out of 3) combined to provide a habitat quality score of 6.49 (rounded to 6.00).

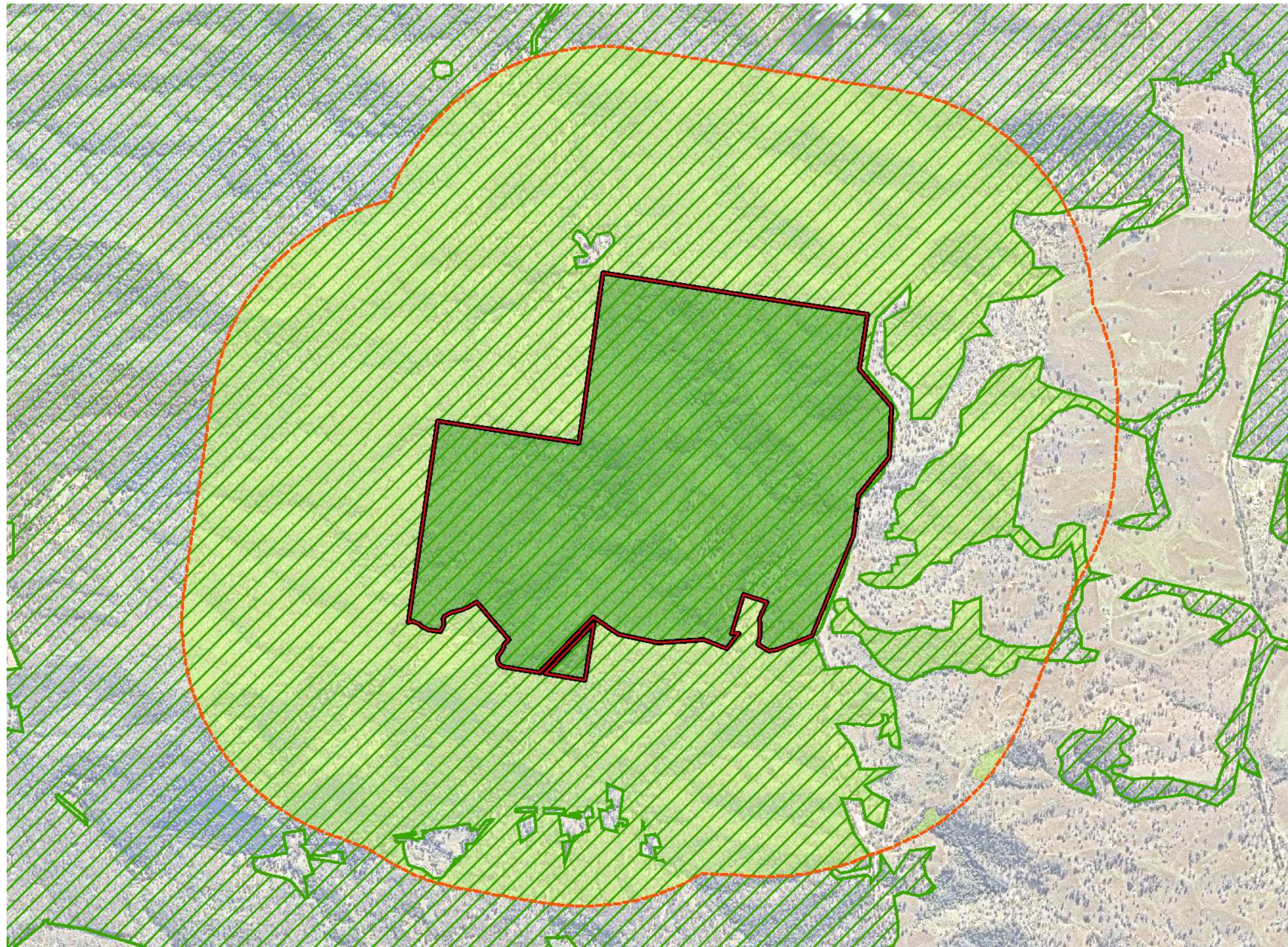
Table 13: Lyons Modified Habitat Quality Assessment Tool [Koala]

Attribute	Condition Characteristics	AU1	AU2	AU3	AU4	AU5	AU6
Site Condition (30%)	Recruitment of woody perennial species in EDL	4/5	4/5	4/5	0/5	3/5	4/5
	Native plant species richness – trees	2.5/5	5/5	5/5	5/5	3.13/5	3.75/5
	Native plant species richness – shrubs	2.5/5	2.5/5	2.5/5	1.25/5	1.88/5	1.25/5
	Native plant species richness – grasses	3.75/5	2.5/5	2.5/5	2.5/5	2.5/5	3.75/5
	Native plant species richness – forbs	2.5/5	2.5/5	2.5/5	1.25/5	1.25/5	2.5/5
	Tree canopy height	5/5	5/5	5/5	5/5	5/5	5/5
	Tree canopy cover	4.5/5	4.5/5	4.5/5	4/5	5/5	3.75/5
	Shrub canopy cover	1.5/5	4/5	5/5	3/5	5/5	5/5
	Native grass cover	2/5	0.5/5	1/5	2/5	3/5	1/5
	Organic litter	5/5	3/5	5/5	4/5	5/5	4/5
	Large trees	2.5/15	5/15	5/15	2.5/15	5/15	5/15
	Coarse woody debris	5/5	1/5	2/5	5/5	4.25/5	3.5/5

Attribute	Condition Characteristics	AU1	AU2	AU3	AU4	AU5	AU6
	Non-native plant cover	2.5/10	10/10	4/10	5/10	5/10	4/10
	Quality and availability of food and foraging habitat	10/10	10/10	10/10	10/10	10/10	10/10
	Quality and availability of shelter habitat	10/10	10/10	10/10	10/10	10/10	10/10
	Site Condition Score	63/100	62/100	68/100	61/100	69/100	67/100
	Site Condition Score (out of 3)	1.90	1.86	2.04	1.82	2.07	2.00
Site Context (30%)	Size of the patch	10/10	10/10	10/10	10/10	10/10	10/10
	Connectedness	4/5	4/5	4/5	4/5	4/5	4/5
	Context	4/5	4/5	4/5	4/5	4/5	4/5
	Ecological corridors	6/6	6/6	6/6	6/6	6/6	6/6
	Role of site location to species overall population in the State	5/5	5/5	5/5	5/5	5/5	5/5
	Threats to the species	7/15	7/15	7/15	7/15	7/15	7/15
	Species mobility capacity	10/10	10/10	10/10	10/10	10/10	10/10
	Site Context Score	46/56	46/56	46/56	46/56	46/56	46/56
Site Context Score (out of 3)	2.46	2.46	2.46	2.46	2.46	2.46	
Species Stocking Rate (40%)	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	10	10	10	10	10	10

Attribute	Condition Characteristics	AU1	AU2	AU3	AU4	AU5	AU6
	Species usage of the site (habitat type & evidenced usage)	10	10	10	10	10	10
	Approximate density (per ha)	10	10	10	10	10	10
	Role/importance of species population on site	5	5	5	5	5	5
	Species Stocking Rate Score	35/70	35/70	35/70	35/70	35/70	35/70
	Species Stocking Rate Score (out of 4)	2	2	2	2	2	2
Site Condition Score		1.90	1.86	2.04	1.82	2.07	2.00
Site Context Score		2.46	2.46	2.46	2.46	2.46	2.46
Species Stocking Rate Score		2	2	2	2	2	2
Habitat Quality Score		6.36	6.32	6.50	6.28	6.53	6.46
Assessment Unit Area		7.69	21.93	9.59	20.39	181.09	10.15
Total impact Area (ha)		250.84	250.84	250.84	250.84	250.84	250.84
Assessment Unit Size Weighting		0.03	0.09	0.04	0.08	0.72	0.04
Weighted Habitat Quality Score		0.19	0.55	0.25	0.51	4.69	0.29
Habitat Quality Score		6.49 (rounded to 6)					

2. Koala Context Assessment



Legend

- Qld DCDB
- Offset Site
- Percentage of Koala Critical habitat within 1km of offset site (84%)
- Koala Habitat Onsite
- Size of Koala critical habitat patch adjoining offset site with a >200m corridor connectivity (>10,000 ha)
- Site 1km Buffer
- Percentage of offset area boundary length supporting a koala critical habitat connection off and on site (100%)

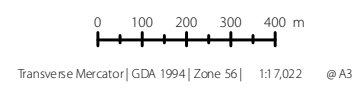


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3.2.2 Grey-headed Flying-fox Foraging Habitat

As discussed within **Section 3.2.1**, a total of fourteen (14) MHQAs were conducted, with two (2) conducted in each AU, excluding AU2 and AU5 with one (1) and four (4), respectively. GHFF foraging habitat assessments were conducted in conjunction with each of these transects (refer **Appendix C** for results data **Table 14** for results summary).

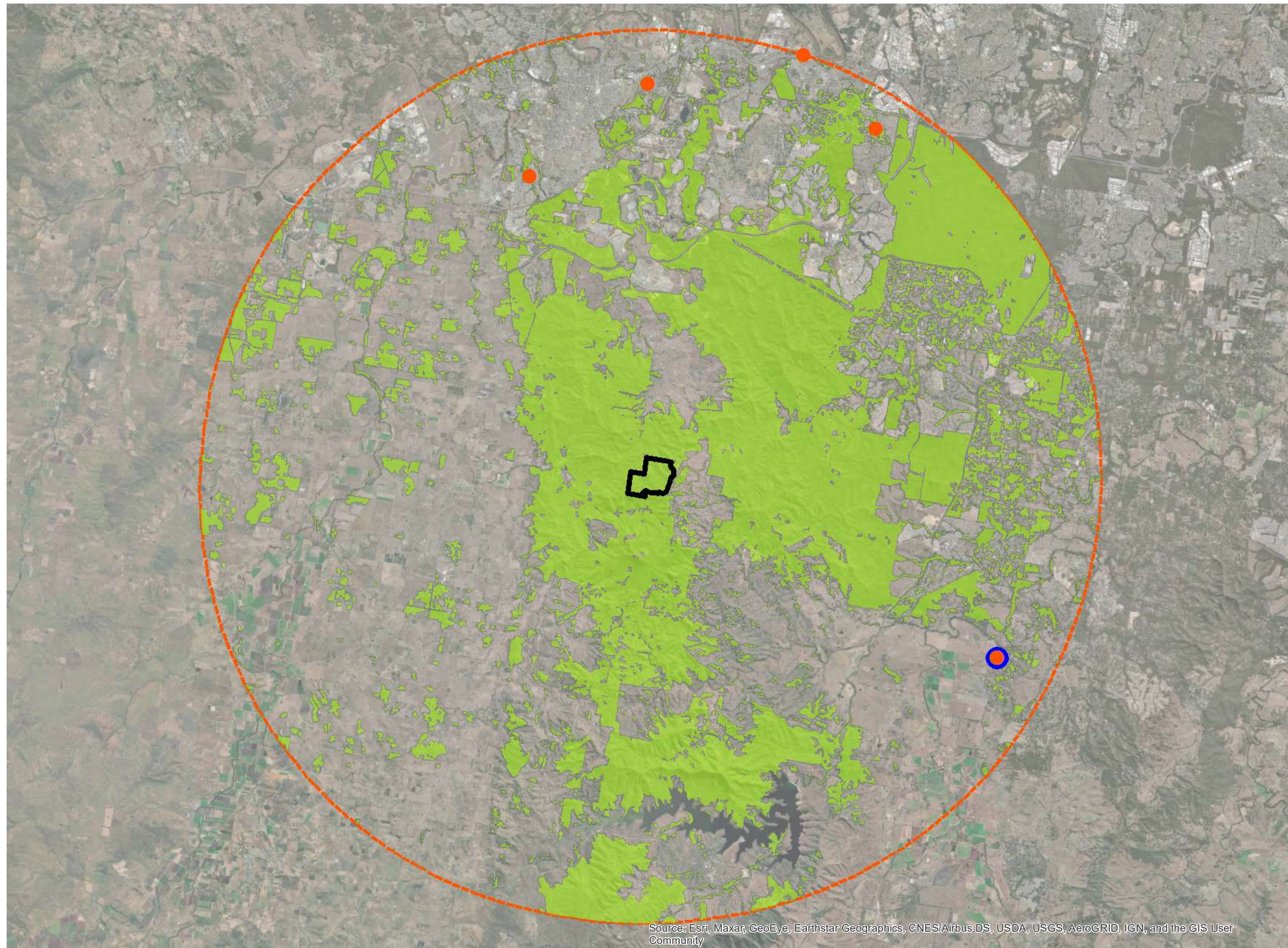
The Lyons offset site scored a 2.22 out of 3 for site context based on size of patch, connectedness, context, ecological corridors, role of site location to species overall population in the State and threats to the species (refer to **Plan 3** for context analysis). Species stocking rate varied significantly between AUs from 0.3 to 1.2. The site condition, site context score and species stocking rate combined to provide a habitat quality score of 5.27 (rounded to 5).

Table 14: Lyons Offset Site Grey-headed Flying-fox Habitat Quality






Attribute	Condition characteristics	AU1	AU2	AU3	AU4	AU5	AU6
Site Condition (40 %)	Vegetation Condition	20/20	20/20	20/20	20/20	20/20	10/20
	Species Richness	10/20	20/20	20/20	20/20	10/20	12.5/20
	Flower Score	5/10	5/10	6.5/10	5/10	4.25/10	6.5/10
	Timing of Biological Shortages	10/10	10/10	10/10	10/10	9.25/10	10/10
	Quality of Foraging Habitat	5/20	7.5/20	5/20	7.5/20	5/20	5/20
	Non-native Plant Cover	5.5/20	5.5/20	5/20	7.5/10	10/10	7.5/20
	Site condition score	55.5/100	68/100	66.5/100	70/100	58.5/100	51.5/100
	Site condition score (out of 4)	2.22	2.72	2.66	2.8	2.34	2.06
Site Context (30 %)	Size of the patch	10/10	10/10	10/10	10/10	10/10	10/10
	Connectedness	6/10	6/10	6/10	6/10	6/10	6/10
	Context	6/10	6/10	6/10	6/10	6/10	6/10
	Ecological corridors	10/10	10/10	10/10	10/10	10/10	10/10

Attribute	Condition characteristics	AU1	AU2	AU3	AU4	AU5	AU6
	Role of site location to species overall population in the State	5/10	5/10	5/10	5/10	5/10	5/10
	Threats to the species	5/10	5/10	5/10	5/10	5/10	5/10
	Site context score	42/60	42/60	42/60	42/60	42/60	42/60
	Site context score (out of 3)	2.10	2.10	2.10	2.10	2.10	2.10
Species Stocking Rate (30 %)	GHFF large trees	1/10	3/10	6/10	4/10	3.5/10	3/10
	Species stocking rate score	1/10	3/10	6/10	4/10	3.5/10	3/10
	Species stocking rate score (out of 3)	0.3	0.9	1.2	0.6	0.75	0.9
Total quality score		4.62	5.72	5.96	5.5	5.19	5.06
Assessment unit area		7.69	21.93	9.59	20.39	181.09	10.15
Total offset area		250.84	250.84	250.84	250.84	250.84	250.84
Size Weighting		0.03	0.09	0.04	0.08	0.72	0.04
Area weighted score		0.14	0.5	0.23	0.45	3.75	0.20
Total (out of 10)		5.27 (rounded to 5)					

3. Grey-headed Flying-fox Context Assessment



Legend

-  Offset Site DCDB
-  Site 20km Buffer
-  Percentage of GHFF habitat in 20km context area from offset area - 37%
-  GHFF roost camp - recently recorded activity (5)
-  GHFF roost camp - level 3 =< population recently recorded (no records)



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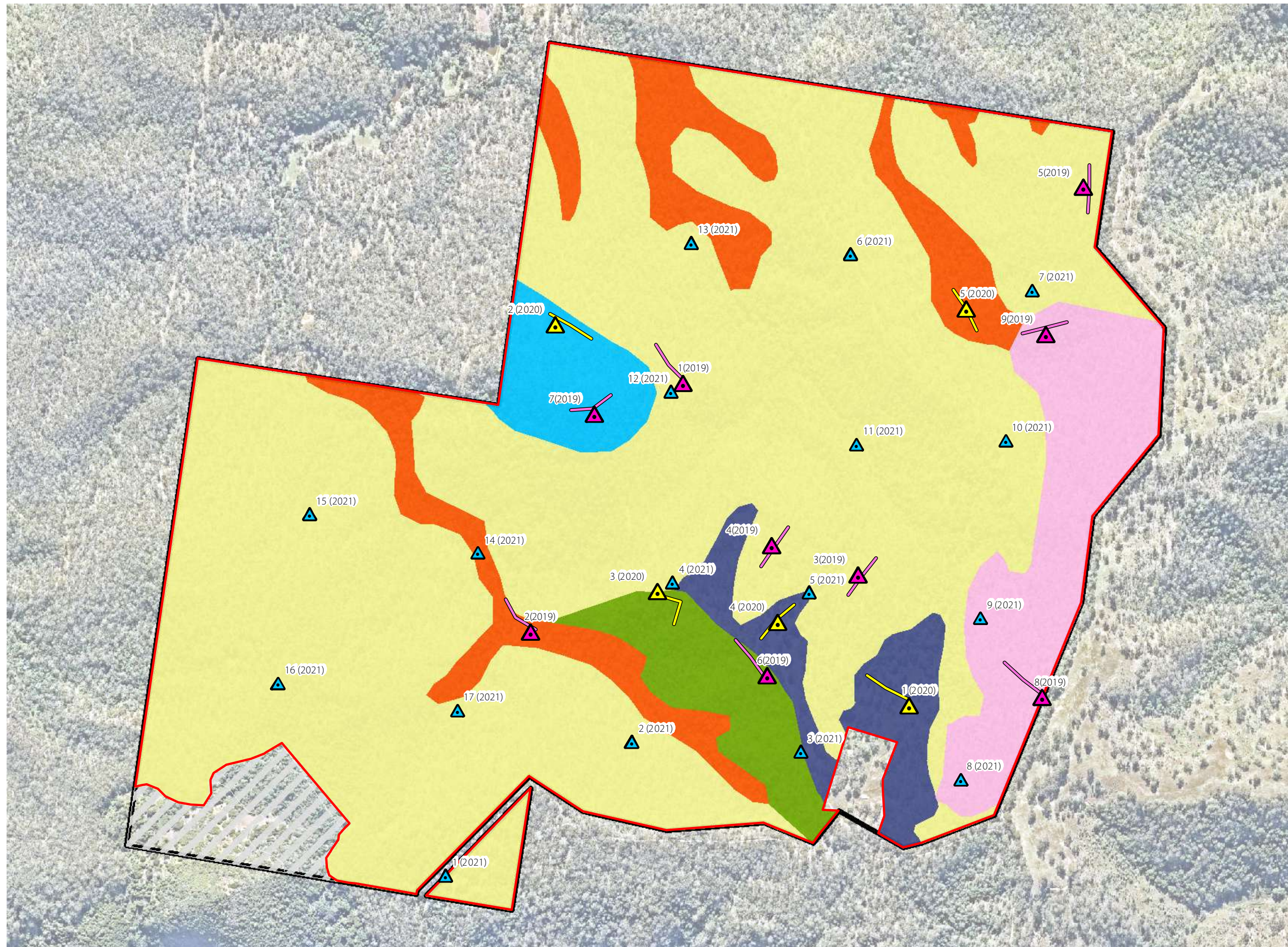
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Issue	Date	Description	Drawn	Checked
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4. Habitat Quality Survey



Legend

-  Qld DCDB
-  Offset site DCDB
-  Offset area (250.84 ha)
- Assessment Units**
-  Unit 1 - 7.69 ha
-  Unit 2 - 21.93 ha
-  Unit 3 - 9.59 ha
-  Unit 4 - 20.39 ha
-  Unit 5 - 181.09 ha
-  Unit 6 - 10.15 ha
-  Habitat not-critical to the survival of the Koala
-  Habitat Quality Transect (2020)
-  Habitat Quality Transect (2019)
-  SAT (2021)
-  SAT (2020)
-  SAT (2019)

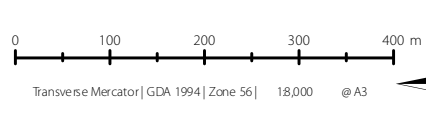


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3.3. Weed Cover

Weed cover across the Lyons offset site were recorded using three (3) complimentary techniques; MQHA, targeted weed transects, and locating and mapping patches of weeds (refer to **Section 2.7** for survey methodology).

The MHQA surveyed weed cover simultaneously with other habitat quality indicators across the Lyons offset sites. A summary of these results are provided in **Table 15**. The average across the Lyons offset site within the MQHA transects is 33.75%. These surveys are easily repeated to ensure non-native plant cover over the offset site decreases over the management period.

Table 15: MHQA Non-native Plant Cover Summary – Lyons

AU	Transect ID	Vegetation Status	RE	Non-native plant cover (%)
1	T7 (2019) & T2 (2020)	Remnant	RE12.8.20	42.5%
2	T2 (2019) & T5 (2020)	Remnant	RE12.9-10.17	45%
3	T6 (2019) & T3 (2020)	Remnant	RE12.9-10.3	37.5%
4	T8 & T9 (2019)	Remnant	RE12.9-10.7	32.5%
5	T1, T3, T4 & T5 (2019)	Remnant	RE12.9-10.2	12.5%
6	T1 & T4 (2020)	Regrowth	12.9-10.2	32.5%
Offset Site Average				33.75%

Twenty-two (22) weed cover transects were conducted across the offset site. These transect differentiate between non-native plant cover and weeds of national significance (WONS). Utilising the weed cover methodology the average non-native plant cover and WONS is 50.95% and 23.23%, respectively (refer to **Table 16**). Transects 8, 9, 10 and 11 were recorded with 90% or greater non-native plant cover, the greatest of which was Transect 8 with 96%. A list of the recorded weed species is provided in **Table 16**. Refer to **Appendix D** for raw non-native plant cover transect data.

Table 16: Weed Cover Transects – Lyons

Transect ID	AU	Non-native plant cover (%)	WONS (%)
WT1	2	74%	22%
WT2	5	27%	3%
WT3	4	14%	6%
WT4	4	43%	19%
WT5	4	29%	8%

Transect ID	AU	Non-native plant cover (%)	WONS (%)
WT6	6	59%	37%
WT7	5	59%	1%
WT8	5	96%	57%
WT9	5	90%	53%
WT10	2	90%	71%
WT11	5	90%	33%
WT12	5	41%	4%
WT13	5	47%	34%
WT14	6	21%	3%
WT15	2	55%	43%
WT16	3	48%	22%
WT17	5	57%	19%
WT18	5	24%	5%
WT19	5	74%	34%
WT20	5	13%	4%
WT21	5	52%	30%
WT22	5	18%	3%
Offset Site Average		50.95	23.23%

Table 17: Recorded Weed Species – Lyons

Scientific Name	Common Name	WONS
<i>Ageratum houstonianum</i>	Blue Billygoat weed	
<i>Bidens pilosa</i>	Cobbler's Pegs	
<i>Desmodium uncinatum</i>	Silver-leaf Desmodium	
<i>Desmodium intortum</i>	Green-leaf Desmodium	
<i>Lantana camara</i>	Lantana	✓
<i>Lantana montevidensis</i>	Creeping Lantana	
<i>Melinis repens</i>	Red Natal Grass	
<i>Passiflora suberosa</i>	Corky Passion Vine	

Additionally, where patches of non-native plant cover were identified within the offset sites, these were located with a hand-held GPS and the extent of the patch were mapped to guide future management actions within the offset site (refer to **Plan 5**).

3.4. Non-native Koala Predator Survey

Field surveys did not identify any evidence of Koala mortalities.

Seven (7) motion activated cameras were deployed across the Lyons Offset Site between 19 April and 13 May 2021. The cameras detected eight (8) non-native Koala predators, all identified as dogs (*Canis familiaris*), over a total of 168 survey nights (refer to **Table 18**). Other native and non-native species were capture during this survey. A full list of animals captured throughout this survey is provided in **Appendix E**.

A relative abundance index (RAI) was calculated for non-native Koala predators, cats, dogs and foxes, using the formula $RAI = D/TN \times 100$, where D is numbers of detection and TN is the total number of camera-trap nights (all cameras combined). Thus, the RAI for Lyons is **4.76**.

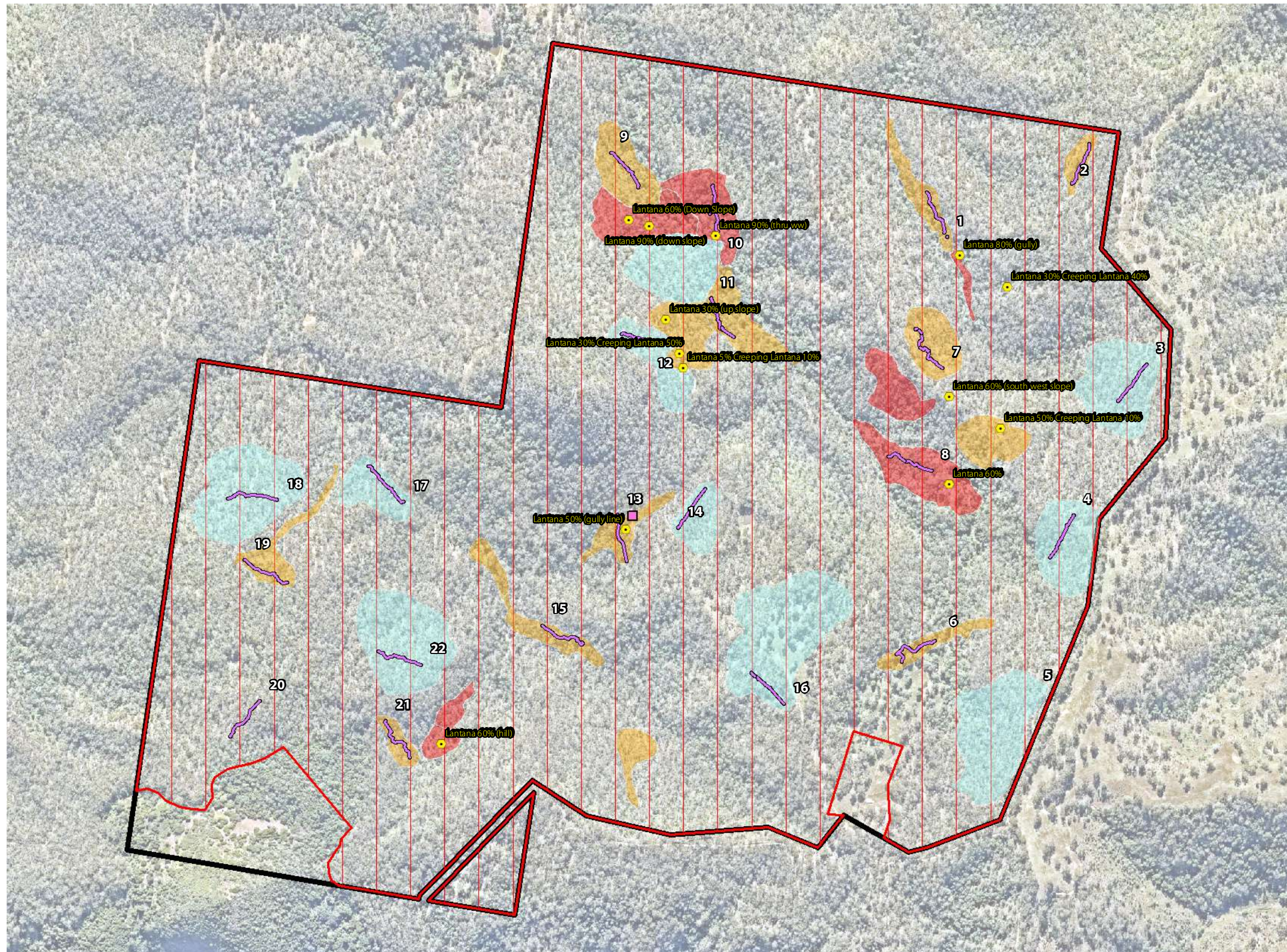
Table 18: Non-native Koala Predator Survey Results Summary – Lyons

Camera	Survey Duration (nights)	Species	Detection	RAI
1	24	Nil	-	4.76
2	24	Nil	-	
3	24	Dog (<i>Canis familiaris</i>)	2	
4	24	Nil	-	
5	24	Dog (<i>Canis familiaris</i>)	5	
6	24	Dog (<i>Canis familiaris</i>)	1	
7	24	Nil	-	
Total	168		8	



Photo 2: Dog captured on Camera 5.

5. Non-native Plants and Predators



Legend

- Qld DCDB
- Offset site DCDB
- Offset area (250.84 ha)
- Scattered Weeds (Blue) - <20%
- Moderate Weed density (Orange) - 30% - 50%
- Major Weed density (Red) - >60%
- Dog Scat
- Weed Observation
- Weed transect

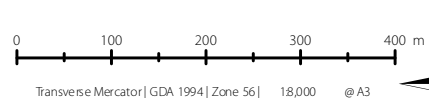


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Issue	Date	Description	Drawn	Checked
A	5/08/2021	Preliminary	LS	LT

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5. Appendices

Appendix A

Koala SAT Survey Data

Appendix B

Koala MHQA Data

Appendix C

Grey-headed Flying-fox Foraging Habitat Assessment Data

Appendix D

Weed Transect Data

Appendix E

Non-native Koala Predator Data

Appendix A

Koala SAT Survey Data

SAT Survey 1 (Lyons Property) 20.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	380	Nil
2	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
4	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	660	Nil
7	<i>Eucalyptus tereticornis</i>	Forest Red Gum	190	Nil
8	<i>Eucalyptus tereticornis</i>	Forest Red Gum	180	Nil
9	<i>Corymbia tessellaris</i>	Moreton Bay Ash	100	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
12	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	430	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
14	<i>Lophostemon confertus</i>	Brush Box	200	Nil
15	<i>Lophostemon confertus</i>	Brush Box	180	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	250	Nil
17	<i>Eucalyptus tereticornis</i>	Forest Red Gum	660	Nil
18	<i>Lophostemon confertus</i>	Brush Box	160	Nil
19	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	230	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	220	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
22	<i>Eucalyptus tereticornis</i>	Forest Red Gum	170	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
24	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
26	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	300	Nil
30	<i>Eucalyptus tereticornis</i>	Forest Red Gum	160	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0%
Koala Use (Based on East Coast Med-High)				Nil

SAT Survey 2 (Lyons Property) 20.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	290	Nil
2	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	230	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
4	<i>Corymbia citriodora</i>	Spotted Gum	240	Nil
5	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
6	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320	Nil
7	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
8	<i>Acacia disparrima</i>	Hickory Wattle	120	Nil
9	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	210	Nil
10	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	270	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
12	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360	Nil
13	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	330	Nil
14	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	140	Nil
15	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	290	Nil
16	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	230	Nil
17	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	260	Nil
18	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	350	Nil
19	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	130	Scats
20	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360	Scats
21	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	380	Nil
22	<i>Eucalyptus melanophloia</i>	Silver Leaf Ironbark	240	Nil
23	<i>Eucalyptus melanophloia</i>	Silver Leaf Ironbark	300	Nil
24	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
26	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	190	Nil
27	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	190	Nil
28	<i>Eucalyptus melanophloia</i>	Silver Leaf Ironbark	230	Nil
29	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	280	Nil
30	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320	Nil
Number of Trees with Koala Scats				2
Percentage of Trees with Koala Scats				6.667%
Koala Use (Based on East Coast Med-High)				Low

SAT Survey 3 (Lyons Property) 20.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus moluccana</i>	Gum Topped Box	590	Nil
2	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	600	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	620	Nil
4	<i>Eucalyptus tereticornis</i>	Forest Red Gum	240	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	220	Nil
7	<i>Eucalyptus moluccana</i>	Gum Topped Box	560	Nil
8	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	120	Nil
9	<i>Eucalyptus moluccana</i>	Gum Topped Box	100	Nil
10	<i>Eucalyptus moluccana</i>	Gum Topped Box	340	Nil
11	<i>Eucalyptus moluccana</i>	Gum Topped Box	240	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	420	Nil
14	<i>Eucalyptus tereticornis</i>	Forest Red Gum	260	Nil
15	<i>Eucalyptus moluccana</i>	Gum Topped Box	220	Nil
16	<i>Eucalyptus moluccana</i>	Gum Topped Box	420	Nil
17	<i>Eucalyptus tereticornis</i>	Forest Red Gum	200	Nil
18	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
20	<i>Eucalyptus moluccana</i>	Gum Topped Box	160	Nil
21	<i>Eucalyptus moluccana</i>	Gum Topped Box	420	Nil
22	<i>Eucalyptus moluccana</i>	Gum Topped Box	460	Nil
23	<i>Eucalyptus moluccana</i>	Gum Topped Box	160	Nil
24	<i>Eucalyptus moluccana</i>	Gum Topped Box	560	Nil
25	<i>Eucalyptus moluccana</i>	Gum Topped Box	140	Nil
26	<i>Eucalyptus moluccana</i>	Gum Topped Box	550	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
29	<i>Eucalyptus tereticornis</i>	Forest Red Gum	620	Nil
30	<i>Eucalyptus moluccana</i>	Gum Topped Box	260	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0.000%
Koala Use (Based on East Coast Med-High)				Nil

SAT Survey 4 (Lyons Property) 20.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus moluccana</i>	Gum Topped Box	720	Nil
2	<i>Eucalyptus moluccana</i>	Gum Topped Box	150	Nil
3	<i>Eucalyptus moluccana</i>	Gum Topped Box	310	Nil
4	<i>Eucalyptus moluccana</i>	Gum Topped Box	620	Nil
5	<i>Eucalyptus moluccana</i>	Gum Topped Box	540	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
7	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
8	<i>Corymbia citriodora</i>	Spotted Gum	240	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
10	<i>Eucalyptus moluccana</i>	Gum Topped Box	210	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
12	<i>Erythrina vespertilio</i>	Bat Wing Coral Tree	210	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
14	<i>Eucalyptus moluccana</i>	Gum Topped Box	490	Nil
15	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
17	<i>Eucalyptus moluccana</i>	Gum Topped Box	100	Scats
18	<i>Corymbia citriodora</i>	Spotted Gum	160	Scats
19	<i>Euclayptus crebra</i>	Narrow Leaf Ironbark	290	Nil
20	<i>Eucalyptus moluccana</i>	Gum Topped Box	200	Nil
21	<i>Eucalyptus moluccana</i>	Gum Topped Box	170	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	370	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	620	Nil
26	<i>Eucalyptus moluccana</i>	Gum Topped Box	120	Nil
27	<i>Eucalyptus moluccana</i>	Gum Topped Box	160	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	250	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
30	<i>Eucalyptus moluccana</i>	Gum Topped Box	100	Nil
Number of Trees with Koala Scats				2
Percentage of Trees with Koala Scats				6.667%
Koala Use (Based on East Coast Med-High)				Low

SAT Survey 5 (Lyons Property) 20.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Corymbia citriodora</i>	Spotted Gum	330	Nil
2	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
3	<i>Erythrina vespertilio</i>	Bat Wing Coral Tree	170	Nil
4	<i>Corymbia citriodora</i>	Spotted Gum	330	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	220	Nil
7	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480	Nil
8	<i>Corymbia citriodora</i>	Spotted Gum	770	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	270	Nil
11	<i>Acacia disparrima</i>	Hickory Wattle	220	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	290	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
15	<i>Corymbia citriodora</i>	Spotted Gum	110	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
18	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	610	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	590	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	310	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	710	Nil
26	<i>Corymbia citriodora</i>	Spotted Gum	220	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	490	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
30	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0.000%
Koala Use (Based on East Coast Med-High)				Nil

SAT Survey 6 (Lyons Property) 20.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Corymbia citriodora</i>	Spotted Gum	550	Nil
2	<i>Corymbia citriodora</i>	Spotted Gum	320	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
4	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	220	Scats
7	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
8	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
9	<i>Eucalyptus tereticornis</i>	Forest Red Gum	130	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	290	Nil
12	<i>Eucalyptus tereticornis</i>	Forest Red Gum	100	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
15	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	420	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	240	Nil
18	<i>Eucalyptus tereticornis</i>	Forest Red Gum	130	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	320	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	210	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
26	<i>Corymbia citriodora</i>	Spotted Gum	220	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
30	<i>Corymbia citriodora</i>	Spotted Gum	320	Nil
Number of Trees with Koala Scats				1
Percentage of Trees with Koala Scats				3.333%
Koala Use (Based on East Coast Med-High)				Low

SAT Survey 7 (Lyons Property) 22.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Corymbia citriodora</i>	Spotted Gum	280	Scats
2	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	450	Nil
4	<i>Corymbia intermedia</i>	Pink Bloodwood	170	Nil
5	<i>Eucalyptus melanophloia</i>	Silver Leaf Ironbark	110	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
7	<i>Corymbia citriodora</i>	Spotted Gum	510	Nil
8	<i>Corymbia intermedia</i>	Pink Bloodwood	230	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	270	Nil
10	<i>Eucalyptus melanophloia</i>	Silver Leaf Ironbark	200	Nil
11	<i>Allocasuarina torulosa</i>	Forest She Oak	140	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
13	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	260	Nil
14	<i>Eucalyptus tereticornis</i>	Forest Red Gum	220	Nil
15	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	280	Nil
16	<i>Acacia disparrima</i>	Hickory Wattle	120	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	110	Nil
18	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
19	<i>Eucalyptus melanophloia</i>	Silver Leaf Ironbark	150	Nil
20	<i>Eucalyptus tereticornis</i>	Forest Red Gum	130	Nil
21	<i>Eucalyptus tereticornis</i>	Forest Red Gum	240	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
23	<i>Eucalyptus tereticornis</i>	Forest Red Gum	220	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
25	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330	Nil
26	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	220	Nil
27	<i>Corymbia intermedia</i>	Pink Bloodwood	100	Nil
28	<i>Corymbia intermedia</i>	Pink Bloodwood	120	Nil
29	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	230	Nil
30	<i>Corymbia citriodora</i>	Spotted Gum	350	Nil
Number of Trees with Koala Scats				1
Percentage of Trees with Koala Scats				3.333%
Koala Use (Based on East Coast Med-High)				Low

SAT Survey 8 (Lyons Property) 22.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus tereticornis</i>	Forest Red Gum	360	Nil
2	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300	Nil
3	<i>Eucalyptus tereticornis</i>	Forest Red Gum	220	Nil
4	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	170	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
6	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	180	Nil
7	<i>Eucalyptus tereticornis</i>	Forest Red Gum	290	Nil
8	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	170	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	330	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
12	<i>Eucalyptus tereticornis</i>	Forest Red Gum	240	Nil
13	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	140	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	280	Nil
15	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	150	Nil
16	<i>Eucalyptus tereticornis</i>	Forest Red Gum	210	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
18	<i>Eucalyptus tereticornis</i>	Forest Red Gum	540	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
20	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	140	Nil
21	<i>Corymbia tessellaris</i>	Moreton Bay Ash	130	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
23	<i>Corymbia tessellaris</i>	Moreton Bay Ash	140	Nil
24	<i>Eucalyptus tereticornis</i>	Forest Red Gum	350	Nil
25	<i>Eucalyptus tereticornis</i>	Forest Red Gum	200	Nil
26	<i>Eucalyptus tereticornis</i>	Forest Red Gum	230	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	340	Nil
28	<i>Eucalyptus tereticornis</i>	Forest Red Gum	130	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	210	Nil
30	<i>Corymbia citriodora</i>	Spotted Gum	110	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0.000%
Koala Use (Based on East Coast Med-High)				Nil

SAT Survey 9 (Lyons Property) 22.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Corymbia citriodora</i>	Spotted Gum	210	Nil
2	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	260	Scats
4	<i>Corymbia citriodora</i>	Spotted Gum	430	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	280	Nil
6	<i>Corymbia tessellaris</i>	Moreton Bay Ash	180	Nil
7	<i>Corymbia citriodora</i>	Spotted Gum	210	Nil
8	<i>Corymbia citriodora</i>	Spotted Gum	300	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	300	Nil
10	<i>Eucalyptus melinophloia</i>	Silver Leaf Ironbark	140	Nil
11	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	130	Nil
12	<i>Corymbia tessellaris</i>	Moreton Bay Ash	150	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	300	Nil
15	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
17	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	200	Nil
18	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	350	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	370	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	280	Nil
21	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	210	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
23	<i>Eucalyptus tereticornis</i>	Forest Red Gum	200	Nil
24	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
26	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	140	Nil
27	<i>Corymbia intermedia</i>	Pink Bloodwood	110	Nil
28	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	260	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
30	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	190	Nil
Number of Trees with Koala Scats				1
Percentage of Trees with Koala Scats				3.333%
Koala Use (Based on East Coast Med-High)				Low

SAT Survey 10 (Lyons Property) 22.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	180	Nil
2	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	200	Nil
3	<i>Eucalyptus melinophloia</i>	Silver Leaf Ironbark	210	Nil
4	<i>Eucalyptus melinophloia</i>	Silver Leaf Ironbark	180	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	340	Nil
7	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300	Nil
8	<i>Corymbia citriodora</i>	Spotted Gum	300	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	360	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	380	Nil
14	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
15	<i>Eucalyptus tereticornis</i>	Forest Red Gum	230	Nil
16	<i>Eucalyptus tereticornis</i>	Forest Red Gum	220	Nil
17	<i>Eucalyptus tereticornis</i>	Forest Red Gum	290	Nil
18	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
21	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	120	Nil
22	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
23	<i>Eucalyptus tereticornis</i>	Forest Red Gum	220	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	460	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	280	Nil
26	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300	Nil
27	<i>Eucalyptus melinophloia</i>	Silver Leaf Ironbark	160	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	330	Nil
30	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0.000%
Koala Use (Based on East Coast Med-High)				Nil

SAT Survey 11 (Lyons Property) 22.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
2	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
3	<i>Eucalyptus melinophloia</i>	Silver Leaf Ironbark	140	Nil
4	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	220	Nil
7	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
8	<i>Lophostemon confertus</i>	Brush Box	210	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
12	<i>Eucalyptus melinophloia</i>	Silver Leaf Ironbark	110	Nil
13	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	200	Nil
14	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	220	Nil
15	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
18	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
19	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	340	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
21	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	400	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
26	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
30	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0.000%
Koala Use (Based on East Coast Med-High)				Nil

SAT Survey 12 (Lyons Property) 23.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	280	Nil
2	<i>Eucalyptus tereticornis</i>	Forest Red Gum	390	Nil
3	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	130	Nil
4	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	220	Nil
5	<i>Eucalyptus tereticornis</i>	Forest Red Gum	160	Nil
6	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	350	Nil
7	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320	Nil
8	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	280	Nil
9	<i>Eucalyptus tereticornis</i>	Forest Red Gum	140	Scats
10	<i>Eucalyptus tereticornis</i>	Forest Red Gum	220	Nil
11	<i>Eucalyptus tereticornis</i>	Forest Red Gum	260	Nil
12	<i>Eucalyptus tereticornis</i>	Forest Red Gum	220	Nil
13	<i>Eucalyptus tereticornis</i>	Forest Red Gum	220	Nil
14	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300	Nil
15	<i>Eucalyptus tereticornis</i>	Forest Red Gum	140	Nil
16	<i>Eucalyptus tereticornis</i>	Forest Red Gum	290	Nil
17	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320	Nil
18	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
19	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300	Nil
20	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	210	Nil
21	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	240	Nil
22	<i>Eucalyptus tereticornis</i>	Forest Red Gum	600	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	510	Scats
24	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	290	Nil
25	<i>Eucalyptus tereticornis</i>	Forest Red Gum	100	Nil
26	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	210	Nil
27	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	200	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	400	Scats
29	<i>Eucalyptus tereticornis</i>	Forest Red Gum	210	Nil
30	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
Number of Trees with Koala Scats				3
Percentage of Trees with Koala Scats				10.000%
Koala Use (Based on East Coast Med-High)				Low

SAT Survey 13 (Lyons Property) 23.04.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	350	Nil
2	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320	Nil
3	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	180	Nil
4	<i>Erythrina vespertilio</i>	Bat Wing Coral Tree	120	Nil
5	<i>Erythrina vespertilio</i>	Bat Wing Coral Tree	120	Nil
6	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	240	Nil
7	<i>Corymbia intermedia</i>	Pink Bloodwood	100	Nil
8	<i>Corymbia intermedia</i>	Pink Bloodwood	220	Nil
9	<i>Eucalyptus melionphloia</i>	Silver Leaf Ironbark	220	Scats
10	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320	Nil
11	<i>Corymbia tessellaris</i>	Moreton Bay Ash	190	Nil
12	<i>Corymbia tessellaris</i>	Moreton Bay Ash	130	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	340	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
15	<i>Eucalyptus melionphloia</i>	Silver Leaf Ironbark	230	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	280	Nil
17	<i>Corymbia tessellaris</i>	Moreton Bay Ash	230	Nil
18	<i>Corymbia intermedia</i>	Pink Bloodwood	350	Nil
19	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	400	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	320	Nil
21	<i>Corymbia tessellaris</i>	Moreton Bay Ash	240	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
24	<i>Eucalyptus melionphloia</i>	Silver Leaf Ironbark	140	Nil
25	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320	Nil
26	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	370	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	290	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	200	Scats
29	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480	Scats
30	<i>Corymbia tessellaris</i>	Moreton Bay Ash	140	Nil
Number of Trees with Koala Scats				3
Percentage of Trees with Koala Scats				10.000%
Koala Use (Based on East Coast Med-High)				Low

SAT Survey 14 (Lyons Property) 14.05.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus tereticornis</i>	Forest Red Gum	290	Nil
2	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
3	<i>Lophostemon confertus</i>	Brushbox	210	Nil
4	<i>Corymbia intermedia</i>	Pink Bloodwood	140	Y
5	<i>Lophostemon confertus</i>	Brushbox	140	Nil
6	<i>Allocasurina littoralis</i>	She-oak	130	Nil
7	<i>Lophostemon confertus</i>	Brushbox	200	Nil
8	<i>Corymbia citriodora</i>	Spotted Gum	400	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
10	<i>Lophostemon confertus</i>	Brushbox	150	Nil
11	<i>Acacia disparrima</i>	Hickory wattle	130	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
14	<i>Lophostemon confertus</i>	Brushbox	240	Nil
15	<i>Lophostemon confertus</i>	Brushbox	150	Nil
16	<i>Lophostemon confertus</i>	Brushbox	160	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
18	<i>Lophostemon confertus</i>	Brushbox	160	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
20	<i>Corymbia tessallaris</i>	Moreton Bay Ash	290	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
22	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330	Nil
23	<i>Lophostemon confertus</i>	Brushbox	360	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	240	Nil
25	<i>Eucalyptus tereticornis</i>	Forest Red Gum	180	Nil
26	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	400	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
30	<i>Eucalyptus tereticornis</i>	Forest Red Gum	280	Nil
Number of Trees with Koala Scats				1
Percentage of Trees with Koala Scats				3.333%
Koala Use (Based on East Coast Med-High)				Low

SAT Survey 15 (Lyons Property) 14.05.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	200	Nil
2	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	100	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
4	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	300	Nil
5	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	130	Nil
6	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	320	Nil
7	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
8	<i>Corymbia tessallaris</i>	Moreton Bay Ash	110	Nil
9	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	220	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
15	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	300	Nil
17	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	220	Nil
18	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	450	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	220	Nil
20	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	250	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	330	Nil
22	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	300	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	310	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	210	Nil
26	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	220	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	220	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
30	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	200	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0.000%
Koala Use (Based on East Coast Med-High)				Nil

SAT Survey 16 (Lyons Property) 14.05.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Corymbia citriodora</i>	Spotted Gum	280	Nil
2	<i>Corymbia citriodora</i>	Spotted Gum	450	Nil
3	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	240	Nil
4	<i>Corymbia citriodora</i>	Spotted Gum	310	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	270	Nil
7	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	370	Nil
8	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	250	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	350	Nil
11	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	490	Nil
12	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	140	Nil
13	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	240	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	250	Nil
15	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	420	Nil
16	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	350	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	270	Nil
18	<i>Eucalyptus tereticornis</i>	Forest Red Gum	210	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	270	Nil
20	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	260	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
26	<i>Corymbia citriodora</i>	Spotted Gum	300	Nil
27	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	370	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	330	Nil
30	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	240	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0.000%
Koala Use (Based on East Coast Med-High)				Nil

SAT Survey 17 (Lyons Property) 14.05.2021

Tree Number	Species	Common Name	DBH (mm)	Scats Recorded
1	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
2	<i>Corymbia tessallaris</i>	Moreton Bay Ash	130	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
4	<i>Corymbia tessallaris</i>	Moreton Bay Ash	180	Nil
5	<i>Corymbia tessallaris</i>	Moreton Bay Ash	110	Nil
6	<i>Corymbia tessallaris</i>	Moreton Bay Ash	230	Nil
7	<i>Corymbia citriodora</i>	Spotted Gum	210	Nil
8	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	310	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	350	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
13	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	230	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	270	Nil
15	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
17	<i>Corymbia tessallaris</i>	Moreton Bay Ash	130	Nil
18	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	290	Nil
20	<i>Eucalyptus melanophloia</i>	Silver-leaved Ironbark	300	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	380	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	250	Nil
23	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	300	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	240	Nil
25	<i>Corymbia tessallaris</i>	Moreton Bay Ash	160	Nil
26	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	250	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	110	Nil
28	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	120	Nil
29	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	120	Nil
30	<i>Corymbia citriodora</i>	Spotted Gum	290	Nil
Number of Trees with Koala Scats				0
Percentage of Trees with Koala Scats				0.000%
Koala Use (Based on East Coast Med-High)				Nil

Appendix B

Koala MHQA Data

Habitat Quality Site Assessment Template.....

PLEASE NOTE - YELLOW INDICATES AN AUTO POPULATED FIELD

For all environmental offset applications you must:

- Complete form (Environmental Offsets Delivery Form 1– Notice of Election and Advanced Offsets Details)
- Complete any other forms relevant to your application
- Provide the mandatory supporting information identified on the forms as being required to accompany your application

This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site.
Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part C - Site Data

Property	Lyons	Date	
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
1		12.8.20	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum WGS 84 GDA 94	0m Mark	Zone	Easting	Northing
	<input type="checkbox"/>	50m Mark	Zone	Easting
<input type="checkbox"/>				
Plot bearing			Recorders	DH and LC

Site description and Location (including details of discrete polygons within the assessment unit)

T7 - top of hill in landzone 8

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species		6	
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Acacia sp.</i>	Common Name	
Scientific Name	<i>Brachychiton populneus</i>	Common Name	Kurrajong
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	Soap Tree
Scientific Name	<i>Eucalyptus melinophloia</i>	Common Name	Silver-leaved Ironbark
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species		2	
Scientific Name	<i>Solanum sp.</i>	Common Name	
Scientific Name	<i>Gahnia aspera</i>	Common Name	Rough Saw Sedge
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species		2	
Scientific Name	<i>Aristida leptopoda</i>	Common Name	White Speargrass
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species		11	
Scientific Name	<i>Lomandra longifolia</i>	Common Name	
Scientific Name	<i>Clematicissus opaca</i>	Common Name	Grape Vine
Scientific Name	<i>Plectranthus sp.</i>	Common Name	
Scientific Name	<i>Sida cordifolia</i>	Common Name	Flannel Weed
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax-lily
Scientific Name	<i>Smilax australis</i>	Common Name	Barbed Wire Vine
Scientific Name	<i>Blechnum neohallandicum</i>	Common Name	Prickly Rasp Fern
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry
Scientific Name	<i>Goodenia rotundifolia</i>	Common Name	Star Goodenia
Scientific Name	<i>Xerochrysum viscosum</i>	Common Name	Native Daisy
Scientific Name	<i>Drynaria rigidula</i>	Common Name	Basket Fern
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot		5.00%	
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Opuntia sp.</i>	Common Name	Prickly Pear
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	717.00			
1	5.00	26		
2	10.00	27		
3	6.30	28		
4	3.50	29		
5	5.50	30		
6	4.30	31		
7	0.50	32		
8	6.00	33		
9	0.80	34		
10	3.00	35		
11	7.00	36		
12	3.20	37		
13	7.00	38		
14	0.60	39		
15	9.00	40		
16		41		
17		42		
18		43		
19		44		
20		45		
21		46		
22		47		
23		48		
24		49		
25		50		

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	5.00%	20.00%	10.00%	10.00%	10.00%
Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	30.00%	25.00%	10.00%	40.00%	30.00%	27.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	490	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	0	Number of large non eucalypt trees:	0
Total Number Large Trees:			

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	14.00	Emergent:
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Number of ecologically dominant layer species regenerating:	67
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Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	35.90%	Sub-canopy:	48.20%	Emergent:
Shrub canopy cover %	3.70%				

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION					
SCORE					

DOES THIS ASSESSMENT UNIT ALSO CONTAIN A SPECIES HABITAT REQUIREMENT.

YES PLEASE COMPLETE SPECIES HABITAT INDEX DETAILS BELOW AND THEN ATTACH LANDSCAPE PHOTOS AND SUBMIT AS DIRECTED

NO PLEASE ATTACH LANDSCAPE PHOTOS BELOW AND SUBMIT AS DIRECTED

Part K - Species Habitat Attributes

Species Habitat Attributes

No	Species Name	CommonName	NCA Status	Attributes	Threats to species	Quality and availability of food and foraging habitat	Quality and availability of shelter	Species mobility capacity	Role of site location to overall population
1				Description					
				Score					
2				Description					
				Score					
3				Description					
				Score					
4				Description					
				Score					
5				Description					
				Score					
6				Description					
				Score					
7				Description					
				Score					
8				Description					
				Score					
9				Description					
				Score					
10				Description					
				Score					
				Maximum Score					

Habitat Quality Site Assessment Template.....

PLEASE NOTE - YELLOW INDICATES AN AUTO POPULATED FIELD

For all environmental offset applications you must:

- Complete form (Environmental Offsets Delivery Form 1– Notice of Election and Advanced Offsets Details)
- Complete any other forms relevant to your application
- Provide the mandatory supporting information identified on the forms as being required to accompany your application

This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site. Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Case reference		Project Name	
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Part B – Nominated Approach (FOR IMPACT SITE ONLY)

Please Select Your Nominated approach: Rapid approach Standard Approach

ii) Standard Assessment (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Lyons	Date	
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
2		12.9-10.17	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum WGS 84 GDA 94	<input type="checkbox"/>	0m Mark	Zone	Easting	Northing
	<input type="checkbox"/>	50m Mark	Zone	Easting	Northing
Plot bearing			Recorders		

Site description and Location (including details of discrete polygons within the assessment unit)

Transect 2 - 12.9-10.17a. Waterway vegetation consistant with RE12.9-10.17a.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species		14	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name	<i>Lophostemon confertus</i>	Common Name	Brush Box
Scientific Name	<i>Corymbia tessellaris</i>	Common Name	Moreton Bay Ash
Scientific Name	<i>Angophora subvalentina</i>	Common Name	Broad-leaved Apple
Scientific Name	<i>Corymbia intermedia</i>	Common Name	Pink Bloodwood
Scientific Name	<i>Acacia disparimma</i>	Common Name	Hickory Wattle
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	Forest Red Gum
Scientific Name	<i>Acacia fimbriata</i>	Common Name	Fringed Wattle
Scientific Name	<i>Allocasuarina torulosa</i>	Common Name	Forest She Oak
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	Soap Tree
Scientific Name	<i>Erythrina vespertilio</i>	Common Name	Batwing Coral Tree
Scientific Name	<i>Jagera pseudorhus</i>	Common Name	Foambark
Scientific Name	<i>Ficus rubiginosa</i>	Common Name	Rusty Fig

Shrub species richness:			
Total number of species		2	
Scientific Name	<i>Citrus sp.</i>	Common Name	
Scientific Name	<i>Dodonaea viscosa</i>	Common Name	Hop Bush
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species		4	
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass
Scientific Name	<i>Aristida calycina</i>	Common Name	Dark Aristida
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species		11	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry
Scientific Name	<i>Lomandra longifolia</i>	Common Name	Mat Rush
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax-Lily
Scientific Name	<i>Glycine sp.</i>	Common Name	Small Glycine
Scientific Name	<i>Clematicissus opaca</i>	Common Name	Forest Grape
Scientific Name	<i>Desmodium sp.</i>	Common Name	
Scientific Name	<i>Labelia purpurescens</i>	Common Name	White Root
Scientific Name	<i>Doodia aspera</i>	Common Name	Prickly Rasp Fern
Scientific Name	<i>Smilax australis</i>	Common Name	Barbed Wire Vine
Scientific Name	<i>Cassytha pubescens</i>	Common Name	Devils Twine
Scientific Name	<i>Adiantum sp.</i>	Common Name	Maidenhair Fern

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot			
		15.00%	
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion
Scientific Name	<i>Melinis repens</i>	Common Name	Red Natal
Scientific Name	<i>Ageratina riparia</i>	Common Name	Mist Flower
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	49.00		
1	3.40	26	
2	1.50	27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	10.00%	20.00%	15.00%	5.00%	11.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	80.00%	70.00%	60.00%	40.00%	50.00%	60.00%

Part H - Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	430	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	3	Number of large non eucalypt trees:	0
Total Number Large Trees:	3		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	14.00	Emergent:

Number of ecologically dominant layer species regenerating:	60
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Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	66.20%	Sub-canopy:	52.90%	Emergent:
Shrub canopy cover %	12.30%				

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION					
SCORE					

DOES THIS ASSESSMENT UNIT ALSO CONTAIN A SPECIES HABITAT REQUIREMENT.

YES PLEASE COMPLETE SPECIES HABITAT INDEX DETAILS BELOW AND THEN ATTACH LANDSCAPE PHOTOS AND SUBMIT AS DIRECTED

NO PLEASE ATTACH LANDSCAPE PHOTOS BELOW AND SUBMIT AS DIRECTED

Part K - Species Habitat Attributes

Species Habitat Attributes									
No	Species Name	CommonName	NCA Status	Attributes	Threats to species	Quality and availability of food and foraging habitat	Quality and availability of shelter	Species mobility capacity	Role of site location to overall population
1				Description					
				Score					
2				Description					
				Score					
3				Description					
				Score					
4				Description					
				Score					
5				Description					
				Score					
6				Description					
				Score					
7				Description					
				Score					
8				Description					
				Score					
9				Description					
				Score					
10				Description					
				Score					
				Maximum Score					

Habitat Quality Site Assessment Template.....

PLEASE NOTE - YELLOW INDICATES AN AUTO POPULATED FIELD

For all environmental offset applications you must:

- Complete form (Environmental Offsets Delivery Form 1– Notice of Election and Advanced Offsets Details)
- Complete any other forms relevant to your application
- Provide the mandatory supporting information identified on the forms as being required to accompany your application

This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site. Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Case reference		Project Name
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Part B – Nominated Approach (FOR IMPACT SITE ONLY)

Please Select Your Nominated approach: Rapid approach Standard Approach

ii) Standard Assessment (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Lyons	Date	
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
3		12.9-10.3	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum WGS 84 GDA 94	<input type="checkbox"/>	0m Mark	Zone	Easting	Northing
	<input type="checkbox"/>	50m Mark	Zone	Easting	Northing
Plot bearing			Recorders		

Site description and Location (including details of discrete polygons within the assessment unit)

Transect 6 - Mapped 12.9-10.2/12.9-10.7. Species consistent with 12.9-10.3

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species		8	
Scientific Name	<i>Eucalyptus moluccana</i>	Common Name	Gum-topped Box
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	Forest Red Gum
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Eucalyptus melinophloia</i>	Common Name	Silver-leaved Ironbark
Scientific Name	<i>Lophostemon confertus</i>	Common Name	Brush Box
Scientific Name	<i>Acacia disparimma</i>	Common Name	Hickory Wattle
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name	<i>Angophera subvalentina</i>	Common Name	Broad-leaved Apple
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species		3	
Scientific Name		Common Name	Slender Wattle
Scientific Name		Common Name	Sally Wattle
Scientific Name		Common Name	White Cedar
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species		6	
Scientific Name	<i>Aristida sp.</i>	Common Name	
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass
Scientific Name	<i>Panicum sp.</i>	Common Name	
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass
Scientific Name	<i>Themeda triandra</i>	Common Name	Kangaroo Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species		9	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax-Lily
Scientific Name	<i>Cassytha pubescens</i>	Common Name	Devils Twine
Scientific Name	<i>Eremophila debilis</i>	Common Name	Winter Apple
Scientific Name	<i>Chrysocephalum apiculatum</i>	Common Name	Yellow Buttons
Scientific Name	<i>Wahlenbergia sp.</i>	Common Name	
Scientific Name	<i>Glycine sp.</i>	Common Name	Small Glycine
Scientific Name	<i>Plectranthus sp.</i>	Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot			
		45,00%	
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Opuntia sp.</i>	Common Name	Prickly Pear
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion
Scientific Name	<i>Jacaranda mimosifolia</i>	Common Name	Jacaranda
Scientific Name	<i>Sporobolus sp.</i>	Common Name	Rats Tail Grass
Scientific Name	<i>Melinis repens</i>	Common Name	Red Natal Grass
Scientific Name	<i>Bidens pilosa</i>	Common Name	Cobblers Peg
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):			
		141.00	
1	5.00	26	
2	4.30	27	
3	4.80	28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	

12		37
13		38
14		39
15		40
16		41
17		42
18		43
19		44
20		45
21		46
22		47
23		48
24		49
25		50

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	15.00%	10.00%	5.00%	5.00%	5.00%	8.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	75.00%	85.00%	80.00%	85.00%	75.00%	80.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	450	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	12	Number of large non eucalypt trees:	0
Total Number Large Trees:	12		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	13.00	Emergent:	
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Number of ecologically dominant layer species regenerating:	50
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Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	86.40%	Sub-canopy:	23.40%	Emergent:	
Shrub canopy cover %	11.50%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION					
SCORE					

DOES THIS ASSESSMENT UNIT ALSO CONTAIN A SPECIES HABITAT REQUIREMENT.

YES PLEASE COMPLETE SPECIES HABITAT INDEX DETAILS BELOW AND THEN ATTACH LANDSCAPE PHOTOS AND SUBMIT AS DIRECTED

NO PLEASE ATTACH LANDSCAPE PHOTOS BELOW AND SUBMIT AS DIRECTED

Part K - Species Habitat Attributes

Species Habitat Attributes									
No	Species Name	CommonName	NCA Status	Attributes	Threats to species	Quality and availability of food and foraging habitat	Quality and availability of shelter	Species mobility capacity	Role of site location to overall population
1				Description					
				Score					
2				Description					
				Score					
3				Description					
				Score					
4				Description					
				Score					
5				Description					
				Score					
6				Description					
				Score					
7				Description					
				Score					
8				Description					
				Score					
9				Description					
				Score					
10				Description					
				Score					
Maximum Score									

Habitat Quality Site Assessment Template.....

PLEASE NOTE - YELLOW INDICATES AN AUTO POPULATED FIELD

For all environmental offset applications you must:

- Complete form (Environmental Offsets Delivery Form 1– Notice of Election and Advanced Offsets Details)
- Complete any other forms relevant to your application
- Provide the mandatory supporting information identified on the forms as being required to accompany your application

This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site.
Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative	
Case reference	Project Name

Part B – Nominated Approach (FOR IMPACT SITE ONLY)

Please Select Your Nominated approach: Rapid approach Standard Approach

ii) Standard Assessment (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Lyons	Date	
Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
4		12.9-10.7	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum: WGS 84 GDA 94	<input type="checkbox"/>	0m Mark	Zone	Easting	Northing
	<input type="checkbox"/>	50m Mark	Zone	Easting	Northing
Plot bearing			Recorders		

Site description and Location (including details of discrete polygons within the assessment unit)

Transect 8 - Mapped RE12.9-10.2/12.9-10.7 in upper catchment. Transect 9 - Gully line vegetation

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species			11
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	Forest Red Gum
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Brachychiton populneus</i>	Common Name	Kurrajong
Scientific Name	<i>Acacia disparimma</i>	Common Name	Hickory Wattle
Scientific Name	<i>Eucalyptus siderophloia</i>	Common Name	Grey Ironbark
Scientific Name	<i>Corymbia intermedia</i>	Common Name	Pink Bloodwood
Scientific Name	<i>Lophostemon confertus</i>	Common Name	Brush Box
Scientific Name	<i>Allocasuarina torulosa</i>	Common Name	Forest She Oak
Scientific Name	<i>Jagera pseudorhus</i>	Common Name	Foam Bark
Scientific Name	<i>Mallotus philippensis</i>	Common Name	Red Kamala
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum

Shrub species richness:			
Total number of species			3
Scientific Name	<i>Jacksonia scoparia</i>	Common Name	Dogwood
Scientific Name	<i>Grewia retusifolia</i>	Common Name	Dogs Balls
Scientific Name	<i>Acacia elongata</i>	Common Name	Slender Wattle
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species			8
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name	<i>Aristida sp.</i>	Common Name	
Scientific Name	<i>Eragrostis brownii</i>	Common Name	Browns Love Grass
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass
Scientific Name	<i>Themeda triandra</i>	Common Name	Kangaroo Grass
Scientific Name	<i>Chloris sp.</i>	Common Name	Windmill Grass
Scientific Name	<i>Aristida calycina</i>	Common Name	Dark Aristida
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass

Forbs and others (non grass ground) species richness:			
Total number of species			10
Scientific Name	<i>Chrysocephalum apiculatum</i>	Common Name	Yellow Buttons
Scientific Name	<i>Sida cordifolia</i>	Common Name	Flannel Weed
Scientific Name	<i>Smilax australis</i>	Common Name	Barbed Wire Vine
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax-lily
Scientific Name	<i>Adiantum sp.</i>	Common Name	Maidenhair Fern
Scientific Name	<i>Nephrolepis cordifolia</i>	Common Name	Fishbone Fern
Scientific Name	<i>Lamandra longifolia</i>	Common Name	Mat Rush
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat berry
Scientific Name	<i>Chrysocephalum apiculatum</i>	Common Name	Yellow Buttons
Scientific Name	<i>Gymnostachys anceps</i>	Common Name	Settlers Flax
Scientific Name	<i>Drynaria sp.</i>	Common Name	Basket Fern

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot			
			32.50%
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Opuntia sp.</i>	Common Name	Prickly Pear
Scientific Name	<i>Senecio madagascariensis</i>	Common Name	Fireweed
Scientific Name	<i>Melinis repens</i>	Common Name	Red Natal Grass
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	296.50	
1	3.50	26
2	2.00	27
3	0.60	28
4	8.00	29
5	6.00	30
6	8.00	31
7	10.00	32
8	1.20	33
9	20.00	34
10		35
11		36
12		37
13		38
14		39
15		40
16		41
17		42
18		43
19		44
20		45
21		46
22		47
23		48
24		49
25		50

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	30.00%	25.00%	50.00%	30.00%	35.00%	34.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	37.50%	52.50%	25.00%	45.00%	30.00%	38.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	390	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	7	Number of large non eucalypt trees:	1
Total Number Large Trees:	8		

Median Tree Canopy Height Measurements	Canopy:	23.00	Sub-canopy:	16.00	Emergent:
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Number of ecologically dominant layer species regenerating:	7
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Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	59.70%	Sub-canopy:	37.10%	Emergent:
Shrub canopy cover %	14.20%				

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION					
SCORE					

DOES THIS ASSESSMENT UNIT ALSO CONTAIN A SPECIES HABITAT REQUIREMENT.

YES PLEASE COMPLETE SPECIES HABITAT INDEX DETAILS BELOW AND THEN ATTACH LANDSCAPE PHOTOS AND SUBMIT AS DIRECTED

NO PLEASE ATTACH LANDSCAPE PHOTOS BELOW AND SUBMIT AS DIRECTED

Part K - Species Habitat Attributes

Species Habitat Attributes									
No	Species Name	CommonName	NCA Status	Attributes	Threats to species	Quality and availability of food and foraging	Quality and availability of shelter	Species mobility capacity	Role of site location to overall
1				Description					
				Score					
2				Description					
				Score					
3				Description					
				Score					
4				Description					
				Score					
5				Description					
				Score					
6				Description					
				Score					
7				Description					
				Score					
8				Description					
				Score					
9				Description					
				Score					
10				Description					
				Score					
Maximum Score									

Habitat Quality Site Assessment Template.....

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This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site.
Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Case reference	Project Name
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Part B – Nominated Approach (FOR IMPACT SITE ONLY)

Please Select Your Nominated approach: Rapid approach Standard Approach

ii) **Standard Assessment** (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Lyons	Date	
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
5		12.9-10.2	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum WGS 84 GDA 94	<input type="checkbox"/>	0m Mark	Zone	Easting	Northing
	<input type="checkbox"/>	50m Mark	Zone	Easting	Northing
Plot bearing			Recorders		

Site description and Location (including details of discrete polygons within the assessment unit)

Transect 5 - Mapped RE12.9-10.2/RE12.9-10.7. Elements of both Res but most representative of RE12.9-10.2. Transect 4 - Mapped RE12.9-10.7/RE12.9-10.3/RE12.9-10.17. Transect 3 - Mapped RE12.9-10.2/RE12.9-10.17a/RE12.9-10.7/RE12.9-10.3. Transect 1 - Mapped RE12.9-10.2/RE12.9-10.7

Tree species richness:				
Total number of species			10	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum	
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark	
Scientific Name	<i>Acacia disparimma</i>	Common Name	Hickory Wattle	
Scientific Name	<i>Brachychiton sp.</i>	Common Name		
Scientific Name	<i>Petalostigma pubescens</i>	Common Name	Quinine Bush	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum	
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark	
Scientific Name	<i>Acacia disparimma</i>	Common Name	Hickory Wattle	
Scientific Name	<i>Eucalyptus molucana</i>	Common Name	Gum-topped Box	
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	Forest Red Gum	
Scientific Name	<i>Allocasuarina littoralis</i>	Common Name	Black Sheoak	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum	
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark	
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	Forest Red Gum	
Scientific Name	<i>Acacia disparimma</i>	Common Name	Hickory Wattle	
Scientific Name	<i>Eucalyptus melanophloia</i>	Common Name	Silver-leaf Ironbark	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum	
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark	
Scientific Name	<i>Corymbia tessellaris</i>	Common Name	Moreton Bay Ash	
Scientific Name	<i>Brachychiton sp.</i>	Common Name		

Shrub species richness:				
Total number of species			7	
Scientific Name	<i>Jacksonia scoparia</i>	Common Name	Dogwood	
Scientific Name	<i>Ficus coronata</i>	Common Name	Sand Paper Fig	
Scientific Name	<i>Acacia elongata</i>	Common Name	Slender Wattle	
Scientific Name	<i>Acacia fimbriata</i>	Common Name	Fringed Wattle	
Scientific Name	<i>Acacia melanoxylon</i>	Common Name	Sally Wattle	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	Soap Tree	
Scientific Name	<i>Acacia melanoxylon</i>	Common Name	Sally Wattle	
Scientific Name	<i>Acacia fimbriata</i>	Common Name	Fringed Wattle	
Scientific Name	<i>Breynia oblongifolia</i>	Common Name	Coffee Bush	
Scientific Name		Common Name		
Scientific Name		Common Name		

Grass species richness:				
Total number of species			12	
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass	
Scientific Name	<i>Aristida calycina</i>	Common Name	Dark Aristida	
Scientific Name	<i>Panicum sp.</i>	Common Name		
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass	
Scientific Name	<i>Aristida calycina</i>	Common Name	Dark Aristida	
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass	
Scientific Name	<i>Sporobolus creber</i>	Common Name	Slender Rats Tail Grass	
Scientific Name	<i>Themeda triandra</i>	Common Name	Kangaroo Grass	
Scientific Name	<i>Xanthorrhoea</i>	Common Name	Grass Tree	
Scientific Name	<i>Pristida sp.</i>	Common Name		
Scientific Name	<i>Aristida calycina</i>	Common Name	Dark Aristida	
Scientific Name	<i>Chloris sp.</i>	Common Name	Windmill Grass	
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass	
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass	
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass	
Scientific Name	<i>Eragrostis brownii</i>	Common Name	Browns Love Grass	
Scientific Name	<i>Aristida calycina</i>	Common Name	Dark Aristida	
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass	
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass	
Scientific Name	<i>Themeda triandra</i>	Common Name	Kangaroo Grass	
Scientific Name	<i>Eragrostis brownii</i>	Common Name	Browns Love Grass	

Forbs and others (non grass ground) species richness:				
Total number of species			13	
Scientific Name	<i>Lomandra longifolia</i>	Common Name	Mat Rush	
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax-lily	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry	
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax-lily	
Scientific Name	<i>Lomandra longifolia</i>	Common Name	Mat Rush	
Scientific Name	<i>Gahnia aspera</i>	Common Name	Rough Saw Sedge	
Scientific Name	<i>Hardenbergia violacea</i>	Common Name	Native Sarsparilla	
Scientific Name	<i>Goodenia rotundifolia</i>	Common Name	Star Goodenia	
Scientific Name	<i>Glossocardia bidens</i>	Common Name	Native Cobbler Peg	
Scientific Name	<i>Glycine sp.</i>	Common Name		
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry	
Scientific Name	<i>Lobelia purpurescens</i>	Common Name	White Root	
Scientific Name	<i>Cyperus gracilis</i>	Common Name	Slender Flat Sedge	
Scientific Name	<i>Hardenbergia violacea</i>	Common Name	Native Sarsparilla	
Scientific Name	<i>Desmodium sp.</i>	Common Name		
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax-lily	
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax-lily	
Scientific Name	<i>Lomandra multiflora</i>	Common Name	Many-flowered Mat Rush	
Scientific Name	<i>Plectranthus sp.</i>	Common Name		

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	12.50%		
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Conyza bonariensis</i>	Common Name	Flaxleaf Fleabane
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion
Scientific Name	<i>Opuntia sp.</i>	Common Name	Prickly Pear
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Oxalis sp.</i>	Common Name	Wood Sorrel
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Opuntia sp.</i>	Common Name	Prickly Pear
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion
Scientific Name	<i>Senecio madagascariensis</i>	Common Name	Fireweed

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	470.50			
1	4.00	26	6.60	
2	3.80	27	10.00	
3	4.50	28	12.00	
4	3.60	29	14.50	
5	2.70	30	3.20	
6	8.00	31	0.50	
7	0.50	32	8.30	
8	2.00	33	0.60	
9	10.00	34	8.00	
10	3.50	35	0.80	
11	5.00	36	0.60	
12	0.50	37	1.00	
13	1.30	38	3.00	
14	0.50	39	9.00	
15	2.50	40		
16	14.00	41		
17	6.30	42		
18	4.50	43		
19	4.20	44		
20	10.00	45		
21	6.00	46		
22	0.50	47		
23	0.50	48		
24	8.50	49		
25	3.20	50		

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	11.25%	11.25%	28.75%	8.75%	11.25%	14.25%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	50.00%	50.00%	51.25%	57.50%	58.75%	53.50%

Part H - Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	380	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	6	Number of large non eucalypt trees:	0
Total Number Large Trees:	6		

Median Tree Canopy Height Measurements	Canopy:	19.50	Sub-canopy:	11.50	Emergent:
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Number of ecologically dominant layer species regenerating:	69
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Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	84.86%	Sub-canopy:	25.35%	Emergent:
Shrub canopy cover %	6.78%				

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION					
SCORE					

DOES THIS ASSESSMENT UNIT ALSO CONTAIN A SPECIES HABITAT REQUIREMENT.

YES PLEASE COMPLETE SPECIES HABITAT INDEX DETAILS BELOW AND THEN ATTACH LANDSCAPE PHOTOS AND SUBMIT AS DIRECTED

NO PLEASE ATTACH LANDSCAPE PHOTOS BELOW AND SUBMIT AS DIRECTED

Part K - Species Habitat Attributes

Species Habitat Attributes									
No	Species Name	CommonName	NCA Status	Attributes	Threats to species	Quality and availability of food and foraging habitat	Quality and availability of shelter	Species mobility capacity	Role of site location to overall population
1				Description					
				Score					
2				Description					
				Score					
3				Description					
				Score					
4				Description					
				Score					
5				Description					
				Score					
6				Description					
				Score					
7				Description					
				Score					
8				Description					
				Score					
9				Description					
				Score					
10				Description					
				Score					
				Maximum Score					

Habitat Quality Site Assessment Template.....

PLEASE NOTE - YELLOW INDICATES AN AUTO POPULATED FIELD

For all environmental offset applications you must:

- Complete form (Environmental Offsets Delivery Form 1– Notice of Election and Advanced Offsets Details)
- Complete any other forms relevant to your application
- Provide the mandatory supporting information identified on the forms as being required to accompany your application

This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site.
Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Job Number		Project Name	Lyons
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Part B - Site Data

Property	Lyons	Date	20/02/2020
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
1		12.8.20	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Site description and Location (including details of discrete polygons within the assessment unit)

T2 - Rocky steep slope, NE facing

Part C - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	6		
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name	<i>Brachychiton sp.</i>	Common Name	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Corymbia tessellaris</i>	Common Name	Moreton Bay Ash
Scientific Name	<i>Ficus rubiginosa</i>	Common Name	Rusty Fig
Scientific Name	<i>Acacia shirleyi</i>	Common Name	Lancewood
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	4		
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	Soap Tree
Scientific Name	<i>Acacia shirleyi</i>	Common Name	Lancewood
Scientific Name	<i>Brachychiton sp.</i>	Common Name	
Scientific Name	<i>Ficus coronata</i>	Common Name	Sand Paper Fig
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	<i>Eragrostis brownii</i>	Common Name	Browns Love Grass
Scientific Name	<i>Entolasia stricta</i>	Common Name	Wiry Panic
Scientific Name	<i>Themeda triandra</i>	Common Name	Kangaroo Grass
Scientific Name	<i>Aristida latifolia</i>	Common Name	Feathertop Wiregrass
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass
Scientific Name	<i>Dionella caerulea</i>	Common Name	Blue Flax Lily
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry
Scientific Name	<i>Drynaria rigidula</i>	Common Name	Basket Fern
Scientific Name	<i>Cheilanthes distans</i>	Common Name	Bristle Cloak Fern
Scientific Name	<i>Lomandra multiflora</i>	Common Name	Many-flowered Mat Rush
Scientific Name	<i>Plectranthus parviflorus</i>	Common Name	
Scientific Name	<i>Cyperus gracilis</i>	Common Name	Slender Flat Sedge
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot			
		80.00%	
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion Flower
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Opuntia sp.</i>	Common Name	Prickly Pear
Scientific Name	<i>Tradescantia zebrina</i>	Common Name	Wandering Jew

Scientific Name	<i>Oxalis corniculata</i>	Common Name	Creeping Woodsorrel
Scientific Name	<i>Physalis angulata</i>	Common Name	Goose Berry
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Coarse Woody Debris (Meters):	737.00		
1	3.20	26	
2	11.00	27	
3	13.00	28	
4	4.10	29	
5	2.00	30	
6	2.00	31	
7	3.50	32	
8	5.00	33	
9	3.10	34	
10	4.00	35	
11	2.50	36	

12	0.50	37
13	0.80	38
14	0.50	39
15	10.00	40
16	8.50	41
17		42
18		43
19		44
20		45
21		46
22		47
23		48
24		49
25		50

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	15.00%	15.00%	5.00%	5.00%	10.00%	10.00%
Native other grass	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Native forbs and other species	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Native shrubs	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non-native grass	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non native forbs and shrubs	40.00%	50.00%	40.00%	15.00%	50.00%	39.00%
Litter	15.00%	15.00%	30.00%	25.00%	15.00%	20.00%
Rock	10.00%	10.00%	10.00%		20.00%	12.50%
Bare Ground	20.00%	10.00%	15.00%	55.00%	5.00%	21.00%
Cryptogram	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Part G - Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	490	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	1	Number of large non eucalypt trees:	1
Total Number Large Trees:	2		

C. citro	530
Bratchychiton	400

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	11.00	Emergent:	
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Percentage of ecologically dominant layer species regenerating:	75
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Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	76.80	Sub-canopy:	31.10	Emergent:	
Shrub canopy cover %	1.50					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1	0.00	8.40	8.40	T2	6.20	12.50	6.30
T1	8.40	16.80	8.40	T2	21.20	24.00	2.80
T1	29.60	36.80	7.20	T2	31.10	32.60	1.50
T1	39.30	47.30	8.00	T2	36.00	38.90	2.90
T1	52.00	59.40	7.40	T2	46.00	50.00	4.00
T1	59.40	65.40	6.00	T2	54.80	59.40	4.60
T1	66.00	70.40	4.40	T2	65.00	68.30	3.30
T1	70.40	75.20	4.80	T2	82.40	86.60	4.20
T1	76.00	89.30	13.30	T2	98.50	100.00	1.50
T1	91.10	100.00	8.90	T2			

T1				T2			
T1				T2			
T1				T2			
T1				T2			
T1				T2			

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub	71.00	72.50	1.50	Shrub			
Shrub				Shrub			
Shrub				Shrub			
Shrub				Shrub			

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

(FORM COMPLETE) Please save and forward completed form/s together with Offsets Delivery Form 5 that can be accessed here: [QLD Environmental Offsets](#)

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Habitat Quality Site Assessment Template.....

PLEASE NOTE - YELLOW INDICATES AN AUTO POPULATED FIELD

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This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site.
Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Job Number		Project Name	Lyons
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Part B - Site Data

Property	Lyons	Date	21/02/2020
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
2		12.9-10.17	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Site description and Location (including details of discrete polygons within the assessment unit)

T5 - remnant, gully vegetation (12.9-10.17a)

Part C - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	9		
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Lophosteman confertus</i>	Common Name	Brush Box
Scientific Name	<i>Erythrina vespertilio</i>	Common Name	Bat's Wing Coral Tree
Scientific Name	<i>Allocasuarina torulosa</i>	Common Name	Forest She-oak
Scientific Name	<i>Angophora woodsiana</i>	Common Name	Rough-barked Apple
Scientific Name	<i>Angophora subvalentina</i>	Common Name	Broad-leaved Apple
Scientific Name	<i>Acacia disparrima</i>	Common Name	Hickory Wattle
Scientific Name	<i>Corymbia intermedia</i>	Common Name	Pink Bloodwood
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	Soap Tree
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	3		
Scientific Name	<i>Mallotus phillipensis</i>	Common Name	Red Kamala
Scientific Name	<i>Grewia latifolia</i>	Common Name	Dogs Balls
Scientific Name	<i>Xanthorrhoea</i>	Common Name	Grass Tree
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	5		
Scientific Name	<i>Aristida latifolia</i>	Common Name	Feathertop Wiregrass
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass
Scientific Name	<i>Themeda triandra</i>	Common Name	Kangaroo Grass
Scientific Name	<i>Sporobolus creber</i>	Common Name	Native Rparamatta Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	11		
Scientific Name	<i>Lomandra longifolia</i>	Common Name	Mat Rush
Scientific Name	<i>Glycine sp.</i>	Common Name	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry
Scientific Name	<i>Cheilanthes distans</i>	Common Name	Bristle Cloak fern
Scientific Name	<i>Labellia purpurescens</i>	Common Name	White Root
Scientific Name	<i>Murdannia graminea</i>	Common Name	Slug Herb
Scientific Name	<i>Lomandra multiflora</i>	Common Name	Many Flowered Mat Rush
Scientific Name	<i>Phyllanthus microcladus</i>	Common Name	Small Leaved Phyllanthus
Scientific Name	<i>Dionella caerulea</i>	Common Name	Blue Flax Lily
Scientific Name	<i>Eremophila debilis</i>	Common Name	Winter Apple
Scientific Name	<i>Desmodium rhytidophyllum</i>	Common Name	Hairy Desmodium

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	75.00%
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Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Tradescantia fluminensis</i>	Common Name	Wandering Jew
Scientific Name	<i>Cida cordifolia</i>	Common Name	Flannel Weed
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion Flower
Scientific Name	<i>Oxalis corniculata</i>	Common Name	Creeping Woodsorrel
Scientific Name	<i>Rubus sp.</i>	Common Name	Wild Raspberry
Scientific Name	<i>Dichondra repens</i>	Common Name	Kidney Weed
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	923.00		
1	5.50	26	6.50
2	6.50	27	4.30
3	1.40	28	
4	1.20	29	
5	1.00	30	
6	0.60	31	
7	2.50	32	
8	8.00	33	
9	10.00	34	
10	1.40	35	
11	4.80	36	

12	13.50	37
13	0.50	38
14	7.50	39
15	1.40	40
16	1.80	41
17	1.60	42
18	0.50	43
19	0.60	44
20	5.20	45
21	0.70	46
22	0.90	47
23	1.20	48
24	1.40	49
25	1.80	50

Part F - Native perennial grass cover, organic litter: (* provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	0.00%	0.00%	10.00%	10.00%	0.00%	4.00%
Native other grass	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Native forbs and other species	0.00%	0.00%	5.00%	10.00%	0.00%	0.00%
Native shrubs	0.00%	0.00%	0.00%	3.00%	0.00%	0.00%
Non-native grass	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non native forbs and shrubs	35.00%	70.00%	5.00%	10.00%	100.00%	44.00%
Litter	65.00%	30.00%	80.00%	67.00%	0.00%	48.40%
Rock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Bare Ground	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cryptogram	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Part G - Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	430	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	4	Number of large non eucalypt trees:	1
Total Number Large Trees:	5		

L. confertus	450	560
C. inter	490	
C. citro	680	

Median Tree Canopy Height Measurements	Canopy:	23.00	Sub-canopy:	14.00	Emergent:	
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Percentage of ecologically dominant layer species regenerating:	75
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Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	59.80	Sub-canopy:	28.70	Emergent:	
Shrub canopy cover %	8.20					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1	0.00	2.10	2.10	T2	10.00	17.50	7.50
T1	6.20	15.90	9.70	T2	57.60	60.80	3.20
T1	17.70	22.10	4.40	T2	61.20	64.50	3.30
T1	22.10	31.40	9.30	T2	71.20	75.90	4.70
T1	33.00	42.40	9.40	T2	77.60	82.60	5.00
T1	42.40	50.50	8.10	T2	90.30	95.30	5.00
T1	50.50	54.90	4.40	T2			
T1	87.60	95.30	7.70	T2			
T1	95.30	100.00	4.70	T2			

T1				T2			
T1				T2			
T1				T2			
T1				T2			
T1				T2			
T1				T2			

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub	2.60	3.40	0.80	Shrub	62.90	64.00	1.10
Shrub	8.00	8.70	0.70	Shrub	64.00	65.00	1.00
Shrub	29.10	30.00	0.90	Shrub	91.60	92.60	1.00
Shrub	52.00	53.10	1.10	Shrub	95.30	96.90	1.60

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

(FORM COMPLETE)

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Habitat Quality Site Assessment Template.....

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Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Job Number		Project Name	Lyons
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Part B - Site Data

Property	Lyons	Date	20/02/2020
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
3		12.9-10.3	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Site description and Location (including details of discrete polygons within the assessment unit)

T3 - Steep SW facing slope

Part C - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species		7	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	Forest Red Gum
Scientific Name	<i>Lophostemon confertus</i>	Common Name	Brush Box
Scientific Name	<i>Allocasuarina torulosa</i>	Common Name	Forest She Oak
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name	<i>Acacia disparimma</i>	Common Name	Hickory Wattle
Scientific Name	<i>Eucalyptus malucana</i>	Common Name	Gum-topped Box
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species		4	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	Soap Tree
Scientific Name	<i>Allocasuarina torulosa</i>	Common Name	Forest She Oak
Scientific Name	<i>Jacksonia scoparia</i>	Common Name	Dogwood
Scientific Name	<i>Acacia salicina</i>	Common Name	Sally Wattle
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species		5	
Scientific Name	<i>Agrostis avenacea</i>	Common Name	Fairy Grass
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name	<i>Themeda triandra</i>	Common Name	Kangaroo Grass
Scientific Name	<i>Aristida latifolia</i>	Common Name	Feathertop Wiregrass
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species		10	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry
Scientific Name	<i>Glycine sp.</i>	Common Name	
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax Lily
Scientific Name	<i>Lomandra longifolia</i>	Common Name	Mat Rush
Scientific Name	<i>Plectranthus parviflorus</i>	Common Name	Little Spurflower
Scientific Name	<i>Glossocarsia bidens</i>	Common Name	Native Cobbler Peg
Scientific Name	<i>Adiantum sp.</i>	Common Name	Maidenhair Fern
Scientific Name	<i>Ereophila debilis</i>	Common Name	Winter Apple
Scientific Name	<i>Lobelia purpurescens</i>	Common Name	White Root
Scientific Name	<i>Hybanthus stellarioidea</i>	Common Name	Spade Flower

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot			
		30.00%	
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Opuntia sp.</i>	Common Name	Prickly Pear

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Coarse Woody Debris (Meters):		124.00	
1	3.40	26	
2	1.00	27	
3	1.00	28	
4	3.00	29	
5	4.00	30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	

12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	10.00%	15.00%	15.00%	10.00%	5.00%	11.00%
Native other grass	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Native forbs and other species	0.00%	0.00%	0.00%	5.00%	5.00%	2.00%
Native shrubs	0.00%		0.00%	0.00%	0.00%	0.00%
Non-native grass	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non native forbs and shrubs	15.00%	10.00%	15.00%	5.00%	10.00%	11.00%
Litter	65.00%	65.00%	65.00%	70.00%	75.00%	68.00%
Rock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Bare Ground	10.00%	10.00%	5.00%	10.00%	5.00%	8.00%
Cryptogram	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Part G - Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	450	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	6	Number of large non eucalypt trees:	0
Total Number Large Trees:	6		

E. tere	520	510	510
E. moll	540	460	490
C. citro			

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	11.00	Emergent:	
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Percentage of ecologically dominant layer species regenerating:	75
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Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	55.20	Sub-canopy:	34.80	Emergent:	
Shrub canopy cover %	10.30					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1	0.00	3.40	3.40	T2	4.90	6.10	1.20
T1	3.40	6.30	2.90	T2	10.70	17.10	6.40
T1	10.90	18.50	7.60	T2	23.50	27.60	4.10
T1	21.50	26.00	4.50	T2	30.40	35.00	4.60
T1	28.00	35.00	7.00	T2	44.10	47.30	3.20
T1	43.70	51.00	7.30	T2	52.00	56.20	4.20
T1	56.80	61.20	4.40	T2	80.40	84.00	3.60
T1	63.10	68.00	4.90	T2	85.00	92.50	7.50
T1	71.30	76.00	4.70	T2			
T1	79.00	84.00	5.00	T2			

T1	92.50	96.00	3.50	T2			
T1				T2			
T1				T2			
T1				T2			

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub	21.40	22.20	0.80	Shrub	63.40	64.30	0.90
Shrub	25.00	26.50	1.50	Shrub	66.30	68.00	1.70
Shrub	30.60	31.60	1.00	Shrub	83.30	84.90	1.60
Shrub	52.00	53.00	1.00	Shrub	95.00	96.80	1.80

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

(FORM COMPLETE)

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[QLD Environmental Offsets](#)

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Habitat Quality Site Assessment Template.....

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- Complete any other forms relevant to your application
- Provide the mandatory supporting information identified on the forms as being required to accompany your application

This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site.
Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Job Number		Project Name	Lyons
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Part B - Site Data

Property	Lyons	Date	20/02/2020
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6		12.9-10.2	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Site description and Location (including details of discrete polygons within the assessment unit)

T1 - Non remnant. Patchy vegetation with open grazing area. Some exposed rocks

Part C - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	9		
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name	<i>Corymbia intermedia</i>	Common Name	Pink Bloodwood
Scientific Name	<i>Lophostemon confertus</i>	Common Name	Brush Box
Scientific Name	<i>Corymbia tessellaris</i>	Common Name	Moreton Bay Ash
Scientific Name	<i>Angophera subvalentina</i>	Common Name	Broad-leaved Apple
Scientific Name	<i>Acacia disparimma</i>	Common Name	Hickory Wattle
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	Forest Red Gum
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Brachychiton sp.</i>	Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	3		
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	Soap Tree
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name	<i>Melia azedarach</i>	Common Name	White Cedar
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	7		
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass
Scientific Name	<i>Aristida calycina</i>	Common Name	Dark Aristida
Scientific Name	<i>Aristida latifolia</i>	Common Name	Feathertop Wiregrass
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass
Scientific Name	<i>Agrostis avenacea</i>	Common Name	Fairy Grass
Scientific Name	<i>Panicum decompositum</i>	Common Name	Native Millet
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	5		
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry
Scientific Name	<i>Glycine sp.</i>	Common Name	
Scientific Name	<i>Cyperus gracilis</i>	Common Name	Slender Flat Sedge
Scientific Name	<i>Lomandra longifolia</i>	Common Name	Mat Rush
Scientific Name	<i>Phyllanthus sp.</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot			
		45.00%	
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana
Scientific Name	<i>Sida cordifolia</i>	Common Name	Flannel Weed
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Opuntia sp.</i>	Common Name	Pear Tree
Scientific Name	<i>Gomphocarpus physocarpus</i>	Common Name	Balloon Cotton

Scientific Name	<i>Setaria sp.</i>	Common Name	Rats Tail Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Coarse Woody Debris (Meters):	451.00		
1	7.20	26	
2	6.00	27	
3	8.10	28	
4	4.20	29	
5	0.60	30	
6	1.00	31	
7	1.00	32	
8	7.50	33	
9	3.00	34	
10	6.50	35	
11		36	

12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (* provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	10.00%	0.00%	10.00%	0.00%	5.00%	5.00%
Native other grass	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Native forbs and other species	0.00%	5.00%	0.00%	10.00%	0.00%	3.00%
Native shrubs	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non-native grass	5.00%	0.00%	0.00%	35.00%	80.00%	24.00%
Non native forbs and shrubs	5.00%	90.00%	10.00%	30.00%	10.00%	29.00%
Litter	75.00%	0.00%	5.00%	10.00%	0.00%	18.00%
Rock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Bare Ground	5.00%	5.00%	70.00%	15.00%	5.00%	20.00%
Cryptogram	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Part G - Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	380	Non- Eucalypt Large tree DBH benchmark used:	200
Number of large eucalypt trees:	3	Number of large non eucalypt trees:	0
Total Number Large Trees:	3		

C. citro	380
C. inter	610
E. crebra	670

Median Tree Canopy Height Measurements	Canopy:	23.00	Sub-canopy:	12.00	Emergent:	
--	---------	-------	-------------	-------	-----------	--

Percentage of ecologically dominant layer species regenerating:	30
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Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	32.60	Sub-canopy:	31.40	Emergent:	
Shrub canopy cover %	3.90					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1	0.00	1.60	1.60	T2	13.40	17.50	4.10
T1	13.00	29.70	16.70	T2	17.50	21.20	3.70
T1	31.40	32.60	1.20	T2	55.60	61.50	5.90
T1	49.30	55.60	6.30	T2	63.00	69.50	6.50
T1	61.50	68.30	6.80	T2	82.80	89.00	6.20
T1				T2	95.00	100.00	5.00
T1				T2			
T1				T2			
T1				T2			
T1				T2			

T1				T2			
T1				T2			
T1				T2			
T1				T2			
T1				T2			

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub	0.90	1.70	0.80	Shrub	95.00	95.80	0.80
Shrub	26.30	27.10	0.80	Shrub			
Shrub	27.40	28.40	1.00	Shrub			
Shrub	29.80	30.30	0.50	Shrub			

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

(FORM COMPLETE)

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Habitat Quality Site Assessment Template.....

PLEASE NOTE - YELLOW INDICATES AN AUTO POPULATED FIELD

For all environmental offset applications you must:

- Complete form (Environmental Offsets Delivery Form 1– Notice of Election and Advanced Offsets Details)
- Complete any other forms relevant to your application
- Provide the mandatory supporting information identified on the forms as being required to accompany your application

This form is useful for undertaking a **habitat quality analysis** of an impact and/or offset/advanced offset site.
Please note that this form should be completed individually for each assessment unit under consideration.

Is this Assessment for: An Impact Site An Offset Site an Advanced Offset Site

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Job Number		Project Name	Lyons
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Part B - Site Data

Property	Lyons	Date	22/02/2020
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Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6		12.9-10.2	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Site description and Location (including details of discrete polygons within the assessment unit)

T4 - non remnant 12.9-10.2, uphill of dam, scattered trees/grazing area

Part C - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species		3	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	Spotted Gum
Scientific Name	<i>Eucalyptus molucana</i>	Common Name	Gum-topped Box
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species		1	
Scientific Name	<i>Eucalyptus crebra</i>	Common Name	Narrow-leaved Grey Ironbark
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species		4	
Scientific Name	<i>Aristida latifolia</i>	Common Name	Feathertop Wire Grass
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	Barbed Wire Grass
Scientific Name	<i>Heteropogon contortus</i>	Common Name	Black Spear Grass
Scientific Name	<i>Imperata cylindrica</i>	Common Name	Blady Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species		8	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	Wombat Berry
Scientific Name	<i>Glycine sp.</i>	Common Name	
Scientific Name	<i>Dianella caerulea</i>	Common Name	Blue Flax Lily
Scientific Name	<i>Fimbristylis sp.</i>	Common Name	Fringe Rush
Scientific Name		Common Name	Arrow leaf
Scientific Name	<i>Glossocarsia bidens</i>	Common Name	Native Cobbler Peg
Scientific Name	<i>Phyllanthus sp.</i>	Common Name	
Scientific Name	<i>Eremophilla debilis</i>	Common Name	Winter Apple
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot		20.00%	
Scientific Name	<i>Lantana camara</i>	Common Name	Lantana

Scientific Name	<i>Opuntia sp.</i>	Common Name	Prickly Pear
Scientific Name	<i>Lantana montevidensis</i>	Common Name	Creeping Lantana
Scientific Name	<i>Heliotropium amplexicaule</i>	Common Name	Blue Heliotrope
Scientific Name	<i>Passiflora suberosa</i>	Common Name	Corky Passion Flower
Scientific Name	<i>Cyperus polystachyos</i>	Common Name	Bunchy Sedge
Scientific Name	<i>Cida cordifolia</i>	Common Name	Flannel Weed
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Coarse Woody Debris (Meters):		157.00	
1	1.30	26	
2	0.70	27	
3	3.60	28	
4	10.10	29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	

T1				T2			
T1				T2			
T1				T2			
T1				T2			
T1				T2			
T1				T2			

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub	25.30	27.50	2.20	Shrub			
Shrub	80.60	81.60	1.00	Shrub			
Shrub				Shrub			
Shrub				Shrub			

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

(FORM COMPLETE)

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Appendix C

Grey-headed Flying-fox Foraging Habitat Assessment Data

Assessment Unit - Regional Ecosystem	AU 1 - REMNANT - 12.8.20						AU 2 - REMNANT - 12.9-10.17						AU 3 - REMNANT				
Site Reference	OUT OF (X/X)	Transect 7 comment	Score	Transect 2020 T2 comment	Score	Mean Score	OUT OF (X/X)	Transect 2 comment	Score	Transect 2020 T5 comment	Score	Mean Score	OUT OF (X/X)	Transect 6 comment	Score	Transect comment	
Vegetation Condition	20	cat B	20	cat B	20	20	20	cat B	20	cat B	20	20	20	20	cat B	20	cat B
Species Richness	20	6	10	6	10	10	20	15	20	9	20	20	20	20	8	20	7
Flower Score	10	0.60	8	0.28	2	5	10	0.29	5	0.30	5	5	5	10	0.47	8	0.42
Timing of Biological Shortages	10	all	10	all	10	10	10	all	10	all	10	10	10	10	all	10	all
Quality of Foraging Habitat	20	2	5	2	5	5	20	4	10	2	5	7.5	20	3	5	3	
Non-native Plant Cover	20	5.00%	10	80.00%	1	5.5	20	15.00%	10	75.00%	1	5.5	20	45.00%	5	30.00%	
Site Condition Score			63		48	55.5			75		61	68			68		
MAX Site Condition Score	X	X	100	X	100	100	X	X	100	X	100	100	X	X	100	X	
Site Condition Score - out of 4	X	X	2.52	X	1.92	2.22	X	X	3.00	X	2.44	2.72	X	X	2.72	X	
Size of patch	10		10		10	10	10		10		10	10	10		10		
Connectedness	10	5 active ca	6		6	6	10		6		6	6	10		6		
Context	10	35%	6		6	6	10		6		6	6	10		6		
Ecological Corridors	10	within	10		10	10	10		10		10	10	10		10		
Role of site location to species overall population in the sta	10	2 ≥ level 3 c	5		5	5	10		5		5	5	10		5		
Threats to the species	10	moderate	5		5	5	10		5		5	5	10		5		
Site Context Score			42		42	42			42		42	42			42		
MAX Site Context Score	X	X	60	X	60	60	X	X	60	X	60	60	X	X	60	X	
Site Context Score - out of 3	X	X	2.10	X	2.10	2.10	X	X	2.10	X	2.10	2.10	X	X	2.10	X	
GHFF Foraging Tree Density Canopy cover	10	0	0	20	2	1	10	16	2	27	4	3	10	46	4	46	
Species Stocking Rate Score			0		2	1			2		4	3			4		
MAX Species Stocking Rate Score	X	X	10	X	10	10	X	X	10	X	10	10	X	X	10	X	
Species Stocking Rate Score - out of 3	X		0.00		0.60	0.30	X		0.60		1.20	0.90	X		1.20		
Total			4.62		4.62	4.62			5.70		5.74	5.72			6.02		

	Assessment unit AU1	AU2	AU3	AU4	AU5	AU6	Total
Total quality score	4.62	5.72	5.96	5.50	5.19	5.06	
Assessment unit area	7.69	21.93	9.59	20.39	181.09	10.15	250.84076
Total offset area	250.84	250.84	250.84	250.84	250.84	250.84	
Size weighting	0.03	0.09	0.04	0.08	0.72	0.04	1
Area weighted score	0.14	0.50	0.23	0.45	3.75	0.20	5.2682486
Rounded Modified Quality Habitat Assessment Score							5
Assessment unit area within the 150 ha offset	7.69	13.25	0.00	20.39	97.30	11.39	150.01
Total offset area	150	150	150	150	150	150	
Size weighting	0.05	0.09	0.00	0.14	0.65	0.08	1.00

Area weighted score 0.24 0.51 0.00 0.75 3.37 0.38 **5.2401881**
 Rounded Modified Quality Habitat Assessment Score **5**

Flower **Timing of biological shortages** **Quality**

‡ mean of all Eucalyptus
 † Value of 0.65 given as species listed as important winter food
 * Assigned based on related species
 † middle of published range of Wt p*r

Transect	Wt p*r	Timing of biological shortages					Fruit industries Aug-Mar	Quality
		Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating and conception Dec-Mar	Migration paths All year		
AU1 7 <i>Eucalyptus crebra</i>	0.65 x					x		1
<i>Corymbia citriodora</i>	0.65 x		x			x	x	1
<i>Acacia sp.</i>	0							
<i>Brachychiton populneus</i>	0							
<i>Alphitonia excelsa</i>	0							
<i>Eucalyptus melanophloia</i> [†]	0.5 x		x	x	x	x	x	
	0.3	yes	yes	yes	yes	yes	yes	2

Transect 2020 T2	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating and conception Dec-Mar	Migration paths All year	Fruit industries Aug-Mar	Quality
AU1 <i>Eucalyptus crebra</i>	0.65 x					x		1
<i>Brachychiton sp.</i>	0							
<i>Corymbia citriodora</i>	0.65 x		x			x	x	1
<i>Corymbia tessellaris</i>	0.4			x	x	x	x	
<i>Ficus rubignosa</i>	0							
<i>Acacia shirleyi</i>	0							
	0.2833	yes	yes	yes	yes	yes	yes	2

Transect 2	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating and conception Dec-Mar	Migration paths All year	Fruit industries Aug-Mar	Quality
AU2 <i>Corymbia citriodora</i>	0.65 x		x			x	x	1
<i>Eucalyptus crebra</i>	0.65 x					x		1
<i>Lophostemon confertus</i>	0.46		x	x	x	x	x	
<i>Corymbia tessellaris</i>	0.4			x	x	x	x	
<i>Angophera subvalentina</i> *	0.38							
<i>Corymbia intermedia</i>	0.86							1
<i>Acacia disparimma</i>	0							
<i>Eucalyptus tereticornis</i>	0.65	x	x	x		x	x	1
<i>Acacia fimbriata</i>	0							
<i>Allocasuarina torulosa</i>	0							
<i>Alphitonia excelsa</i>	0							
<i>Erythrina vespertilio</i>	0							
<i>Jagera pseudorhus</i>	0							
<i>Ficus rubignosa</i>	0							
	0.2893	yes	yes	yes	yes	yes	yes	4

Transect 2020 T5	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating and conception Dec-Mar	Migration paths All year	Fruit industries Aug-Mar	Quality
AU2 <i>Corymbia citriodora</i>	0.65 x		x			x	x	1
<i>Lophostemon confertus</i>	0.46		x	x	x	x	x	
<i>Erythrina vespertilio</i>	0							

<i>Allocasuarina torulosa</i>	0							
<i>Angophora woodsiana</i> *	0.38							
<i>Angophora subvalentina</i>	0.38							
<i>Acacia disparrima</i>	0							
<i>Corymbia intermedia</i>	0.86		x	x	x	x		1
<i>Alphitonia excelsa</i>	0							

0.3033 yes yes yes yes yes yes 2

AU3 Transect 6

<i>Eucalyptus molucanna</i> ¹	0.5		x	x	x	x		
<i>Eucalyptus tereticornis</i>	0.65							1
<i>Corymbia citriodora</i>	0.65 x	x				x	x	1
<i>Eucalyptus melinophloia</i>	0.5 x	x	x	x	x	x	x	
<i>Lophostemon confertus</i>	0.46	x	x	x	x	x	x	
<i>Acacia disparimma</i>	0							
<i>Eucalyptus crebra</i>	0.65							1
<i>Angophora subvalentina</i>	0.38							

0.4738 yes yes yes yes yes yes 3

AU3 Transect 2020 T3

<i>Corymbia citriodora</i>	0.65 x	x				x	x	1
<i>Eucalyptus tereticornis</i>	0.65	x	x	x		x	x	1
<i>Lophostemon confertus</i>	0.46	x	x	x	x	x	x	
<i>Allocasuarina torulosa</i>	0							
<i>Eucalyptus crebra</i>	0.65 x					x		1
<i>Acacia disparimma</i>	0							
<i>Eucalyptus molucanna</i>	0.5		x	x	x	x	x	

0.4157 yes yes yes yes yes yes 3

AU4 Transect 8

<i>Eucalyptus tereticornis</i>	0.65	x	x	x		x	x	1
<i>Eucalyptus crebra</i>	0.65 x					x		1
<i>Corymbia citriodora</i>	0.65 x	x				x	x	1
<i>Brachychiton populneus</i>	0							
<i>Acacia disparimma</i>	0							
<i>Eucalyptus siderophloia</i>	0.81	x	x	x	x	x	x	1

0.46 yes yes yes yes yes yes 4

AU4 Transect 9

<i>Corymbia intermedia</i>	0.86		x	x	x	x		1
<i>Lophostemon confertus</i>	0.46	x	x	x	x	x		
<i>Allocasuarina torulosa</i>	0							
<i>Jagera pseudorhus</i>	0							
<i>Mallotus philippensis</i>	0							
<i>Corymbia citriodora</i>	0.65 x	x				x	x	1

0.3283 yes yes yes yes yes yes 2

AU5 Transect 1

<i>Corymbia citriodora</i>	0.65	x				x	x	1
<i>Eucalyptus crebra</i>	0.65					x		1
<i>Corymbia tessellaris</i>	0.4		x	x		x	x	
<i>Brachychiton sp.</i>	0							
0.425 yes yes yes yes yes yes 2								

AU5 Transect 3

<i>Corymbia citriodora</i>	0.65	x				x	x	1
<i>Eucalyptus crebra</i>	0.65					x		1
<i>Acacia disparimma</i>	0							
<i>Brachychiton sp.</i>	0							
<i>Petalostigma pubescens</i>	0							
0.1625 yes yes no no yes yes 2								

AU5 Transect 4

<i>Corymbia citriodora</i>	0.65	x				x	x	1
<i>Eucalyptus crebra</i>	0.65					x		1
<i>Acacia disparimma</i>	0							
<i>Eucalyptus molucanna</i>	0.5		x	x		x	x	
<i>Eucalyptus tereticornis</i>	0.65	x	x	x		x	x	1
<i>Allocasuarina littoralis</i>	0							
0.4083 yes yes yes yes yes yes 3								

AU5 Transect 5

<i>Corymbia citriodora</i>	0.65	x				x	x	1
<i>Eucalyptus crebra</i>	0.65					x		1
<i>Eucalyptus tereticornis</i>	0.65	x	x	x		x	x	1
<i>Acacia disparimma</i>	0							
<i>Eucalyptus melanophloia</i>	0.5	x	x	x	x	x	x	
0.49 yes yes yes yes yes yes 3								

AU6 Transect 2020 T1

<i>Eucalyptus crebra</i>	0.65	x				x		1
<i>Corymbia intermedia</i>	0.86			x	x	x	x	1
<i>Lophostemon confertus</i>	0.46	x	x	x		x	x	
<i>Corymbia tessellaris</i>	0.4		x	x		x	x	
<i>Angophera subvalentina</i>	0.38							
<i>Acacia disparimma</i>	0							
<i>Eucalyptus tereticornis</i>	0.65	x	x	x		x	x	1
<i>Corymbia citriodora</i>	0.65	x				x	x	1
<i>Brachychiton sp.</i>	0							
0.45 yes yes yes yes yes yes 2								

AU6	Transect 2020 T4							
<i>Corymbia citriodora</i>	0.65 x	x			x	x		1
<i>Eucalyptus molucanna</i>	0.5		x	x	x	x		
<i>Eucalyptus crebra</i>	0.65 x				x			1
	0.6 yes	yes	yes	yes	yes	yes		2

- 12.9-10.3		AU 4 - REMNANT - 12.9-10.7						AU 5 - REMNANT - 12.9-10.5										AU	
2020 T3	Mean Score	OUT OF (X/X)	Transect 8		Transect 9		Mean Score	OUT OF (X/X)	Transect 1		Transect 3		Transect 4		Transect 5		Mean Score	OUT OF (X/X)	Transect comment
Score			comment	Score	comment	Score			comment	comment	Score	comment	Score	comment	Score	comment			
20	20	20	cat B	20	cat B	20	20	20	cat B	20	cat B	20	cat B	20	cat B	20	20	20	Cat C
20	20	20	6	20	6	20	20	20	4	10	5	10	6	10	5	10	10	20	9
5	6.5	10	0.46	5	0.33	5	5	10	0.43	5	0.16	2	0.41	5	0.49	5	4.25	10	0.45
10	10	10	all	10	all	10	10	10	all	10	no Lact, no	7	all	10	all	10	9.25	10	all
5	5	20	4	10	2	5	7.5	20	2	5	2	5	3	5	3	5	5	20	2
5	5	20	20.00%	10	45.00%	5	7.5	20	10.00%	10	15.00%	10	15.00%	10	10.00%	10	10	20	45.00%
65	66.5			75		65	70			60		54		60		60	58.5		
100	100	X	X	100	X	100	100	X	X	100	X	100	X	100	X	100	100	X	X
2.60	2.66	X	X	3.00	X	2.60	2.80	X	X	2.40	X	2.16	X	2.40	X	2.40	2.34	X	X
10	10	10		10		10	10	10		10		10		10		10	10	10	
6	6	10		6		6	6	10		6		6		6		6	6	10	
6	6	10		6		6	6	10		6		6		6		6	6	10	
10	10	10		10		10	10	10		10		10		10		10	10	10	
5	5	10		5		5	5	10		5		5		5		5	5	10	
5	5	10		5		5	5	10		5		5		5		5	5	10	
42	42			42		42	42			42		42		42		42	42		
60	60	X	X	60	X	60	60	X	X	60	X	60	X	60	X	60	60	X	X
2.10	2.10	X	X	2.10	X	2.10	2.10	X	X	2.10	X	2.10	X	2.10	X	2.10	2.10	X	X
4	4	10	44	4	0	0	2	10	11	2	26	4	13	2	13	2	2.5	10	16
4	4			4		0	2			2		4		2		2	2.5		
10	10	X	X	10	X	10	10	X	X	10	X	10	X	10	X	10	30	X	X
1.20	1.20	X		1.20		0.00	0.60	X		0.60		1.20		0.60		0.60	0.75	X	
5.90	5.96			6.30		4.70	5.50			5.10		5.46		5.10		5.10	5.19		

6 - REGROWTH - 12.9-10.2

2020 T1	Transect 2020 T4		
Score	comment	Score	Mean Score
10	Cat C	10	10
20	3	5	12.5
5	0.60	8	6.5
10	all	10	10
5	2	5	5
5	20.00%	10	7.5
55		48	51.5
<i>100</i>	<i>X</i>	<i>100</i>	<i>100</i>
2.20	X	1.92	2.06
10		10	10
6		6	6
6		6	6
10		10	10
5		5	5
5		5	5
42		42	42
<i>60</i>	<i>X</i>	<i>60</i>	<i>60</i>
2.10	X	2.10	2.10

2	31.58	4	3
2		4	3
<i>10</i>	<i>X</i>	<i>10</i>	<i>10</i>
0.60		1.20	0.90

4.90	5.22	5.06
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Appendix D

Weed Transect Data

Lyons Property Ground Layer Transect (100M) 1 (22.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	3.00	<i>Lantana camara</i>	Lantana	3.00
3.00	3.50	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	0.50
3.50	6.00	Native Grasses	Native Grasses	2.50
6.00	15.00	<i>Lantana montevidensis</i>	Creeping Lantana	9.00
15.00	24.00	<i>Lantana camara</i>	Lantana	9.00
24.00	28.00	<i>Lantana montevidensis</i>	Creeping Lantana	4.00
28.00	30.00	Native Grasses	Native Grasses	2.00
30.00	40.00	<i>Lantana montevidensis</i>	Creeping Lantana	10.00
40.00	48.00	Native Grasses	Native Grasses	8.00
48.00	50.00	<i>Lantana camara</i>	Lantana	2.00
50.00	55.00	<i>Lantana montevidensis</i>	Creeping Lantana	5.00
55.00	58.00	<i>Lantana camara</i>	Lantana	3.00
58.00	65.00	<i>Lantana montevidensis</i>	Creeping Lantana	7.00
65.00	66.00	Bare Earth	Bare Earth	1.00
66.00	68.00	Leaf Litter	Leaf Litter	2.00
68.00	78.00	<i>Lantana montevidensis</i>	Creeping Lantana	10.00
78.00	80.00	Rock	Rock	2.00
80.00	85.00	Leaf Litter	Leaf Litter	5.00
85.00	90.00	<i>Lantana camara</i>	Lantana	5.00
90.00	93.00	Leaf Litter	Leaf Litter	3.00
93.00	100.00	<i>Lantana montevidensis</i>	Creeping Lantana	7.00
Native/bare cover				26
Total Exotic/weed cover				74
Weeds of National Significance cover				22

North



South



East



West



Lyons Property Ground Layer Transect (100M) 2 (22.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	4.00	<i>Lantana montevidensis</i>	Creeping Lantana	4.00
4.00	6.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
6.00	8.00	<i>Lantana camara</i>	Lantana	2.00
8.00	11.00	<i>Lantana montevidensis</i>	Creeping Lantana	3.00
11.00	13.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
13.00	19.00	<i>Lantana montevidensis</i>	Creeping Lantana	6.00
19.00	22.00	Native Grass	Native Grass	3.00
22.00	30.00	<i>Lantana montevidensis</i>	Creeping Lantana	8.00
30.00	32.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
32.00	33.00	<i>Lantana camara</i>	Lantana	1.00
33.00	40.00	<i>Heteropogon contortus</i>	Black Spear Grass	7.00
40.00	43.00	<i>Desmodium uncinatum</i>	Silver-leaf Desmodium	3.00
43.00	55.00	<i>Heteropogon contortus</i>	Black Spear Grass	12.00
55.00	60.00	Leaf Litter	Leaf Litter	5.00
60.00	62.00	Native Grass	Native Grass	2.00
62.00	65.00	<i>Eremophila debilis</i>	Winter Apple	3.00
65.00	100.00	<i>Heteropogon contortus</i>	Black Spear Grass	35.00

Native/bare cover	73
Total Exotic/weed cover	27
Weeds of National Significance cover	3

North



South



East



West



Lyons Property Ground Layer Transect (100M) 3 (22.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	11.00	<i>Heteropogon contortus</i>	Black Spear Grass	11.00
11.00	12.00	<i>Lantana montevidensis</i>	Creeping Lantana	1.00
12.00	16.00	<i>Lantana camara</i>	Lantana	4.00
16.00	19.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
19.00	21.00	<i>Lantana montevidensis</i>	Creeping Lantana	2.00
21.00	23.00	<i>Lantana camara</i>	Lantana	2.00
23.00	75.00	<i>Heteropogon contortus</i>	Black Spear Grass	52.00
75.00	80.00	<i>Lantana montevidensis</i>	Creeping Lantana	5.00
80.00	100.00	<i>Heteropogon contortus</i>	Black Spear Grass	20.00

Native/bare cover	86
Total Exotic/weed cover	14
Weeds of National Significance cover	6

North



South



East



West



Lyons Property Ground Layer Transect (100M) 4 (22.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	4.00	<i>Heteropogon contortus</i>	Black Spear Grass	4.00
4.00	6.00	<i>Lantana camara</i>	Lantana	2.00
6.00	8.00	<i>Lantana montevidensis</i>	Creeping Lantana	2.00
8.00	11.00	<i>Lantana camara</i>	Lantana	3.00
11.00	13.00	<i>Lantana montevidensis</i>	Creeping Lantana	2.00
13.00	17.00	<i>Heteropogon contortus</i>	Black Spear Grass	4.00
17.00	18.00	<i>Lantana camara</i>	Lantana	1.00
18.00	21.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
21.00	22.00	<i>Lantana camara</i>	Lantana	1.00
22.00	25.00	<i>Lantana montevidensis</i>	Creeping Lantana	3.00
25.00	28.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
28.00	30.00	<i>Lantana montevidensis</i>	Lantana	2.00
30.00	31.00	<i>Desmodium intortum</i>	Greenleaf Desmodium	1.00
31.00	33.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
33.00	35.00	Leaf Litter	Leaf Litter	2.00
35.00	36.00	<i>Desmodium intortum</i>	Greenleaf Desmodium	1.00
36.00	38.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
38.00	42.00	<i>Lantana montevidensis</i>	Creeping Lantana	4.00
42.00	43.00	<i>Lantana camara</i>	Lantana	1.00
43.00	49.00	<i>Heteropogon contortus</i>	Black Spear Grass	6.00
49.00	50.00	<i>Eremophila debilis</i>	Winter Apple	1.00
50.00	53.00	<i>Lantana montevidensis</i>	Creeping Lantana	3.00
53.00	55.00	Leaf Litter	Leaf Litter	2.00
55.00	60.00	<i>Heteropogon contortus</i>	Black Spear Grass	5.00
60.00	62.00	<i>Lantana montevidensis</i>	Creeping Lantana	2.00
62.00	65.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
65.00	74.00	<i>Lantana camara</i>	Lantana	9.00
74.00	80.00	<i>Lantana montevidensis</i>	Creeping Lantana	6.00
80.00	100.00	<i>Heteropogon contortus</i>	Black Spear Grass	20.00

Native/bare cover	57
Total Exotic/weed cover	43
Weeds of National Significance cover	19

North



South



East



West



Lyons Property Ground Layer Transect (100M) 5 (22.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	2.00	Exotic Forbs	Exotic Forbs	2.00
2.00	12.00	<i>Heteropogon contortus</i>	Black Spear Grass	10.00
12.00	13.00	<i>Eremophila debilis</i>	Winter Apple	1.00
13.00	20.00	<i>Heteropogon contortus</i>	Black Spear Grass	7.00
20.00	24.00	Lantana camara	Lantana	4.00
24.00	38.00	<i>Heteropogon contortus</i>	Black Spear Grass	14.00
38.00	39.00	Lantana camara	Lantana	1.00
39.00	42.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
42.00	44.00	Lantana montevidensis	Creeping Lantana	2.00
44.00	59.00	<i>Heteropogon contortus</i>	Black Spear Grass	15.00
59.00	60.00	Lantana camara	Lantana	1.00
60.00	64.00	<i>Heteropogon contortus</i>	Black Spear Grass	4.00
64.00	68.00	Melinis repens	Red Natal Grass	4.00
68.00	74.00	<i>Heteropogon contortus</i>	Black Spear Grass	6.00
74.00	75.00	Lantana camara	Lantana	1.00
75.00	78.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
78.00	81.00	Melinis repens	Red Natal Grass	3.00
81.00	83.00	Lantana montevidensis	Creeping Lantana	2.00
83.00	85.00	Leaf Litter	Leaf Litter	2.00
85.00	89.00	Lantana montevidensis	Creeping Lantana	4.00
89.00	90.00	<i>Heteropogon contortus</i>	Black Spear Grass	1.00
90.00	94.00	Leaf Litter	Leaf Litter	4.00
94.00	98.00	Lantana montevidensis	Creeping Lantana	4.00
98.00	99.00	Lantana camara	Lantana	1.00
99.00	100.00	<i>Heteropogon contortus</i>	Black Spear Grass	1.00

Native/bare cover	71
Total Exotic/weed cover	29
Weeds of National Significance cover	8

North



South



East



West



Lyons Property Ground Layer Transect (100M) 6 (22.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	2.00	Leaf Litter	Leaf Litter	2.00
2.00	3.00	<i>Imperata cylindrica</i>	Blady grass	1.00
3.00	9.00	Exotic forb	Exotic forb	6.00
9.00	11.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	2.00
11.00	13.00	Lantana camara	Lantana	2.00
13.00	15.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	2.00
15.00	18.00	Lantana camara	Lantana	3.00
18.00	22.00	Leaf Litter	Leaf Litter	4.00
22.00	26.00	Lantana camara	Lantana	4.00
26.00	29.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	3.00
29.00	30.00	Exotic forb	Exotic forb	1.00
30.00	33.00	<i>Cymbopogon refractus</i>	Barbed wire grass	3.00
33.00	35.00	Lantana camara	Lantana	2.00
35.00	40.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	5.00
40.00	45.00	Lantana camara	Lantana	5.00
45.00	47.00	<i>Adiantum atroviride</i>	Maidenhair Fern	2.00
47.00	50.00	Leaf Litter	Leaf Litter	3.00
50.00	54.00	Lantana camara	Lantana	4.00
54.00	56.00	Leaf Litter	Leaf Litter	2.00
56.00	66.00	Lantana camara	Lantana	10.00
66.00	73.00	<i>Adiantum atroviride</i>	Maidenhair Fern	7.00
73.00	78.00	Native grass	Native grass	5.00
78.00	85.00	Lantana camara	Lantana	7.00
85.00	100.00	Exotic forb	Exotic forb	15.00

Native/bare cover	41
Total Exotic/weed cover	59
Weeds of National Significance cover	37

North



South



East



West



Lyons Property Ground Layer Transect (100M) 7 (22.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	1.00	<i>Lantana montevidensis</i>	Creeping lantana	1.00
1.00	4.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
4.00	5.00	<i>Melinis repens</i>	Red Natal Grass	1.00
5.00	6.00	Bare ground	Bare ground	1.00
6.00	9.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
9.00	11.00	Leaf Litter	Leaf Litter	2.00
11.00	13.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
13.00	15.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
15.00	18.00	<i>Melinis repens</i>	Red Natal Grass	3.00
18.00	33.00	<i>Lantana montevidensis</i>	Creeping lantana	15.00
33.00	40.00	<i>Melinis repens</i>	Red Natal Grass	7.00
40.00	48.00	<i>Heteropogon contortus</i>	Black Spear Grass	8.00
48.00	53.00	<i>Lantana montevidensis</i>	Creeping lantana	5.00
53.00	56.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
56.00	57.00	<i>Lantana camara</i>	Lantana	1.00
57.00	68.00	<i>Lantana montevidensis</i>	Creeping lantana	11.00
68.00	70.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
70.00	77.00	<i>Lantana montevidensis</i>	Creeping lantana	7.00
77.00	84.00	<i>Heteropogon contortus</i>	Black Spear Grass	7.00
84.00	90.00	<i>Lantana montevidensis</i>	Creeping lantana	6.00
90.00	100.00	<i>Heteropogon contortus</i>	Black Spear Grass	10.00

Native/bare cover	41
Total Exotic/weed cover	59
Weeds of National Significance cover	1

North



South



East



West



Lyons Property Ground Layer Transect (100M) 8 (22.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	5.00	<i>Lantana camara</i>	Lantana	5.00
5.00	8.00	<i>Lantana montevidensis</i>	Creeping lantana	3.00
8.00	14.00	<i>Lantana camara</i>	Lantana	6.00
14.00	15.00	<i>Imperata cylindrica</i>	Blady grass	1.00
15.00	19.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
19.00	23.00	Exotic forb	Exotic forb	4.00
23.00	26.00	<i>Lantana camara</i>	Lantana	3.00
26.00	30.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
30.00	31.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	1.00
31.00	38.00	<i>Lantana montevidensis</i>	Creeping lantana	7.00
38.00	43.00	<i>Lantana camara</i>	Lantana	5.00
43.00	46.00	<i>Lantana montevidensis</i>	Creeping lantana	3.00
46.00	49.00	<i>Lantana camara</i>	Lantana	3.00
49.00	50.00	<i>Dianella caerulea</i>	Blue flax-lily	1.00
50.00	53.00	<i>Lantana camara</i>	Lantana	3.00
53.00	56.00	<i>Lantana montevidensis</i>	Creeping lantana	3.00
56.00	57.00	<i>Capillipedium parviflorum</i>	Scented-top Grass	1.00
57.00	68.00	<i>Lantana montevidensis</i>	Creeping lantana	11.00
68.00	100.00	<i>Lantana camara</i>	Lantana	32.00

Native/bare cover	4
Total Exotic/weed cover	96
Weeds of National Significance cover	57

North



South



East



West



Lyons Property Ground Layer Transect (100M) 9 (23.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	5.00	<i>Lantana montevidensis</i>	Creeping lantana	5.00
5.00	7.00	<i>Lantana camara</i>	Lantana	2.00
7.00	8.00	Leaf litter	Leaf litter	1.00
8.00	13.00	<i>Lantana montevidensis</i>	Creeping lantana	5.00
13.00	18.00	<i>Lantana camara</i>	Lantana	5.00
18.00	19.00	<i>Eustrephus latifolius</i>	Wombat berry	1.00
19.00	22.00	<i>Lantana camara</i>	Lantana	3.00
22.00	32.00	<i>Lantana montevidensis</i>	Creeping lantana	10.00
32.00	33.00	<i>Lantana camara</i>	Lantana	1.00
33.00	35.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
35.00	42.00	<i>Lantana camara</i>	Lantana	7.00
42.00	43.00	<i>Lantana montevidensis</i>	Creeping lantana	1.00
43.00	47.00	<i>Lantana camara</i>	Lantana	4.00
47.00	53.00	<i>Lantana montevidensis</i>	Creeping lantana	6.00
53.00	69.00	<i>Lantana camara</i>	Lantana	16.00
69.00	72.00	<i>Lantana montevidensis</i>	Creeping lantana	3.00
72.00	73.00	<i>Lantana camara</i>	Lantana	1.00
73.00	76.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	3.00
76.00	80.00	<i>Lantana camara</i>	Lantana	4.00
80.00	84.00	Leaf litter	Leaf litter	4.00
84.00	85.00	<i>Grewia latifolia</i>	Dogs balls	1.00
85.00	86.00	<i>Lantana montevidensis</i>	Creeping lantana	1.00
86.00	90.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
90.00	100.00	<i>Lantana camara</i>	Lantana	10.00

Native/bare cover	10
Total Exotic/weed cover	90
Weeds of National Significance cover	53

North



South



East



West



Lyons Property Ground Layer Transect (100M) 10 (23.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	4.00	<i>Lantana camara</i>	Lantana	4.00
4.00	5.00	Leaf litter	Leaf litter	1.00
5.00	23.00	<i>Lantana camara</i>	Lantana	18.00
23.00	24.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	1.00
24.00	28.00	Rock	Rock	4.00
28.00	50.00	<i>Lantana camara</i>	Lantana	22.00
50.00	51.00	<i>Lantana montevidensis</i>	Creeping lantana	1.00
51.00	54.00	<i>Lantana camara</i>	Lantana	3.00
54.00	58.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
58.00	60.00	<i>Lantana camara</i>	Lantana	2.00
60.00	67.00	<i>Lantana montevidensis</i>	Creeping lantana	7.00
67.00	69.00	<i>Lantana camara</i>	Lantana	2.00
69.00	71.00	Leaf litter	Leaf litter	2.00
71.00	78.00	<i>Lantana montevidensis</i>	Creeping lantana	7.00
78.00	85.00	<i>Lantana camara</i>	Lantana	7.00
85.00	87.00	Leaf litter	Leaf litter	2.00
87.00	100.00	<i>Lantana camara</i>	Lantana	13.00

Native/bare cover	10
Total Exotic/weed cover	90
Weeds of National Significance cover	71

North



South



East



West



Lyons Property Ground Layer Transect (100M) 11 (23.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	2.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
2.00	3.00	<i>Melinis repens</i>	Red Natal Grass	1.00
3.00	12.00	<i>Lantana montevidensis</i>	Creeping lantana	9.00
12.00	14.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
14.00	18.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
18.00	19.00	<i>Heteropogon contortus</i>	Black Spear Grass	1.00
19.00	20.00	<i>Lantana montevidensis</i>	Creeping lantana	1.00
20.00	24.00	<i>Heteropogon contortus</i>	Black Spear Grass	4.00
24.00	32.00	<i>Lantana camara</i>	Lantana	8.00
32.00	35.00	<i>Native grass</i>	Native grass	3.00
35.00	46.00	<i>Lantana montevidensis</i>	Creeping lantana	11.00
46.00	50.00	<i>Lantana camara</i>	Lantana	4.00
50.00	54.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
54.00	56.00	<i>Lantana camara</i>	Lantana	2.00
56.00	60.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
60.00	64.00	<i>Lantana camara</i>	Lantana	4.00
64.00	67.00	<i>Lantana montevidensis</i>	Creeping lantana	3.00
67.00	70.00	<i>Lantana camara</i>	Lantana	3.00
70.00	72.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
72.00	84.00	<i>Lantana camara</i>	Lantana	12.00
84.00	100.00	<i>Lantana montevidensis</i>	Creeping lantana	16.00

Native/bare cover	10
Total Exotic/weed cover	90
Weeds of National Significance cover	33

North



South



East



West



Lyons Property Ground Layer Transect (100M) 12 (23.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	2.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
2.00	4.00	<i>Themeda triandra</i>	Kangaroo grass	2.00
4.00	6.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
6.00	14.00	<i>Aristida species</i>	Aristida species	8.00
		<i>Themeda triandra</i>	Kangaroo grass	
14.00	15.00	<i>Lantana camara</i>	Lantana	1.00
15.00	17.00	Leaf litter	Leaf litter	2.00
17.00	22.00	<i>Themeda triandra</i>	Kangaroo grass	5.00
		<i>Aristida species</i>	Aristida species	
22.00	28.00	<i>Lantana montevidensis</i>	Creeping lantana	6.00
28.00	29.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	1.00
29.00	37.00	<i>Aristida species</i>	Aristida species	8.00
		<i>Heteropogon contortus</i>	Black Spear Grass	
		<i>Themeda triandra</i>	Kangaroo grass	
37.00	39.00	<i>Lantana camara</i>	Lantana	2.00
39.00	46.00	<i>Lantana montevidensis</i>	Creeping lantana	7.00
46.00	48.00	<i>Themeda triandra</i>	Kangaroo grass	2.00
48.00	55.00	<i>Lantana montevidensis</i>	Creeping lantana	7.00
55.00	56.00	<i>Lantana camara</i>	Lantana	1.00
56.00	65.00	<i>Sida species</i>	Native Sida	9.00
		<i>Heteropogon contortus</i>	Black spear grass	
65.00	66.00	<i>Bidens pilosa</i>	Cobblers pegs	1.00
66.00	74.00	<i>Lantana montevidensis</i>	Creeping lantana	8.00
74.00	78.00	Leaf litter	Leaf litter	4.00
78.00	79.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	1.00
79.00	84.00	Leaf litter	Leaf litter	5.00
84.00	86.00	<i>Plectranthus sp.</i>	Plectranthis	2.00
86.00	90.00	<i>Passiflora suberosa</i>	Corky passion	4.00
90.00	100.00	Native grass	Native grass	10.00

Native/bare cover	59
Total Exotic/weed cover	41
Weeds of National Significance cover	4

North



South



East



West



Lyons Property Ground Layer Transect (100M) 13 (23.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	1.00	Leaf litter	Leaf litter	1.00
1.00	2.00	<i>Themeda triandra</i>	Kangaroo grass	1.00
2.00	4.00	Leaf litter	Leaf litter	2.00
4.00	7.00	<i>Themeda triandra</i>	Kangaroo grass	3.00
7.00	9.00	Leaf litter	Leaf litter	2.00
9.00	10.00	<i>Lantana camara</i>	Lantana	1.00
10.00	13.00	Leaf litter	Leaf litter	3.00
13.00	16.00	<i>Themeda triandra</i>	Kangaroo grass	3.00
16.00	18.00	<i>Lantana camara</i>	Lantana	2.00
18.00	21.00	Leaf litter	Leaf litter	3.00
21.00	23.00	<i>Lantana camara</i>	Lantana	2.00
23.00	24.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	1.00
24.00	29.00	<i>Themeda triandra</i>	Kangaroo grass	5.00
29.00	33.00	Leaf litter	Leaf litter	4.00
33.00	35.00	<i>Lantana camara</i>	Lantana	2.00
35.00	40.00	Leaf litter	Leaf litter	5.00
40.00	41.00	<i>Lantana camara</i>	Lantana	1.00
41.00	45.00	Native grasses	Native grasses	4.00
45.00	54.00	<i>Lantana camara</i>	Lantana	9.00
54.00	56.00	<i>Desmodium intortum</i>	Green leaf desmodium	2.00
56.00	60.00	<i>Lantana camara</i>	Lantana	4.00
60.00	64.00	Bare ground	Bare ground	4.00
64.00	68.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
68.00	71.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	3.00
71.00	76.00	<i>Lantana montevidensis</i>	Creeping lantana	5.00
76.00	80.00	Leaf litter	Leaf litter	4.00
80.00	83.00	Native forb	Native forb	3.00
83.00	90.00	<i>Lantana camara</i>	Lantana	7.00
90.00	92.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
92.00	94.00	<i>Themeda triandra</i>	Kangaroo grass	2.00
94.00	100.00	<i>Lantana camara</i>	Lantana	6.00

Native/bare cover	53
Total Exotic/weed cover	47
Weeds of National Significance cover	34

North



South



East



West



Lyons Property Ground Layer Transect (100M) 14 (23.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	1.00	<i>Melinis repens</i>	Red Natal Grass	1.00
1.00	14.00	<i>Heteropogon contortus</i>	Black Spear Grass	13.00
		<i>Themeda triandra</i>	Kangaroo grass	
		<i>Aristida species</i>	Aristida species	
14.00	16.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
16.00	27.00	Native grasses	Native grasses	11.00
27.00	30.00	Creeping lantana	Creeping lantana	3.00
30.00	31.00	<i>Lantana camara</i>	Lantana	1.00
31.00	35.00	Native grasses	Native grasses	4.00
35.00	36.00	<i>Lantana camara</i>	Lantana	1.00
36.00	39.00	Native grasses	Native grasses	3.00
39.00	41.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
41.00	48.00	Native grasses	Native grasses	7.00
48.00	50.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
50.00	59.00	Native grasses	Native grasses	9.00
59.00	60.00	<i>Lantana montevidensis</i>	Creeping lantana	1.00
60.00	66.00	Native grasses	Native grasses	6.00
66.00	67.00	<i>Lantana camara</i>	Lantana	1.00
67.00	74.00	Native grasses	Native grasses	7.00
74.00	78.00	Leaf litter	Leaf litter	4.00
78.00	85.00	<i>Lantana montevidensis</i>	Creeping lantana	7.00
85.00	100.00	<i>Heteropogon contortus</i>	Black Spear Grass	15.00
		<i>Themeda triandra</i>	Kangaroo grass	
		<i>Aristida species</i>	Aristida species	
Native/bare cover				79
Total Exotic/weed cover				21
Weeds of National Significance cover				3

North



South



East



West



Lyons Property Ground Layer Transect (100M) 15 (23.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	1.00	Leaf Litter	Leaf litter	1.00
1.00	6.00	Lantana camara	Lantana	5.00
6.00	9.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	3.00
9.00	16.00	Lantana camara	Lantana	7.00
16.00	19.00	<i>Capillipedium parviflorum</i>	Scented-top Grass	3.00
19.00	20.00	Leaf litter	Leaf litter	1.00
20.00	22.00	Lantana montevidensis	Creeping lantana	2.00
22.00	27.00	Lantana camara	Lantana	5.00
27.00	29.00	Lantana montevidensis	Creeping lantana	2.00
29.00	35.00	Lantana camara	Lantana	6.00
35.00	36.00	Lantana montevidensis	Creeping lantana	1.00
36.00	41.00	Lantana camara	Lantana	5.00
41.00	42.00	Native grasses	Native grasses	1.00
42.00	43.00	Leaf litter	Leaf litter	1.00
43.00	44.00	Lantana camara	Lantana	1.00
44.00	46.00	Native forbs	Native forbs	2.00
46.00	53.00	Leaf litter	Leaf litter	7.00
53.00	56.00	Native grasses	Native grasses	3.00
56.00	60.00	Lantana camara	Lantana	4.00
60.00	63.00	<i>Lomandra longifolia</i>	Many Flowered Mat Rush	3.00
63.00	66.00	Lantana camara	Lantana	3.00
66.00	68.00	Lantana montevidensis	Creeping lantana	2.00
68.00	71.00	Native grasses	Native grasses	3.00
71.00	74.00	Lantana camara	Lantana	3.00
74.00	75.00	Native grasses	Native grasses	1.00
75.00	78.00	Lantana camara	Lantana	3.00
78.00	82.00	Leaf litter/native grass	Leaf litter/native grass	4.00
82.00	83.00	Lantana camara	Lantana	1.00
83.00	86.00	Leaf litter/native grass	Leaf litter/native grass	3.00
86.00	87.00	Lantana montevidensis	Creeping lantana	1.00
87.00	91.00	Native grasses	Native grasses	4.00
91.00	95.00	Lantana montevidensis	Creeping lantana	4.00
95.00	100.00	Native grasses	Native grasses	5.00

Native/bare cover	45
Total Exotic/weed cover	55
Weeds of National Significance cover	43

North



South



East



West



Lyons Property Ground Layer Transect (100M) 16 (23.04.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	4.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
4.00	7.00	Leaf litter	Leaf litter	3.00
7.00	9.00	<i>Plectranthus/Native grass</i>	Plectranthus/Native grass	2.00
9.00	14.00	Leaf litter	Leaf litter	5.00
14.00	17.00	<i>Native grasses</i>	Native Grasses	3.00
		<i>Eustrephus latifolius</i>	Wombat Berry	
17.00	22.00	Leaf litter	Leaf litter	5.00
22.00	27.00	<i>Heteropogon contortus</i>	Black Spear Grass	
		<i>Themeda triandra</i>	Kangaroo grass	5.00
27.00	29.00	<i>Lantana camara</i>	Lantana	2.00
29.00	30.00	<i>Heteropogon contortus</i>	Black Spear Grass	1.00
30.00	40.00	<i>Lantana montevidensis</i>	Creeping lantana	10.00
40.00	42.00	<i>Bidens pilosa</i>	Cobbler's Pegs	2.00
		<i>Passiflora suberosa</i>	Corky passion	
42.00	45.00	<i>Lantana camara</i>	Lantana	3.00
45.00	49.00	<i>Native grasses</i>	Native grasses	4.00
49.00	50.00	<i>Lantana camara</i>	Lantana	1.00
50.00	58.00	<i>Native grass, rock, Leaf litter</i>	Native grass, rock, Leaf litter	8.00
58.00	59.00	<i>Lantana montevidensis</i>	Creeping lantana	1.00
59.00	66.00	<i>Native grasses, shrubs and leaf litter</i>	Native grasses and Leaf Litter	7.00
66.00	72.00	<i>Lantana camara</i>	Lantana	6.00
72.00	77.00	<i>Lantana montevidensis</i>	Creeping lantana	5.00
77.00	79.00	<i>Lantana camara</i>	Lantana	2.00
79.00	81.00	<i>Native grasses, forbs, leaf litter</i>	Native grasses, forbs, leaf litter	2.00
81.00	83.00	<i>Lantana camara</i>	Lantana	2.00
83.00	85.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
85.00	91.00	<i>Lantana camara</i>	Lantana	6.00
91.00	94.00	<i>Native grasses, forbs, leaf litter</i>	Native grasses, forbs, leaf litter	3.00
94.00	96.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
96.00	100.00	<i>Native grasses, forbs, leaf litter</i>	Native grasses, forbs, leaf litter	4.00
Native/bare cover				52
Total Exotic/weed cover				48
Weeds of National Significance cover				22

North



South



East



West



Lyons Property Ground Layer Transect (100M) 17 (14.05.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	3.00	<i>Lantana montevidensis</i>	Creeping Lantana	3.00
3.00	10.00	<i>Lantana camara</i>	Lantana	7.00
10.00	13.00	Leaf Litter	Leaf Litter	3.00
13.00	15.00	<i>Heteropogon contortus</i>	Black Spear Grass	2.00
15.00	16.00	<i>Lantana camara</i>	Lantana	1.00
16.00	25.00	<i>Heteropogon contortus</i>	Black Spear Grass	9.00
25.00	30.00	<i>Lantana montevidensis</i>	Creeping Lantana	5.00
30.00	32.00	<i>Lantana camara</i>	Lantana	2.00
32.00	40.00	<i>Lantana montevidensis</i>	Creeping Lantana	8.00
40.00	44.00	<i>Heteropogon contortus</i>	Black Spear Grass	4.00
44.00	50.00	Leaf Litter	Leaf Litter	6.00
50.00	51.00	<i>Heteropogon contortus</i>	Black Spear Grass	1.00
51.00	53.00	Leaf Litter	Leaf Litter	2.00
53.00	54.00	<i>Melinis repens</i>	Red Natal	1.00
54.00	58.00	<i>Lantana montevidensis</i>	Creeping Lantana	4.00
58.00	62.00	<i>Heteropogon contortus</i>	Black Spear Grass	4.00
62.00	66.00	<i>Desmodium species</i>	Native Desmodium	4.00
66.00	70.00	Native Grasses	Native Grasses	4.00
70.00	88.00	<i>Lantana montevidensis</i>	Creeping Lantana	18.00
88.00	90.00	<i>Lantana camara</i>	Lantana	2.00
90.00	93.00	<i>Heteropogon contortus</i>	Black Spear Grass	3.00
93.00	100.00	<i>Lantana camara</i>	Lantana	7.00

Native/bare cover	43
Total Exotic/weed cover	57
Weeds of National Significance cover	19

North



South



East



West



Lyons Property Ground Layer Transect (100M) 17 (14.05.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	1.00	<i>Lantana montevidensis</i>	Creeping lantana	1.00
		<i>Capillipedium spicigerum</i>	Scented Top Grass	
1.00	4.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	3.00
4.00	5.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	1.00
5.00	10.00	Leaf Litter	Leaf Litter	5.00
10.00	11.00	<i>Dianella caerulea</i>	Blue-flax Lily	1.00
11.00	18.00	Leaf Litter	Leaf Litter	7.00
18.00	20.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	2.00
20.00	25.00	Leaf Litter	Leaf Litter	5.00
25.00	27.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	2.00
27.00	28.00	<i>Passiflora suberosa</i>	Corky Passion	1.00
28.00	35.00	Leaf Litter	Leaf Litter	7.00
35.00	37.00	<i>Passiflora suberosa</i>	Corky Passion	2.00
37.00	40.00	Native grass	Native grass	3.00
40.00	43.00	Leaf Litter	Leaf Litter	3.00
43.00	45.00	<i>Passiflora suberosa</i>	Corky Passion	2.00
45.00	47.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	2.00
47.00	49.00	<i>Passiflora suberosa</i>	Corky Passion	2.00
49.00	52.00	Leaf Litter	Leaf Litter	3.00
52.00	54.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
54.00	56.00	<i>Lantana camara</i>	Lantana	2.00
56.00	60.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	4.00
60.00	62.00	<i>Passiflora suberosa</i>	Corky Passion	2.00
62.00	64.00	<i>Eremophila debilis</i>	Winter apple	2.00
64.00	68.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	4.00
68.00	71.00	Leaf Litter	Leaf Litter	3.00
71.00	74.00	<i>Lantana camara</i>	Lantana	3.00
74.00	76.00	<i>Passiflora suberosa</i>	Corky Passion	2.00
76.00	84.00	Native grass	Native grass	8.00
84.00	86.00	<i>Passiflora suberosa</i>	Corky Passion	2.00
86.00	90.00	Leaf Litter	Leaf Litter	4.00
90.00	93.00	<i>Lantana montevidensis</i>	Creeping lantana	3.00
93.00	100.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	7.00

Native/bare cover	76
Total Exotic/weed cover	24
Weeds of National Significance cover	5

North



South



East



West



Lyons Property Ground Layer Transect (100M) 17 (14.05.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	1.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	1.00
1.00	3.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
3.00	4.00	<i>Lantana camara</i>	Lantana	1.00
4.00	6.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
6.00	7.00	<i>Heteropogon contortus</i>	Black Spear Grass	1.00
7.00	11.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
11.00	13.00	<i>Lantana camara</i>	Lantana	2.00
13.00	14.00	<i>Heteropogon contortus</i>	Black Spear Grass	1.00
14.00	16.00	<i>Passiflora suberosa</i>	Corky Passion	2.00
16.00	18.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
18.00	20.00	<i>Lantana camara</i>	Lantana	2.00
20.00	23.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	3.00
23.00	24.00	<i>Glycine microphylla</i>	Small-leaf Glycine	1.00
24.00	27.00	<i>Lantana montevidensis</i>	Creeping lantana	3.00
27.00	28.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	1.00
28.00	32.00	<i>Aristida vagans</i>	Threeawn Speargrass	4.00
32.00	37.00	Leaf litter	Leaf litter	5.00
37.00	40.00	<i>Passiflora suberosa</i>	Corky Passion	3.00
40.00	47.00	<i>Lantana camara</i>	Lantana	7.00
47.00	55.00	<i>Lantana montevidensis</i>	Creeping lantana	8.00
55.00	56.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	1.00
56.00	59.00	<i>Capillipedium parviflorum</i>	Scented-top Grass	3.00
59.00	61.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	2.00
61.00	75.00	<i>Lantana montevidensis</i>	Creeping lantana	14.00
75.00	80.00	<i>Lantana camara</i>	Lantana	5.00
80.00	83.00	Native grasses	Native grasses	3.00
83.00	100.00	<i>Lantana camara</i>	Lantana	17.00

Native/bare cover	26
Total Exotic/weed cover	74
Weeds of National Significance cover	34

North



South



East



West



Lyons Property Ground Layer Transect (100M) 17 (14.05.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	3.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	3.00
3.00	4.00	<i>Aristida vagans</i>	Threeawn Speargrass	
4.00	5.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	1.00
5.00	10.00	Lantana camara	Lantana	1.00
10.00	12.00	<i>Leaf litter</i>	Leaf litter	5.00
		Passiflora suberosa	Corky Passion	2.00
		<i>Cymbopogon refractus</i>	Barbed Wire Grass	6.00
12.00	18.00	<i>Heteropogon contortus</i>	Black Spear Grass	
18.00	20.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	2.00
20.00	23.00	Lantana camara	Lantana	3.00
23.00	26.00	<i>Native grasses</i>	Native grasses	3.00
26.00	28.00	Lantana montevidensis	Creeping lantana	2.00
28.00	30.00	Melinis repens	Red Natal Grass	2.00
30.00	40.00	<i>Leaf litter</i>	Leaf litter	10.00
		<i>Cymbopogon refractus</i>	Barbed Wire Grass	4.00
40.00	44.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	
44.00	45.00	Lantana montevidensis	Creeping lantana	1.00
45.00	50.00	<i>Leaf litter</i>	Leaf litter	5.00
50.00	53.00	<i>Einadia trigonos</i>	Fishweed	3.00
53.00	57.00	<i>Leaf litter</i>	Leaf litter	4.00
57.00	63.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	6.00
63.00	70.00	<i>Leaf litter</i>	Leaf litter	7.00
70.00	75.00	<i>Native grasses</i>	Native grasses	5.00
75.00	80.00	<i>Leaf litter</i>	Leaf litter	5.00
80.00	84.00	<i>Cymbopogon refractus</i>	Barbed Wire Grass	4.00
84.00	90.00	<i>Leaf litter</i>	Leaf litter	6.00
90.00	94.00	<i>Leaf litter</i>	Leaf litter	4.00
94.00	100.00	<i>Leaf litter</i>	Leaf litter	6.00

Native/bare cover	87
Total Exotic/weed cover	13
Weeds of National Significance cover	4

North



South



East



West



Lyons Property Ground Layer Transect (100M) 17 (14.05.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	4.00	Leaf litter	Leaf litter	4.00
		<i>Smilax australis</i>	Barbed-wire Vine	
4.00	7.00	Native grasses	Native grasses	3.00
7.00	9.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
		<i>Lobelia purpurascens</i>	White Root	
9.00	11.00	<i>Plectranthus parviflorus</i>	Little Spurflower	2.00
11.00	12.00	<i>Desmodium rhytidophyllum</i>	Hairy Trefoil	1.00
12.00	13.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	1.00
13.00	15.00	Leaf litter	Leaf litter	2.00
15.00	19.00	<i>Lantana camara</i>	Lantana	4.00
19.00	20.00	<i>Ageratum houstonianum</i>	Blue Billygoat Weed	1.00
20.00	22.00	<i>Lantana camara</i>	Lantana	2.00
22.00	23.00	<i>Smilax australis</i>	Barbed-wire Vine	1.00
23.00	25.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
25.00	36.00	<i>Lantana camara</i>	Lantana	11.00
36.00	38.00	Native grasses	Native grasses	2.00
38.00	45.00	<i>Lantana camara</i>	Lantana	7.00
45.00	50.00	Native grasses	Native grasses	5.00
50.00	54.00	<i>Lantana montevidensis</i>	Creeping lantana	4.00
54.00	55.00	Native grasses	Native grasses	1.00
55.00	62.00	<i>Lantana montevidensis</i>	Creeping lantana	7.00
62.00	65.00	<i>Lantana camara</i>	Lantana	3.00
65.00	68.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	3.00
68.00	74.00	<i>Lantana montevidensis</i>	Creeping lantana	6.00
74.00	83.00	Native grasses	Native grasses	9.00
83.00	86.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	3.00
86.00	90.00	Leaf litter	Leaf litter	4.00
90.00	93.00	Native grasses	Native grasses	3.00
93.00	96.00	<i>Lantana camara</i>	Lantana	3.00
96.00	100.00	Native grasses	Native grasses	4.00

Native/bare cover	48
Total Exotic/weed cover	52
Weeds of National Significance cover	30

North



South



East



West



Lyons Property Ground Layer Transect (100M) 17 (14.05.2021)				
Start (m)	Finish (m)	Species	Common Name	Total Coverage
0.00	2.00	<i>Passiflora suberosa</i>	Corky Passion	2.00
2.00	7.00	Leaf litter	Leaf litter	5.00
7.00	13.00	<i>Lantana montevidensis</i>	Creeping lantana	6.00
13.00	20.00	Leaf litter	Leaf litter	7.00
20.00	21.00	<i>Heteropogon contortus</i>	Black Spear Grass	1.00
21.00	23.00	<i>Lantana montevidensis</i>	Creeping lantana	2.00
23.00	24.00	Leaf litter	Leaf litter	1.00
24.00	26.00	<i>Lantana camara</i>	Lantana	2.00
26.00	30.00	Native grasses	Native grasses	4.00
30.00	40.00	Leaf litter	Leaf litter	10.00
40.00	44.00	Native grasses	Native grasses	4.00
44.00	50.00	Leaf litter	Leaf litter	6.00
50.00	54.00	<i>Lantana camara</i>	Lantana	4.00
54.00	58.00	Leaf litter	Leaf litter	4.00
58.00	60.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	2.00
60.00	65.00	Leaf litter	Leaf litter	5.00
65.00	68.00	Native grasses	Native grasses	3.00
68.00	72.00	Leaf litter	Leaf litter	4.00
72.00	74.00	<i>Lomandra longifolia</i>	Many Flower Mat Rush	2.00
74.00	76.00	<i>Lantana camara</i>	Lantana	2.00
76.00	80.00	Leaf litter	Leaf litter	4.00
80.00	86.00	Bare rock	Bare Rock	6.00
86.00	87.00	Native grasses	Native grasses	1.00
87.00	100.00	Leaf litter	Leaf litter	13.00

Native/bare cover	82
Total Exotic/weed cover	18
Weeds of National Significance cover	3

North



South



East



West



Appendix E

Non-native Koala Predator Data

Lyons - Camera Trap Data

Camera #	Set up	Collected	Common name	Species	Detection	non-native koala predator
1	19/04/2021	13/05/2021	Macropod Sp.		1	
2	19/04/2021	13/05/2021	Torresian Crow	<i>Corvis orru</i>	1	
			Noisey miner	<i>Manorina melanocephala</i>	1	
3	19/04/2021	13/05/2021	Macropod Sp.		1	
			Dog	<i>Canis familiaris</i>	2	✓
			Red necked Wallaby	<i>Macropus rufogriseus</i>	1	
			Koala	<i>Phascolarctos cinereus</i>	1	
			Cow	<i>Bos taurus</i>	1	
			Common brush-tailed possum	<i>Trichosurus vulpecula</i>	1	
4	19/04/2021	13/05/2021	Macropod Sp.		1	
			Common brush-tailed possum	<i>Trichosurus vulpecula</i>	1	
			Pretty-face wallaby	<i>Macropus parryi</i>	1	
			European Hare	<i>Lepus europaeus</i>	1	
			Brush-tailed phascogale	<i>Phascogale tapoatafa</i>	1	
5	19/04/2021	13/05/2021	Dog	<i>Canis familiaris</i>	5	✓
			Pig	<i>sus scrofa</i>	1	
			Australian magpie	<i>Cracticus tibicen</i>	1	
			Macropod Sp.		1	
6	19/04/2021	13/05/2021	Dog	<i>Canis familiaris</i>	1	✓
7	19/04/2021	13/05/2021	Common brush-tailed possum	<i>Trichosurus vulpecula</i>	1	
			Brush-tailed phascogale	<i>Phascogale tapoatafa</i>	1	

Lyons - Camera 1



Lyons - Camera 2





Lyons - Camera 4



Lyons - Camera 5



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Lyons - Camera 6



Lyons - Camera 7



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