PREPARED FOR:

LENDLEASE COMMUNITIES (SPRINGFIELD) PTY LTD

29 JULY 2021

BASELINE ECOLOGICAL REPORT

THE MEADS OFFSET SITE

NEWGROUND

NEW GROUND | Gold Coast 6A & 6B, 2563 Gold Coast Highway, Mermaid Beach | Brisbane 84a Brunswick Street, Fortitude Valley | Mail PO Box 713, Mermaid Beach QLD 4218

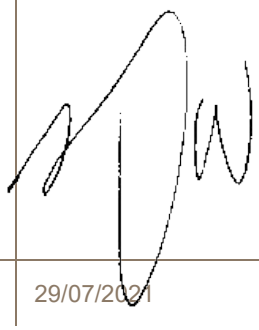
TELEPHONE 07 5530 7283 **ABN** 31 146 671 481 NEWGROUND.COM.AU

REPORT TITLE	BASELINE ECOLOGY REPORT
PROJECT	THE MEADS OFFSET SITE
CLIENT	LENDLEASE COMMUNITIES (SPRINGFIELD) PTY LTD

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All information within this report is prepared for the exclusive use of the client to accompany this report for the land described herein and are not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

New Ground Environmental Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from, any person or entity using the plans or information in this study for purposes other than those stated above.

APPROVED BY	NELSON WILLS
POSITION	DIRECTOR
SIGNED	
DATE	29/07/2021

DOCUMENT DISTRIBUTION: 2215-R-02-MEADS BASELINE REPORT.DOCX

V.	COPIES	FORMAT	ISSUED TO	DATE
0	1	PDF	Lendlease Communities (Springfield) Pty Ltd	29/7/2021

CONTENTS

APPENDIX F

BioCondition & Habitat Quality Site Assessment Data

APPENDIX G

Weed Distribution (Cover) Plan

TABLES

Abbreviations

AHD	Australian height datum
API	Aerial photography interpretation
BoM	Bureau of Meteorology
DAWE	Department of Agriculture, Water and the Environment (Commonwealth)
DES	Department of Environment and Science (Qld)
e.g.	For example
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
etc.	etcetera
EVNT	Endangered, Vulnerable, Near Threatened as listed under the NC Reg
ha	Hectares
i.e.	That is
m	Metres
mm	Millimetres
PMST	Protected Matters Search Tool
RE	Regional Ecosystem
TEC	Threatened Ecological Community
The Approval	Notice of Approval for Woogaroo Heights master planned residential development, Springfield, Queensland (EPBC 2017/7875) (DAWE, 30 November 2020)
VM Act	Vegetation Management Act 1999 (Qld)
WoNS	Weed of National Significance

Chapter 1: Introduction

1.1 Background

The purpose of this report is to present baseline ecological data which will inform ongoing management of the Meads offset site (part Lot 18 CA31640) (refer **APPENDIX A** for site locality plan). The Meads offset is being delivered pursuant to the *Notice of Approval for Woogaroo Heights master planned residential development, Springfield, Queensland (EPBC 2017/7875)* under Sections 130(1) and 133(1) of the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) ('the Approval') (refer **APPENDIX B** for Approval notice). Consistent with condition 3a of the Approval, the Meads offset is concerned with provision of koala (*Phascolarctus cinereus*) and grey-headed flying-fox (*Pteropus poliocephalus*) habitat offsets over the 132 ha portion of the subject site that has been legally secured as a Category A area via a Voluntary Declaration made under the *Vegetation Management Act 1999* (Qld) (**APPENDIX C**).

The scope of works presented by this study has been prepared in accordance with the requirements for ecological surveys and reporting outlined by Conditions 4 and 5 of the Approval as reproduced below:

4. *Within 6 months from the date of this approval, the approval holder must complete baseline surveys of the entire area at The Meads offset site. The baseline surveys must be conducted by a suitably qualified field ecologist in accordance with a scientifically valid, robust, and repeatable methodology and include details of the:*

a. Vegetation condition attributes for each Regional Ecosystem;

b. Number and condition of Grey-Headed Flying-fox foraging species in each quarter (25%) of The Meads offset site;

c. Extent of weed cover;

d. Number of non-native predators and non-native herbivores; and

e. Rate of Koala mortalities attributable to non-native predators.

5. *Within 3 months of completion of the baseline surveys required under condition 4, the approval holder must publish on the website and provide to the Department a report detailing the results of the baseline surveys required under condition 4 (including survey methodology and dates).*

This report presents the objectives, methodology and results arising from baseline ecological studies undertaken over the Meads offset area.

1.2 Objectives of the Study

The objectives of this report are to:

- Detail the baseline survey methodology applied to the study consistent with Approval condition 5;
- Present findings of ecological baseline surveys undertaken over the Meads offset area in 2021 to accord with Approval condition 4;
- Guide ongoing monitoring and adaptive management of the offset area in achievement of performance outcomes specified by the condition 7 of the Approval.

1.3 Outline of the Report

This report is structured as follows:

- **Chapter 1:** Introduces the subject study and the report;
- **Chapter 2:** Outlines the methodology used for the baseline surveys and discusses the limitations associated with this study;
- **Chapter 3:** Presents the results of the baseline field survey;
- **Chapter 4:** Provides a summary conclusion.

Chapter 2: Methodology

2.1 Desktop and Literature Review

TABLE 2.1 below presents the historic surveys and works conducted over the offset area which were referred to in baseline survey planning.

TABLE 2.1: PREVIOUS FIELD STUDIES AND ECOLOGICAL ASSESSMENT WORKS

TECHNICAL REPORT
New Ground (2015). Technical Summary of Koala Habitat Offset Site Proposal – Lot 18 on CA31460 (and associated field data).
New Ground (2019). Response to Additional Information for Preliminary Documentation to Environmental Offsets and Woogaroo Heights Master Planned Residential Development (EPBC 2017/7875) (and raw field data).

Of particular note is that field data and mapping collected/prepared by New Ground over 30 quaternary survey sites and eight (8) secondary survey sites between 2015-2019 was reviewed in design of baseline surveys.

2.2 Field Surveys and Assessment

Diurnal field investigations were undertaken by two (2) senior ecologists over a period of 5 days between 29 March and 2 April 2021, while camera trapping surveys were conducted between 29 March and 15 May 2021. Surveys were conducted using the methodology detailed in the following sections.

A total of 0.2 mm of rain was recorded during the diurnal survey period, while a total of 87.2 mm was recorded in the week leading up to the field surveys at the nearest Bureau of Meteorology (BoM) weather station (station 041529) to the Meads (BoM, 2021). Temperatures reached a high of 23.1°C during the field survey period (BoM, 2021). The location of formal survey points undertaken during the field surveys are demonstrated in **APPENDIX A**. Formal surveys were supplemented with opportunistic observations and random meanders.

2.2.1 BioCondition Benchmark Survey

To assist in the evaluation of vegetation condition, a series of BioCondition assessments were undertaken. BioCondition assessments were completed at nine (9) sites (T1-T9) which were pre-selected within each mapped Regional Ecosystem (RE) type or selected in the field following field assessment (e.g. relocated to more suitable site).

BioCondition assessments were undertaken in general accordance with the methodology described by Eyre *et al* (2015). This involved the establishment of a 100 m x 50 m transect containing five assessment areas (plots/quadrats) to record values for defined ecological attributes at each transect site. These values were used as indicators to provide a quantitative measure for the performance of ecosystem function within the context of biodiversity condition. Permanent markers in the form of star pickets were installed at each end of every transect to physically mark benchmark survey site locations for future reference; namely for annual monitoring surveys. Permanent markers were placed at 0 m and 100 m rather than 0 m and 50 m (as described in Eyre et al, 2015) since a key area of ongoing focus for Biocondition surveys is monitoring of vegetation (canopy) condition attributes (as per Approval condition 4). Transect 9 (T9) was not marked with star pickets given accessibility challenges owing to very dense broad-leaved privet (*Ligustrum lucidium*) infestation in this area of the site. GPS coordinates were collected however.

Field data was recorded using the BioCondition Field Assessment Sheet template (Appendix 2 of Eyre et al. 2011). Canopy recruit and non-native plant cover attributes were recorded separately for use in could be used for calculating BioCondition/offset condition scores.

The following information was recorded at each BioCondition site:

- Date;
- Observers;
- Description of location (bioregion, general description, co-ordinates for plot);
- General habitat description and RE type;
- Median height for canopy, emergent and subcanopy strata;
- Tree species richness (within 100 m x 50 m plot);
- Native plant species richness (within 50 m x 10 m plot);

- Non-native plant cover (within 50 m x 10 m plot);
- Total length of coarse woody debris (length >10 cm diameter and >0.5 m long within 50 m x 20 m plot);
- Estimated number of large eucalypt and non-eucalypt trees (within 100 m x 50 m plot);
- Recruitment of canopy species (within the 100 m x 50 m plot);
- Tree and shrub canopy cover (within 100 m transect);
- Ground cover within 1 m x 1 m plots (native perennial grass and organic litter cover in the ground layer);
- Disturbances (severity, last event and observation type);
- Site photographs (collected via Konect software and stamped with spatial coordinates).

BioCondition benchmarks presented in Attachment A of the Approval Notice (**APPENDIX B**) were applied to each respective RE in determination of BioCondition. Since the benchmarks presented by the Approval Notice were concerned with canopy and sub-canopy height and cover; balance benchmarks for each regional ecosystem were taken from the Queensland Herbarium Biocondition Benchmark Data (version 2.3) (spreadsheet). While the balance biocondition benchmarks are not directly relevant to offset compliance status with the Approval Notice, they were applied to the offset area such that the Queensland herbarium's Habitat Quality Assessment Method may be utilised as a means of calculating a holistic offset area quality score as part of baseline assessment works.

2.2.2 Habitat Quality Assessment Method

Data collected during baseline surveys was applied to the Habitat Quality Site Assessment Template (spreadsheet) consistent with the *Guide to determining terrestrial habitat quality – Methods for assessing habitat quality under the Queensland Environmental Offsets Policy* (DES, 2020). As mentioned above, regional ecosystem biocondition data is a key input to the Habitat Quality Assessment Method (HQAM). The HQAM allows site condition data to be applied specifically to koala (*Phascolarctos cinereus*) habitat attribute indices and produces a quantitative habitat quality score which factors in threats to the species (such as predators) and impediments to species mobility such as weed thickets. Since the Approval Notice outlines performance indicators for the offset area around control of non-native predators and management of weeds, the HQAM method was viewed as a technically rigorous approach to 'scoring' the offset area for baseline-setting purposes.

2.2.3 Vegetation Community Surveys

The vegetation community survey was conducted in accordance with industry best practice standards and employed a methodology generally consistent with the established format detailed within *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland, Version 5* (Neldner et al., 2019). Site selection was determined in the field based on perceived aerial photography patterns in vegetation composition and in response to variation in vegetation communities encountered during site traverses. Quaternary sites were used to provide additional (to BioCondition transect site data) survey resolution and refinements in vegetation community delineation.

Vegetation community data was collected from 11 modified quaternary survey sites during the survey. At each survey site, data was collected from a 25-50 m radial plot (**APPENDIX A**). In general accordance with Neldner et al, (2019), at a minimum the following data was collected from each survey site:

- Date and time;
- Location;
- In-field determination of the remnant status of the vegetation;
- Structural formation class using the modified Specht (1970) classification system (Neldner et al., 2019); and
- Floristic composition and relative abundance for the predominant species in the canopy, shrub and ground layers.

2.2.4 Exotic Flora and Fauna Surveys

Exotic flora species of particular focus to the baseline survey were those species deemed to offer a threat to the offset area achieving the performance outcomes of the Approval Notice. That is, weeds that can form thickets which may impede koala movement and/or those weeds that are known to smother or supress succession of native flora species and hence community ability to achieve regional ecosystem benchmarks. The two (2) weed species known to be of particular management concern to the Meads offset site are lantana (*Lantana camara**) and broad-leaved privet (*Ligustrum lucidium*) (New Ground, 2015; New Ground 2019). Baseline surveys were primarily focussed on ground-truthing of weed distribution mapping prepared over the offset area by New Ground in 2019.

Exotic fauna species of focus were those species deemed to offer a threat to the offset area achieving the performance outcomes of the Approval Notice. This includes non-native predators (of koala and grey-headed flying foxes), namely wild dogs (*Canis lupus**), foxes (*Vulpes vulpes**) and cats (*Felis catus**)) and non-native herbivores known to damage native vegetation communities (and hence detract from a vegetation communities' ability to achieve regional ecosystem benchmarks) such as cattle (*Bos taurus*) and red deer (*Cervus elaphus**).

2.2.5 Camera Trapping

Camera traps were the primary method applied to collect baseline data around distribution and occurrence of the target fauna species mentioned in section 2.2.4 above. A total of nine (9) camera traps (C1-C9) were distributed across the offset site. Of this total, five (5) were the 'Swift Enduro' model made by Outdoor Cameras and four (4) were SG570-type cameras made by Scout Guard. The area in front of each trap was baited with large pieces of barbequed chicken when traps were set out. The camera trapping period was from 29/3/2021 to 15/5/2021 (46 nights). Due to selected camera malfunction and turning of a camera (by a cow) during the survey period the total number of trap nights was 364.

Preferential camera trap locations for baseline (and ongoing monitoring purposes) were determined in review of data collected at each trap. Trap C5 was culled from baseline index calculations since it was turned (by a cow) early in the survey period (10 April) and as a result yielded low volumes of data. Trap C8, which was located outside of the offset area on the bank of a dam was also excluded from baseline calculations given the high level of cattle traffic at this location (i.e., cattle sitting in front of camera for much of the survey period). Accordingly, the total number of trap nights utilised in calculation of baseline abundance indices was 319. Abundance indices for each target species over the offset area were calculated by dividing the number of occurrences by the number of trap nights.

Camera traps were generally located adjacent to tracks (favouring the crossroads of tracks) anticipated to form movement conduits for non-native predators and herbivores. Site cues such as apparent deer rubs, dog scats and seemingly preferable grazing areas for deer as well as a clear line of sight were considered in placement of camera traps. Each camera trap site was established as a 'permanent' survey site via installation of a star picket such that future camera trap surveys may be conducted from baseline locations. Each camera trap was tied to a star picket with cable ties. Refer to **APPENDIX A** for camera trap locations and **APPENDIX D** for photographs of set out.

2.2.6 Koala Spot Assessment Technique (KSAT)

Koala scat searches were undertaken in general accordance with the Koala Spot Assessment Technique (KSAT) adopted by Phillips and Callaghan (2011); an exception being that 20 trees were assessed at each KSAT site (rather than the standard 30). This adaptation was made to allow broaden site coverage within the survey period. The methodology involved searching the basal circumference of suitable Koala food trees for evidence of utilisation by the Koala in the form of koala scats. Within each formal KSAT plot, a 'centre tree' was chosen, and along with this tree, an additional 19 trees within a radial circumference of the centre tree were searched for koala scats. A total of 20 trees were, therefore, searched within each formal KSAT plot, and each tree was searched for 2 person minutes or until a koala scat was found, whichever came first. Trees with yielded koala scats were marked with line-marking paint for future reference. Eight (8) formal KSAT surveys were undertaken, these were situated at each BioCondition transect site (**APPENDIX A**). A KSAT survey could not be undertaken at site T9 given the density of broad-leaved privet here.

2.2.7 Observation Sites

A total of 21 observation sites (O1-O21) were recorded across the offset area (**APPENDIX A**). Observation sites were used to record general observations such as evidence of disturbance, permanent water features, changes to weed cover (edges of infestations), opportunistic records of signs of koalas (e.g. scats and scratches on trees) and location of partially grown over or obstructed tracks. Photographs, GPS coordinates and notes were collected at each point.

2.2.8 Disturbance Surveys

Disturbance data was recorded at each formal vegetation survey plot, and opportunistically (observation sites) during site traverses at the discretion of the ecologist. At each disturbance survey site, frequency and severity were assessed and recorded for the following disturbance categories:

- Erosion;
- Fence lines;
- Fire breaks;

- Flooding;
- Grazing;
- Logging;
- Mechanical clearing;
- Prescribed burning;
- Thinning;
- Wild fire;
- Wind storm; and
- Vehicular track.

2.2.9 Data Collection Protocol

All positional, quantitative, qualitative, and photographic data was recorded using Konect® data capture software using proprietary electronic forms for the recording of specific ecological data. A Trimble TDC600 data capture unit was used to run the data capture software equipped with a Trimble extension antenna running a Trimble Catalyst high accuracy GPS subscription. Spatial accuracy of ± 3 m is generally achieved using the data capture process described.

2.2.10 Survey Limitations

Whilst a range of variation has been assessed throughout all vegetation communities/habitats encountered on-site, the entirety of each community/habitat type has not been investigated at a fine level of detail. It is acknowledged that the offset area exhibits a complex mosaic of regional ecosystem types including small pockets of distinct regional ecosystem types within broader regional ecosystem polygons across a variety of land zones. The baseline survey was focussed on collection of data suitable to characterise site condition relative to canopy and sub-canopy height and cover, cover of target weeds and occurrence of target non-native predators and herbivores. Accordingly, a detailed inventory of all flora species within each stratum was not of interest to the study. Consequently, whilst a diversity of flora species has been recorded, the inventory of flora species compiled from the survey should not be considered an exhaustive list of flora species within the site. Similarly, the fauna surveys were targeted and do not account for the full range of seasonal habitat utilisation by, or detectability of, every fauna species that may utilise the site, nor does it account for the influence of weather during preceding seasons or years upon the presence or detectability of fauna during the survey. It is also noted that site access was limiting in some circumstances, namely sheer drops at gullies and through large and dense thickets of lantana and broad-leaved privet. The site's north-west poses significant access challenges given weed cover and terrain.

Chapter 3: Results

3.1 Baseline Survey Results

For ease of application to ongoing offset management, monitoring and reporting, this chapter presents field survey results in relation to the baseline data required under condition 4 of the Approval Notice.

3.1.1 Vegetation Condition Attributes for Regional Ecosystems

Condition 4a of the Approval Notice requires that baseline vegetation condition attributes are recorded from each regional ecosystem identified within the offset area. The Approval Notice defines vegetation condition attributes as *'attributes that indicate vegetation functions for biodiversity, as defined in the most recently officially released version of Queensland's Biocondition Assessment Manual'*.

A description of each BioCondition assessment survey site (T1-T9) in terms of general condition and habitat attributes is presented in **Table 3.1**, while Biocondition assessment attributes for each regional ecosystem of transect survey sites T1-T9 are presented in **Table 3.2** below. **APPENDIX E** presents regional ecosystem mapping for the offset area while **APPENDIX F** presents biocondition data within the Habitat Quality Site Assessment tool and associated scoring for each attribute. The overall Habitat Quality Assessment score recorded for the offset area through baseline surveys was 6.17.

TABLE 3.1: CONDITION AND DISTURBANCE PROFILE OF BIOCONDITION SURVEY SITES

BIOCONDITION SURVEY SITE	CONDITION AND HABITAT ATTRIBUTES DESCRIPTION
T1	» Evidence of logging » Evidence of recent cattle grazing » Moderate to low weed intrusion » Habitat features small areas of rocky outcrops, leaf litter variable ranging from 40% to 10%, no seeps or boggy areas, 50 m from ephemeral creek, decorticating bark, young cohort of overstorey tree (none senescing)
T2	» Evidence of logging, regular from recent 5 years to 30 years + » No signs of cattle grazing in forest (along transect) but evidence on track » Habitat features – small rocks (no outcrops), fallen timber with hollows, hollow bearing trees/stags, leaf litter levels high 60-100mm » No evidence of fire (8+ years) » Mixed age class forest including scattered older growth trees
T3	» Evidence of logging 10+ years prior » Evidence of recent cattle grazing » Moderate to high weed invasion » Habitat features – significant rocky outcrops and scree upslope, variable diameter logs on ground. Very few follow bearing trees (largely associated with rocky areas and sparse) » Relatively young age class trees » Deep leaf litter - 60-80% » Evidence of fire – 5-10 years
T4	» Evidence of high intensity logging a number of log windrows » Evidence of cattle on track » Moderate to very high weed invasion (mainly Lantana) » No significant rocky outcrops, high leaf litter, old termitaria, very few hollow bearing trees, small scattered stags » Relatively young age class trees » No recent evidence of fire 8+ years » Significant dieback observed with Eucalypts and Lophostemon observed with prolific epicormic growth – expected due to prolonged drought
T5	» High weed infestation dominated by lantana, small numbers of privet and opuntia

TABLE 3.1: CONDITION AND DISTURBANCE PROFILE OF BIOCONDITION SURVEY SITES

BIOCONDITION SURVEY SITE	CONDITION AND HABITAT ATTRIBUTES DESCRIPTION
	» Evidence of high intensity logging with waste log windows within transect. Falsely increasing levels of woody debris » Relatively young cohort of age classes, no hollow bearing trees and no stags » No recent evidence of fire – 8+ years » High levels of leaf litter
T6	» Extremely high levels of lantana (camara +/- montevidensis) + small patches and thickets of privet » No recent evidence of logging » Older logging signs – canopy open – some older logging waste piles » Relatively young cohort of trees, occasional hollow bearing trees (gliders, possums) on steep rocky outcrops » No recent evidence of fire – 8+ years » Moderate level of leaf litter, no large dead wood on ground » Watercourse with rocky bend and banks through middle of transect
T7	» Moderate level of weed invasion – lantana » Heavily logged, no recent (10-15 years) evidence of logging, but older signs of logging - reflected in low woody debris score » Some woody debris large (natural) with hollows » Relatively young cohort of tree – most less than 50 years » No recent evidence of fire – 10+ years » No rocky outcrops but scattered rocks » Deep leaf litter average 75% - 100% over site » No drainage channels, seeps or other watercourses
T8	» Moderate to low level of weed infestation, heaviest near road » Heavily logged with repeated logging campaigns, however greater than 10 years » Cattle grazing observed » Fire not recorded – 10+ years » Trees generally young age cohort » No senescing trees observed » Habitat features include a number of large 50cm+ diameter logs on ground. No hollow bearing trees, no drainage features, swamps seeps in vicinity » Allocasuarina spp. in moderate numbers » No rocky outcrops and few/sparse scattered rocks » Leaf litter variable/grass cover in high areas
T9	» Very high level of weed infestation, mostly privet with some lantana. Thickets impenetrable and/or very difficult to walk through » Mid and ground layer very sparse to absent (shaded out under weeds). Some emergent Eucalypts » Heavily logged, likely in recent times (>5 years ago) » Fire not recorded – 10+ years » Trees generally young age cohort

TABLE 3.2: BIOCONDITION DATA SUMMARY FOR RES RECORDED OVER OFFSET SITE

HABITAT QUALITY ATTRIBUTES	ASSESSMENT UNIT/TRANSECT NUMBER								
	1	2	3	4	5	6	7	8	9
ASSESSMENT UNIT AREA (HA)	2	10	15	35	5	10	35	10	10
REGIONAL ECOSYSTEMS	12.8.14	12.12.2	12.9-10.14	12.9-10.17	12.12.23	12.12.23	12.9-10.17	12.12.3	12.3.7
BIOREGION	SEQ	SEQ	SEQ	SEQ	SEQ	SEQ	SEQ	SEQ	SEQ
1. RECRUITMENT OF WOODY PERENNIAL SPECIES (NUMBER OF ECOLOGICALLY DOMINANT LAYERS REGENERATING)	25.00	16.50	16.60	25.00	33.30	33.00	12.50	55.00	0.00
2. NATIVE PLANT SPECIES RICHNESS									
- TREES	5.00	6.00	3.00	7.00	6.00	5.00	8.00	5.00	4.00
- SHRUBS	3.00	4.00	3.00	4.00	2.00	3.00	3.00	5.00	0.00
- GRASSES	2.00	2.00	2.00	4.00	3.00	3.00	2.00	2.00	0.00
- FORBS	6.00	7.00	7.00	11.00	8.00	6.00	8.00	12.00	0.00
3. TREE CANOPY HEIGHT									
- CANOPY LAYER	20.00	24.00	24.00	24.00	22.00	20.00	20.00	20.00	20.00
- SUB-CANOPY LAYER	6.00	8.00	11.00	7.00	7.00	12.00	12.00	10.00	7.00
- EMERGENT LAYER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. TREE CANOPY COVER									
- CANOPY LAYER	46.50%	50.50%	46.00%	47.50%	62.00%	38.00%	50.00%	67.00%	15.00%
- SUB-CANOPY LAYER	10.00%	10.00%	20.00%	30.00%	20.00%	10.50%	13.50%	26.00%	0.00%
- EMERGENT LAYER	0.00%	0.00%		0.00%	0.00%	0.00%	6.00%	0.00%	0.00%
5. SHRUB CANOPY COVER	12.00%	21.00%	35.50%	27.50%	12.00%	30.00%	16.50%	27.00%	0.00%

TABLE 3.2: BIOCONDITION DATA SUMMARY FOR RES RECORDED OVER OFFSET SITE

HABITAT QUALITY ATTRIBUTES	ASSESSMENT UNIT/TRANSECT NUMBER								
	1	2	3	4	5	6	7	8	9
6. NATIVE PERENNIAL GRASS COVER	1.40%	7.00%	5.00%	12.00%	6.40%	11.00%	3.60%	31.00%	0.00%
7. ORGANIC LITTER	59.00%	90.00%	75.00%	87.00%	95.00%	65.00%	83.00%	49.00%	0.00%
8. LARGE TREES	20.00	20.00	12.00	20.00	18.00	22.00	18.00	15.00	6.00
9. COARSE WOODY DEBRIS (METERS)	1130.00	780.00	420.00	820.00	1260.00	400.00	420.00	545.00	0.00
10. WEED COVER	19.00%	14.50%	75.50%	27.00%	36.50%	61.50%	18.50%	21.50%	90.00%

3.1.2 Number and Extent of Grey-headed Flying-fox Foraging Species

Condition 4b of the Approval Notice requires that the number of Grey-headed flying fox foraging species in each quarter (25%) of the offset site is articulated. The Approval Notice defines Grey-headed flying-fox foraging habitat as *'areas of vegetation that contain Grey-headed flying-fox foraging trees, including winter and spring flowering species'*. Grey-headed flying foxes have been recorded to forage on the blossoms of *Eucalyptus*, *Corymbia, Angophora, Banksia and Melaleuca* species as well as some rainforest species (Commonwealth of Australia, 2021).

In total, 25 species of myrtaceous potential Grey-headed flying-fox foraging trees have been recorded over the offset area as either dominant or associates of regional ecosystem types recorded. Of these, 21 species have been reported to flower in the winter or spring. **Table 3.2** presents the regional ecosystem type(s) in which each foraging species has been recorded on site and the percentage of the offset area in which the given regional ecosystem type has been recorded. Refer to **APPENDIX E** for regional ecosystem mapping for the offset area.

TABLE 3.2: NUMBER OF MYRTACEOUS GHFF FORAGING SPECIES OVER OFFSET AREA BY RE

RE TYPE RECORDED IN OFFSET AREA	TOTAL NUMBER OF GHFF FORAGING SPECIES RECORDED	NUMBER OF GHFF WINTER/SPRING FORAGING SPECIES RECORDED	PROPORTION OF OFFSET AREA (%)
12.3.7	8	5	<13.5% (mixed polygon)
12.8.14	7	6	1.5%
12.9-10.14b	3	3	<71% (mixed polygon)
12.9-10.17c	14	13	<71% (mixed polygon)
12.12.2	6	5	<9.8% (mixed polygon)
12.12.3	6	5	<9.8% (mixed polygon)
12.12.23	9	7	<17.5% (mixed polygon)

Table 3.3 presents the Grey-headed flying-fox foraging trees recorded over the site during regional ecosystem ground truthing and biocondition surveys. The regional ecosystem type in which each species has been recorded is also presented in **Table 3.3**. Further, flowering times for each Grey-headed flying-fox foraging species are recorded in **Table 3.3**.

TABLE 3.3: FLOWERING PERIOD OF GHFF FORAGING SPECIES RECORDED ON OFFSET SITE

SPECIES	OCCURRENCE WITHIN OFFSET AREA (RE TYPE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DETAILS AND SOURCE
		SUMMER		AUTUMN			WINTER			SPRING			SUMMER	
Angophora floribunda	12.3.7													Flowering has been recorded in January, February and December (Euclid, 2021).
Angophora subvelutina	12.8.14; 12.9-10.17; 12.12.23; 12.12.2; 12.3.7													Flowering has been recorded in January, February and December (Euclid, 2021).
Angophora leiocarpa	12.12.2; 12.9-10.17; 12.12.3													Flowering has been recorded in February, November and December. (Euclid, 2021)
Corymbia citriodora	12.12.2; 12.9-10.17; 12.12.23; 12.12.3													Flowering has been recorded in January, April, May, June, July, August, October and December (Euclid 2021).
Corymbia intermedia	12.9-10.17													Flowering has been recorded in January, February, October, November and December. (Euclid)
Eucalyptus acmenoides	12.12.23; 12.9-10.17													Flowering has been recorded in April, July, August, September, October, November and December.
Eucalyptus biturbinata (syn. E. punctuata)	12.12.23													Flowering has been recorded in February, May and December (Euclid 2021).
Eucalyptus carnea	12.12.23; 12.9-10.17													Flowering has been recorded in April, September, October and November. Euclid
Eucalyptus crebra	12.8.14; 12.12.23; 12.12.3; 12.9-10.17													Flowering has been recorded all months except February (Euclid 2021).
Eucalyptus eugenioides	12.8.14													Flowering has been recorded in January, June, July, August, September, October and December (Euclid, 2021)
Eucalyptus major	12.9-10.17; 12.12.23													Flowering has been recorded in November (PlantNet, 2021).

SPECIES	OCCURRENCE WITHIN OFFSET AREA (RE TYPE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DETAILS AND SOURCE
		SUMMER		AUTUMN			WINTER			SPRING			SUMMER	
Eucalyptus melliodora	12.8.14	■	■			■	■	■	■	■	■	■	■	Flowering has been recorded in January, February, May, June, July, August, September, October, November and December (PlantNet, 2021).
Eucalyptus moluccana	12.8.14	■	■	■	■	■	■		■		■	■	■	Flowering has been recorded in January, February, March, April, May, June, August, October, November and December. (Euclid, 2021)
Eucalyptus microcorys	12.12.2; 12.9-10.14; 12.9-10.17; 12.8.14	■							■	■	■	■		Flowering has been recorded in January, August, September, October and November (Euclid, 2021).
Eucalyptus pilularis	12.12.2; 12.9-10.14; 12.9-10.17	■	■	■	■			■			■	■	■	Flowering has been recorded in January, February, March, April, July, October, November and December (PlantNet, 2021).
Eucalyptus propinqua	12.12.2; 12.9-10.17; 12.12.23; 12.12.3; 12.3.7	■	■		■									Flowering has been recorded in January, February and April (PlantNet, 2021).
Eucalyptus robusta	12.3.7					■		■	■	■	■			Flowering has been recorded in May, July August, September and October (Euclid, 2021).
Eucalyptus siderophloia	12.9-10.17	■				■		■		■	■	■	■	Flowering has been recorded in January, May, July, September, October, November and December (PlantNet, 2021).
Eucalyptus tereticornis	12.8.14; 12.12.2; 12.9-10.17; 12.12.23; 12.12.3; 12.3.7	■	■		■	■	■	■	■	■	■	■		Flowering has been recorded in January, February, April, May, June, July, August, September, October and November (PlantNet, 2021).
Eucalyptus tindaliae	12.9-10.17					■	■		■					Flowering has been recorded in May, June and August in tropical north-eastern Australia and in more southerly warm-temperate areas in January, February and March (PlantNet, 2021).

SPECIES	OCCURRENCE WITHIN OFFSET AREA (RE TYPE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DETAILS AND SOURCE
		SUMMER		AUTUMN			WINTER			SPRING			SUMMER	
Lophostemon confertus	12.9-10.14; 12.9-10.17; 12.12.23; 12.12.3													Flowering has been recorded from October – December (PlantNet, 2021)
Melaleuca bracteata	12.3.7													Flowering has been recorded in Spring (PlantNet, 2021)
Melaleuca linariifolia	12.3.7													Flowering has been recorded in Spring – Summer (PlantNet, 2021)
Melelauca trichostachya	12.3.7													Flowering has been recorded in Summer (PlantNet, 2021)
Melaleuca viminalis	12.3.7													Flowering has been recorded Spring to early Summer, also sporadically throughout the year. (PlantNet, 2021)

3.1.3 Extent of Weed Cover

Condition 4c of the Approval Notice requires that the Extent of Weed Cover across the offset area is articulated. The Approval Notice defines Extent of Weed Cover as *the proportion (expressed as a percentage) of the total land area in which any square metre contains a non-native plant species known to restrict the movement of koala and/or degrade the quality of koala habitat and/or habitat for Grey-headed flying-fox, or its ability to regenerate. Such non-native plant species include Lantana camara and Ligustrum lucidium*.

Vegetation surveys undertaken by New Ground (2015; 2019) and the current baseline surveys identified Lantana and Broad-leaved privet to be the weed species of management concern over the offset area with respect to restriction of koala movement and inhibitors to regeneration of koala and grey-headed flying fox habitat resources. Weed cover (projected foliage cover) was recorded over the offset area via quaternary and observation survey sites. The offset area was mapped according to four weed density classes (scattered (<25% cover), scattered to dense (26-75% cover), dense (76-90% cover) and impenetrable (>90% cover)).

APPENDIX G presents the results of weed mapping undertaken over the offset area, while **Table 3.4** summarises weed cover extent over the offset area. Representative photographs of weed thickets are presented in **APPENDIX D**.

TABLE 3.4: BASELINE EXTENT OF WEED COVER OVER OFFSET AREA

SCATTERED (<25%) (HA)	SCATTERED TO DENSE (26-75%) (HA)	DENSE (76-90%) (HA)	IMPENETREBLE (>90%)
84.8	5.6	32.6	8.9

3.1.4 Number of Non-native Predators and Non-native Herbivores

Camera trap survey data was used to determine baseline abundance of non-native predators and non-native herbivores. Conclusive identification of individual animals of a given species was not always possible and as such the data could not be used to arrive at a number of individuals recorded over the survey period. However, number of occurrences of each species at each camera trapping site was used to provide a measure of baseline abundance at each camera trap site and across the offset site as a whole. **Table 3.6** presents the non-native predator and non-native predator species of interest to the ongoing management of the offset area as a koala and grey-headed flying fox habitat offset. Location of each camera trap site is presented in **APPENDIX B**.

TABLE 3.5: BASELINE NON-NATIVE PREDATOR AND HERBIVORE ABUNDANCE OVER OFFSET AREA

CAMERA TRAP SITE	NUMBER OF TRAP NIGHTS	SPECIES OF INTEREST (OCCURRENCES)				
		*CANIS FAMILIARIS**	*VULPES VULPES**	*CERVUS ELAPHUS**	*BOS TAURUS**	*CANIS LUPUS*
C1	45	3	0	0	>45	1
C2	46	2	0	1	>46	-
C3	46	4	0	5	>46	1
C4	46	1	0	6	>46	1
C6	45	4	1	0	>45	1
C7	46	6	1	8	>46	3
C9	45	3	0	2	>45	0
TOTAL	**319**	**23**	**2**	**22**	**>319**	**7**
ABUNDANCE INDEX		**0.072100313**	**0.006269592**	**0.068965517**	**1**	**0.021943574**

A herd of domestic cattle (estimated at 30 individuals) was recorded across the offset area at each camera trap location. This herd is anticipated to be roaming onto the offset area from adjacent properties. Given the high number of images of cattle collected on camera traps (~3000), individual occurrences of cattle were not recorded. For the purpose of the baseline survey, expression of domestic cattle presence as an occurrence each trap night was deemed sufficient since a management objective for the offset area is total exclusion of domestic cattle.

Wild dogs (*Canis familiaris**) were recorded (23 occurrences or 0.072 per trap night) across all of the camera trap sites. Review of imagery revealed occurrences of dogs better resembling dingos (*Canis lupus*) based on skull morphology and colouration (see **Plates 1 and 2**). Dingo was less frequently recorded than wild dogs at 7 occurrences (or 0.021 per trap night) and appears less widespread through the offset area with occurrences at 85% of the camera trap sites. Wild dog and dingo occurrences were differentiated to guide ongoing offset management. This is pertinent since dingos are a native species and are not a target of predator reduction objectives over the offset area. However, wild dogs are a target for predator number reduction throughout the offset site.

PLATE 1. DINGO RECORDED AT SITE C7

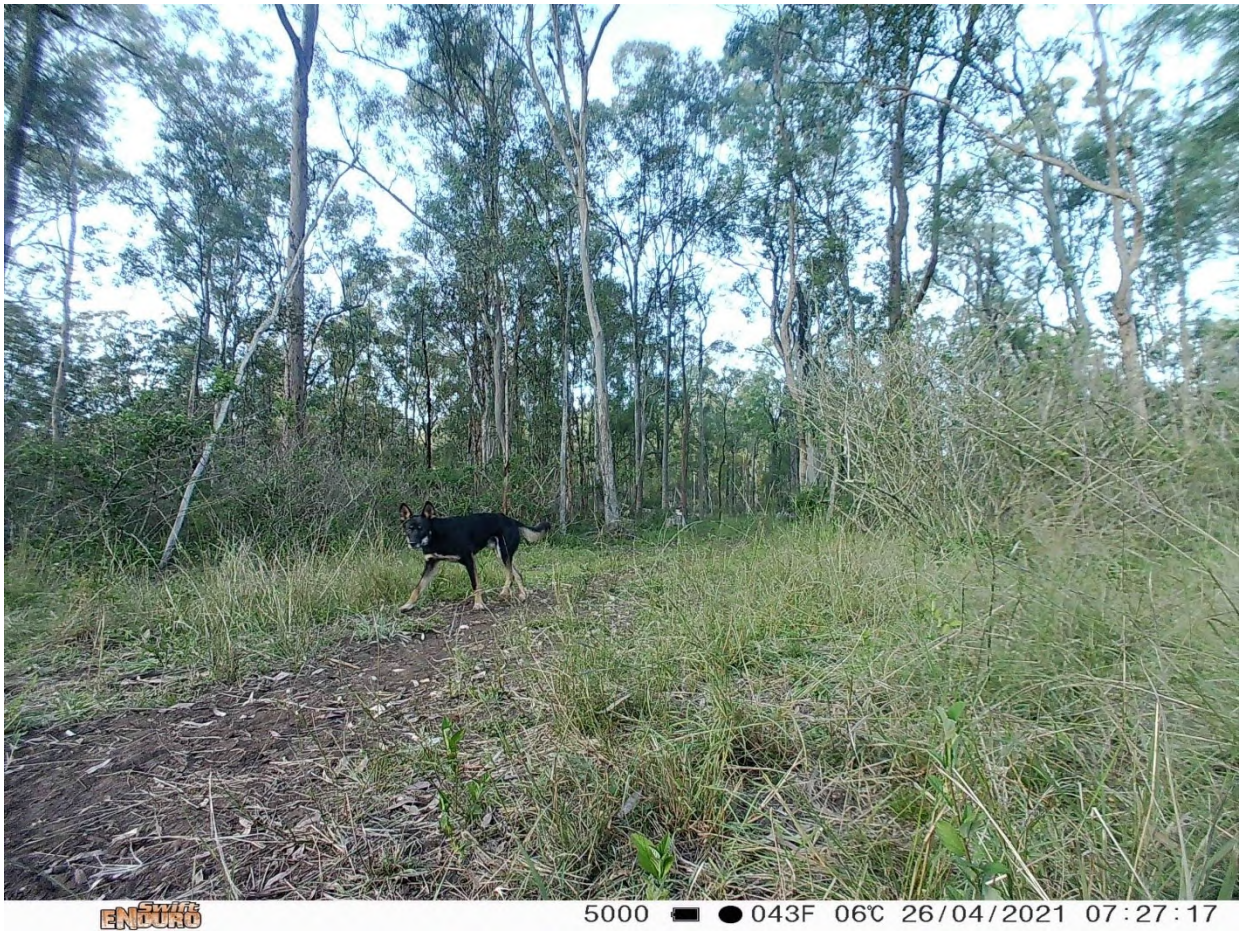


PLATE 2. WILD DOG RECORDED AT SITE C7

Red deer (*Cervus elaphus**) was the most frequently recorded non-native herbivore with a total of 22 occurrences (0.068 per trap night). Individuals from a mixed aged cohort were recorded, including juveniles and breeding-aged stags and does. Refer to **Plate 3** for picture of a stag recorded at C7. This species is of management interest given the deleterious impact it can have on native vegetation communities (including koala and grey-headed flying fox habitat resources) in terms of trampling/ringbarking, inhibiting natural regeneration (via browsing on understorey) and introduction of weed seeds (DAF, 2020).

PLATE 3. STAG RECORDED AT C7

A low abundance of fox (*Vulpes vulpes**) was recorded with two (2) records (0.006 per trap night) collected (**Plate 4)**. Feral cat (*Felis cattus**) was not recorded during surveys. The low level of fox and cat abundance may be associated with the relatively high abundance of wild dogs and dingoes on the offset area (NSW TSSC, 2020).

PLATE 4. FOX RECORDED AT C8

3.1.5 Koala Mortalities

Direct or indirect records of koala mortality were not observed during baseline surveys. Notwithstanding, koala scat activity technique (KSAT), opportunistic and camera trapping surveys revealed wide-spread use of the offset area by the species. Koala activity levels at formal baseline survey sites were calculated using the KSAT method (Philips and Callaghan, 2011) for reference in ongoing management and monitoring of the offset area.

TABLE 3.6 summarises the results of baseline KSAT surveys undertaken over the offset area. Activity levels were calculated for each survey site using the methodology associated with the KSAT methodology. Refer to **APPENDIX A** for location of KSAT survey sites and **APPENDIX D** for representative photographs.

TABLE 3.6: BASELINE KSAT SURVEY RESULTS

KSAT SITE (RE TYPE)	TREES WITH KOALA SCATS	ACTIVITY LEVEL BASED ON SCATS (%)
KSAT 1 (12.12.2)	7	35
KSAT 2 (12.9-10.17c)	2	10
KSAT 3 (12.9-10.14b)	0	0
KSAT 4 (12.8.14)	1	5
KSAT 5 (12.12.3)	0	0
KSAT 6 (12.12.23)	0	0
KSAT 7 (12.9-10.17c)	0	0
KSAT 8 (12.12.3)	0	0

Koala activity levels were lowest at areas of the offset area densely infested with Lantana (*Lantana camara*)* and Broad-leaved privet (*Ligustrum lucidium**). As noted in section 2.2.6, impenetrable thickets of *L.lucidium* prevented KSAT survey at site T9.

As shown in **Plate 5**, Koala was recorded at camera trapping site C1.

PLATE 5 KOALA RECORDED AT CAMERA TRAP SITE C1

Chapter 4: Conclusion

4.1 Conclusion

This report has been prepared to document baseline ecological values of the Meads offset site with respect to the attributes called up by condition 4 of the DAWE (2020) approval notice pertaining to Woogaroo Heights master planned residential development, Springfield Queensland (EPBC 2017/7875), dated 30 November 2020. Baseline survey data is to be used in ongoing monitoring and adaptive management of the offset site for achievement of the ecological condition performance indicators outlined by condition 7 of the above-referenced approval notice.

References

BoM (2021). Climate Data Online. Bureau of Meteorology. Accessed from http://www.bom.gov.au/climate/data/

Cogger, H.G. (2000). *Reptiles and Amphibians of Australia - 6th edition*. Sydney, NSW: Reed New Holland.

DAF (2020). Feral red deer (Cercus elaphus) – Restricted invasive animal (fact sheet). Queensland Department of Agriculture and Fisheries 2020.

DAWE (2020). Protected Matters Search Tool. Department of Agriculture, Water and the Environment. http://www.environment.gov.au/webgis-framework/apps/pmst/pmst-coordinate.jsf

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

DES (2020). Guide to determining terrestrial habitat quality. Methods for assessing habitat quality under the Queensland Environmental Offsets Policy, Version 1.3 February 2020. Department of Environment and Science, Brisbane.

Dique D.S., de Villiers, D.L., Preece. H.J. (2013). Evaluation of line-transect sampling for estimating koala abundance in the Pine Rivers Shire, south-east Queensland in Wildlife Research 30(2) 127-133. 20 June 2003.

Eyre, T.J., Kelly, A.L, Neldner, V.J., Wilson, B.A., Ferguson, D.J., Laidlaw, M.J. and Franks, A.J. (2015). BioCondition: A Condition Assessment Framework for Terrestrial Biodoversoty in Queensland. Assessment Manual. Version 2.2., Queensland Herbarium, Department of Science, Information Technology, Innovation and Arts, Brisbane.

DNRM (2004). Regional geology 1978 -. Accessed via Queensland Spatial Catalogue. Department of Resources and Mines, 2018.

DNRM (2021). Regulated Vegetation Management Map. Department of Natural Resources and Mines, Queensland Government, Brisbane.

DSITIA (2012). Technical Descriptions of Regional Ecosystems of Southeast Queensland. South East Queensland Benchmarks. Department of Science, Information Technology and Innovation, Brisbane, Queensland.

DSITIA (2016). BioCondition Benchmarks for Regional Ecosystem Condition Assessment. South East Queensland Benchmarks. Department of Science, Information Technology and Innovation, Brisbane, Queensland.

Floyd, A.G. (1989). Rainforest Trees of Mainland South-eastern Australia. Melbourne: Inkata Press.

Harden, G. 1990. Flora of New South Wales. Volume 1. Sydney. UNSW Press

Harden, G.J. (Ed.) (1992). *Flora of New South Wales* Volume 3. Kensington, NSW: University of NSW Press.

Harden, G. J. (Ed) (2005). *Flora of New South Wales, Volume One*, University of New South Wales Press, Sydney.

Harden, G., McDonald, B. and Williams, J., (2006). *Rainforest Trees and Shrubs: A field guide to their identification*. Gwen Harden Publishing, Nambucca Heads, NSW, Australia.

Harden, G., McDonald, B. and Williams, J., (2007). *Rainforest Climbing Plants: A field guide to their identification*. Gwen Harden Publishing, Nambucca Heads, NSW, Australia.

Hewson, H.J. (1985). Simaroubaceae. In: Flora of Australia. 25:188-196. Canberra, ACT: AGPS.

Higgins, P.J. & S.J.J.F. Davies, eds (1996). Handbook of Australian, New Zealand and Antarctic Birds. Volume Three - Snipe to Pigeons. Melbourne, Victoria: Oxford University Press.

Neldner, V.J., Wilson, B.A., Thompson, E.J. and Dillewaard, H.A. (2019) *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland*. Version 5. Queensland Herbarium, Queensland Department.

New Ground (2015). Technical Summary of Koala Habitat Offset Site Proposal – Lot 18 on CA31460. New Ground Environmental Pty Ltd, Mudgeeraba.

New Ground (2019). Response to Additional Information for Preliminary Documentation to Environmental Offsets and Woogaroo Heights Master Planned Residential Development (EPBC 2017/7875.

NSW TSSC (2020). Notice of and reasons for the Final Determination (Cascading effects of the loss or emoval of dingoes from New South Wales landscapes as a Key Threatening Process). New South Wales Threatened Species Scientific Committee, 21 August 2020.

Phillips, S., and Callaghan, D., (2011). The Spot Assessment Technique: determining the importance of habitat utilisation by Koalas (Phascolarctos cinereus). Australian Koala Foundation.

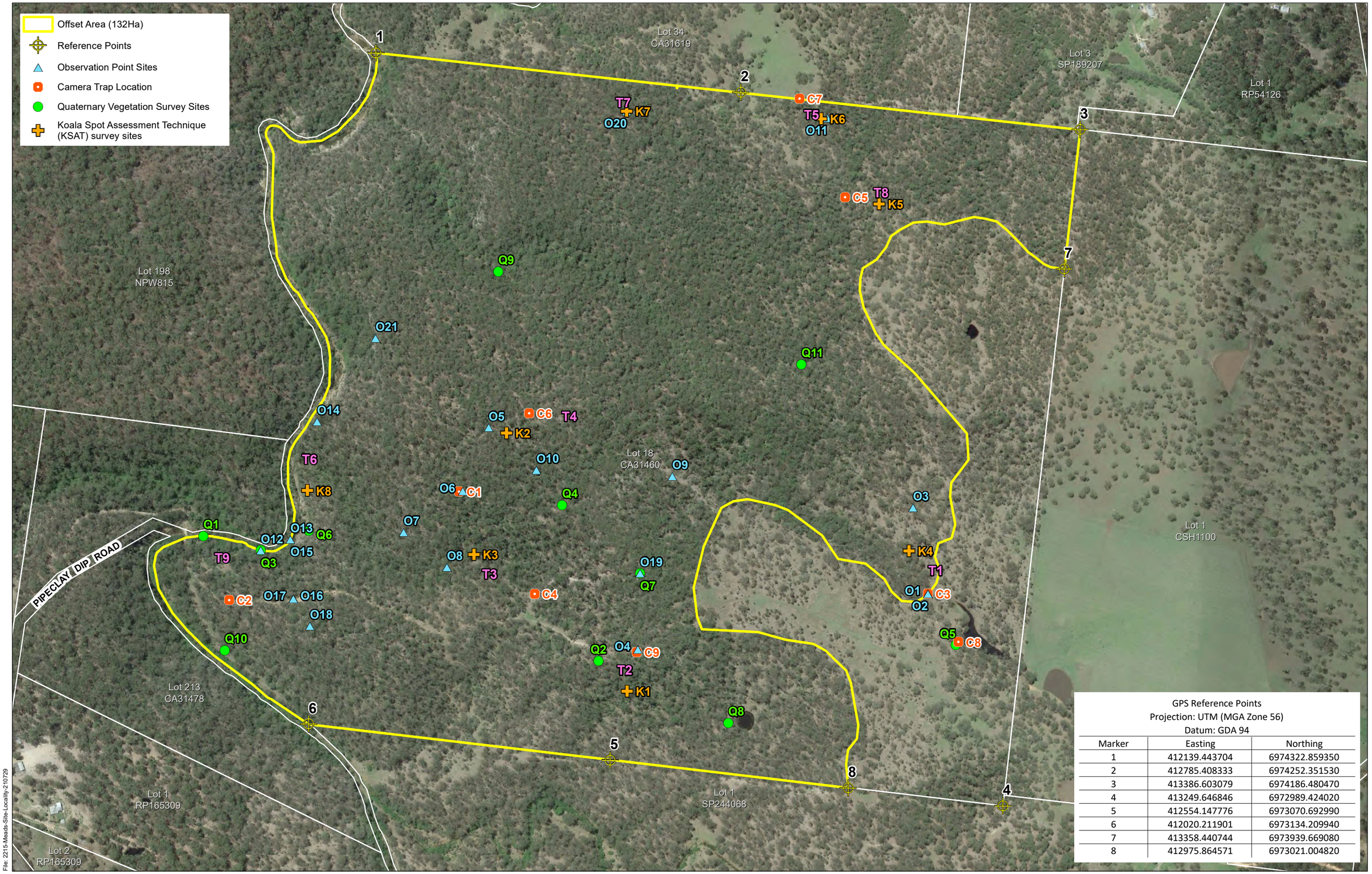
Queensland Herbarium (2021) Regional Ecosystem Description Database (REDD). Version 12 (March 2021), Department of Environment and Science, Brisbane.

Triggs, B (2011). Tracks, Scats and Other Traces – A Field Guide to Australian Mammals. Revised edition, Oxford University Press, Melbourne Australia.

Wilson, P.R. and Taylor, P.M. (2012) Land Zones of Queensland. Queensland Herbarium, Queensland Department of Science, Information Technology, Innovation and the Arts, Brisbane

APPENDIX A

Site Locality Plan



File: 2215-Meads-Site-Locality-210729

GPS Reference Points
Projection: UTM (MGA Zone 56)
Datum: GDA 94

Marker	Easting	Northing
1	412139.443704	6974322.859350
2	412785.408333	6974252.351530
3	413386.603079	6974186.480470
4	413249.646846	6972989.424020
5	412554.147776	6973070.692990
6	412020.211901	6973134.209940
7	413358.440744	6973939.669080
8	412975.864571	6973021.004820

SITE LOCALITY PLAN - LOT 18CA31460

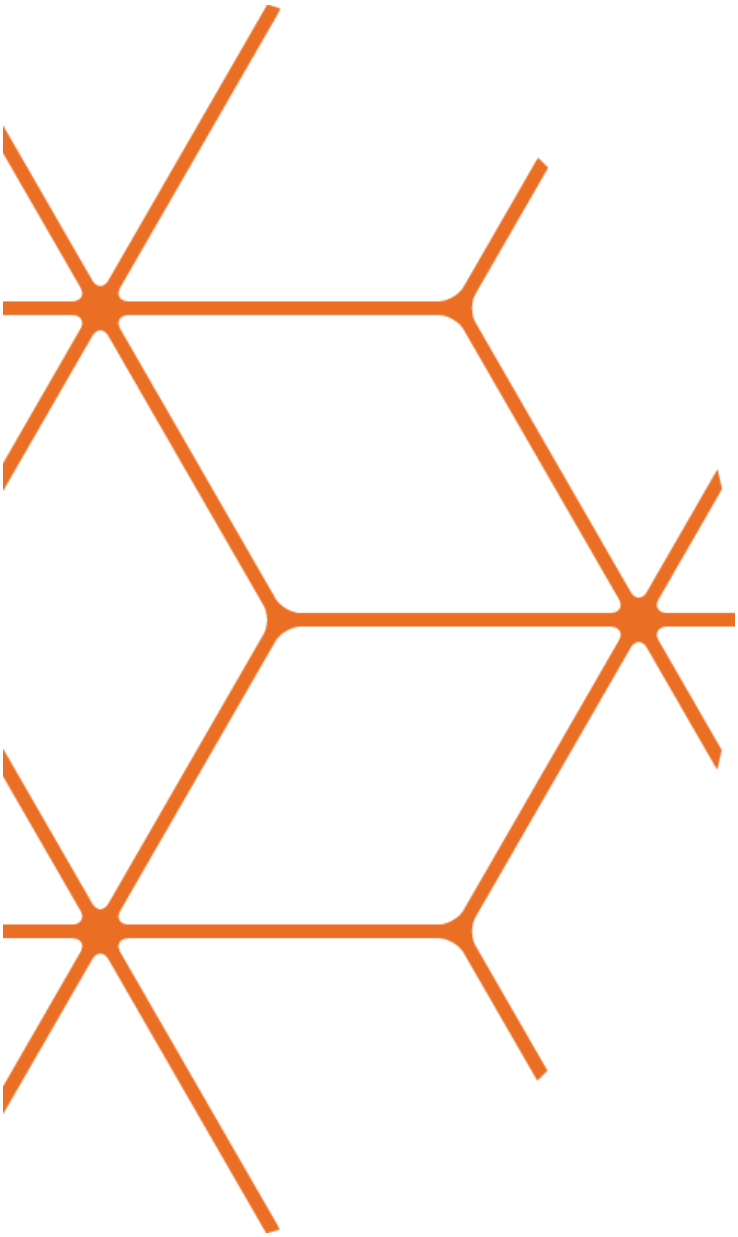
0 100 200 300 400 500 Meters

A3 Scale 1:6,000

Sheet Number: 1
Project: 2215
Version: 0
Date: 22/03/19
Sources: Cadastral boundaries: QLD DCDB DNRM 2021
Aerial Photo: Google Earth 11/1/2017

APPENDIX B

Approval Notice



Australian Government
Department of Agriculture, Water and the Environment

APPROVAL

Woogaroo Heights master planned residential development, Springfield, Queensland (EPBC 2017/7875)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). Note that section 134(1A) of the **EPBC Act** applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Lendlease Communities (Springfield) Pty Limited
ACN or ABN of approval holder	19 087 876 864
Action	To develop the Woogaroo Heights residential development located within the Greater Springfield Master Planned Development Area, approximately 10 kilometres east of the Ipswich Central Business District, Queensland [See EPBC Act referral 2017/7875].

Approval decision

My decision on whether or not to approve the taking of the action for the purposes of the controlling provision for the action is as follows.

Controlling Provisions

Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve

Period for which the approval has effect

This approval has effect until 2033.

Decision-maker

Name and position	Kim Farrant Assistant Secretary, Environment Approvals Queensland and Sea Dumping Branch Department of Agriculture, Water and the Environment
Signature	
Date of decision	30 November 2020

Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

Development area

1. For the protection of the **Koala** and the **Grey-headed Flying-fox**, the approval holder must not **clear** more than 57.03 hectares of **Koala habitat** and **Grey-headed Flying-fox foraging habitat**. The approval holder must only **clear** within the **development area**.
2. For the protection of the **Koala** and the **Grey-headed Flying-fox** at the **development area**, the approval holder must:
   a. Ensure that a **fauna spotter/catcher** is present during all **clearing** and **construction** activities and given sufficient authority to ensure that such activities do not cause injury or death of **Koalas**;
   b. **Clear** in accordance with the *Nature Conservation (Koala) Conservation Plan 2017* under the *Nature Conservation Act 1992* (Qld) to allow **Koalas** to safely move out of **clearing** areas and into connected areas of **Koala habitat**, and implement all provisions for **sequential clearing**;
   c. Install temporary **Koala exclusion fencing** around any area of **construction** work, immediately after **clearing** and prior to the commencement of **construction** in that area, so as to prevent **Koalas** entering any area where **construction** is taking place. The **Koala exclusion fencing** around any **construction** area must remain in place until all **construction** activities within that fenced **construction** area are completed;
   d. Implement measures to prevent dogs from entering the **development area** during **clearing** and **construction** to minimise the risk to **Koalas** of predation by domestic dogs at the **development area** and **adjacent conservation areas**. Such measures must include (but are not limited to) prohibition of workers bringing animals in to the **development area**;
   e. Implement traffic calming measures and ensure that the speed of all vehicles on construction roads in the **development area** is no greater than 40 km/h at any time (except an emergency) so as to minimise the risk to **Koalas** of vehicle strike;
   f. Construct roads consistent with **Queensland's fauna sensitive road design guidelines** to minimise the risk to **Koalas** of vehicle strike. In particular, on roads flanking **adjacent conservation areas** or waterways, or which cross waterways, vehicle speeds must be limited to 50 km/h, and **safe fauna movement solutions**, **fauna exclusion/koala proof fencing** and **local traffic management measures** must be implemented; and
   g. Install prominent **Koala** awareness signage consistent with **Queensland's wildlife signing guidelines** prior to opening to motorists, any road where the presence of animals along the road path is well-known or expected, such as on roads flanking **adjacent conservation areas** or adjacent to **fauna movement solutions**.

Environmental Offset Requirements

3. To compensate for the **clearing** of 57.03 hectares of **Koala habitat** and **Grey-headed Flying-fox foraging habitat**, the approval holder must:
   a. **Legally secure** a minimum of 132 hectares at **The Meads offset site** prior to undertaking any **clearing** at the **development area**;
   b. Within 20 **business days** of **legally securing The Meads offset site**, provide the **Department** with written evidence demonstrating that **The Meads offset site** has been **legally secured** (e.g. **legal security documentation**), and the **shapefiles** of the **offset attributes**;

c. Limit uses and permissible activities at **The Meads offset site** such that the value of **The Meads offset site** as **Koala habitat** and **Grey-Headed Flying-fox foraging habitat** cannot lawfully be reduced.

4. Within 6 months from the date of this approval, the approval holder must complete baseline surveys of the entire area at **The Meads offset site**. The baseline surveys must be conducted by a **suitably qualified field ecologist** in accordance with a scientifically valid, robust, and repeatable methodology and include details of the:
   a. **Vegetation condition attributes** for each **Regional Ecosystem**;
   b. Number and condition of **Grey-Headed Flying-fox** foraging species in each quarter (25%) of **The Meads offset site**;
   c. **Extent of weed cover**;
   d. Number of **non-native predators** and **non-native herbivores**; and
   e. Rate of **Koala** mortalities attributable to **non-native predators**.
5. Within 3 months of completion of the baseline surveys required under condition 4, the approval holder must publish on the **website** and provide to the **Department** a report detailing the results of the baseline surveys required under condition 4 (including survey methodology and dates).
6. For the protection of the **Koala** (and **Koala habitat**) and the **Grey-headed Flying-fox** (and **Grey-headed Flying-fox foraging habitat**), the approval holder must achieve the following outcomes at **The Meads offset site** by the end of **year 1**:
   a. Repair and maintain the existing perimeter fencing to exclude all livestock from **The Meads offset site**;
   b. Remove all barbed-wire fencing at **The Meads offset site**, excluding existing **perimeter barbed-wire fencing**; and
   c. Increase the visibility to fauna of **perimeter barbed-wire fencing**, including by affixing visibility tags at every 30 cm interval along the top strand of **perimeter barbed-wire fencing**.
7. For the protection of the **Koala** (and **Koala habitat**) and the **Grey-headed Flying-fox** (and **Grey-headed Flying-fox foraging habitat**), the approval holder must achieve the following outcomes at **The Meads offset site** by the end of **year 8**:
   a. Restore vegetation condition to the 'BioCondition Benchmarks to be achieved' for each **Regional Ecosystem**, as specified at Attachment A;
   b. Ensure that at least 6 different **Grey-Headed Flying-fox foraging species** (which in combination must provide annual winter and spring foraging resources for the **Grey-headed Flying-fox**) occurs within each quarter (25%) of **The Meads offset site**;
   c. Ensure that the **extent of weed cover** across the whole of **The Meads offset site** is less than 5%;
   d. A reduction in the numbers of **non-native predators** and **non-native herbivores** by 90%, relative to the numbers identified during baseline surveys; and
   e. A reduction in the rate of **Koala** mortalities attributable to **non-native predators** by 90%, relative to the numbers identified during baseline surveys.
8. Once achieved, environmental outcomes specified under conditions 6 and 7 must be maintained for the remainder of the period of effect of the approval.
9. For the protection of the **Spotted-tail Quoll** present at **The Meads offset site**, the approval holder must ensure that any use of 1080 baits at **The Meads offset site** is undertaken in accordance with the **Administrative Guidelines on the use of 1080**.

10. The approval holder must engage a **suitably qualified independent expert** to undertake an assessment of **The Meads offset site** at the end of **year 4** to assess whether the outcomes required in conditions 6, 7 and 8 have been, or are likely to be, achieved. The findings of the assessment must be **published** within 6 months of the end of **year 4** and be provided to the **Department** within 5 **business days** of being **published**.

11. If, at any time during the period of effect of the approval, the **Minister** is not satisfied that any of the requirements or outcomes required under conditions 6, 7 and 8 have been or are likely to be achieved or maintained, the **Minister** may require the approval holder to submit a corrective action plan for **The Meads offset site** for the **Minister's** approval, or to monitor, manage, avoid, mitigate, offset, record and/or report on, impacts to the **Koala**, the **Grey-headed Flying-fox**, or the **Spotted-tail Quoll**.

    a. The **Minister** may set a timeframe in which the corrective action plan must be submitted, and may specify that the corrective action plan must be prepared or reviewed by an **independent suitably qualified field ecologist**.

    b. If the **Minister** approves the corrective action plan, the approval holder must implement the approved corrective action plan.

Part B – Standard administrative conditions

Notification of date of commencement of the action

12. The approval holder must notify the **Department** in writing of:

    a. the date of **commencement of the action** within 5 **business days** after the date of **commencement of the action**;

    b. the date of commencement of **clearing** within 5 **business days** after the date of commencement of **clearing**; and

    c. the date of commencement of **construction** within 5 **business days** after the date of commencement of **construction**.

13. If the **commencement of the action** does not occur within 5 years from the date of this approval, then the approval holder must not undertake **commencement of the action** without the prior written agreement of the **Minister**.

Compliance records

14. The approval holder must maintain accurate and complete **compliance records**.

15. If the **Department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request.

Note: **Compliance records** may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department**'s website or through the general media.

Annual compliance reporting

16. The approval holder must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or otherwise in accordance with an annual date that has been agreed to in writing by the **Minister**. The approval holder must:

    a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;

    b. notify the **Department** by email that a **compliance report** has been published on the **website** and provide the weblink for the **compliance report** within 5 **business days** of the date of publication;

    c. keep all **compliance reports** publicly available on the **website** until this approval expires;

d. exclude or redact **sensitive ecological data** from **compliance reports** published on the **website**; and

e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: Compliance reports may be published on the **Department**'s website.

Reporting non-compliance

17. The approval holder must notify the **Department** in writing of any: **incident**; or non-compliance with the conditions. The notification must be given as soon as practicable, and no later than 2 **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:

    a. any condition which is or may be in breach;

    b. a short description of the **incident** and/or non-compliance; and

    c. the location (including co-ordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.

18. The approval holder must provide to the **Department** the details of any **incident** or non-compliance with the conditions as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:

    a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;

    b. the potential impacts of the **incident** or non-compliance; and

    c. the method and timing of any remedial action that will be undertaken by the approval holder.

Independent audit

19. The approval holder must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**.

20. For each **independent audit**, the approval holder must:

    a. provide the name and qualifications of the independent auditor and the draft audit criteria to the **Department**;

    b. only commence the **independent audit** once the audit criteria have been approved in writing by the **Department**; and

    c. submit an audit report to the **Department** within the timeframe specified in the approved audit criteria.

21. The approval holder must publish the audit report on the **website** within 10 **business days** of receiving the **Department's** approval of the audit report and keep the audit report **published** on the **website** until the end date of this approval.

Completion of the action

22. Within 30 days after the **completion of the action**, the approval holder must notify the **Department** in writing and provide **completion data**.

Part C - Definitions

In these conditions, except where contrary intention is expressed, the following definitions are used:

Adjacent conservation area/s means areas adjacent to the **development area**, which have been designated for conservation purposes under the Springfield Structure Plan, and the White Rock–Spring Mountain Conservation Estate.

Administrative Guidelines on the use of 1080 means Department of the Environment and Heritage 2004, *Administrative Guidelines on Significance: Supplement for the Tiger Quoll (southeastern mainland population) and the use of 1080*, Commonwealth of Australia, or subsequent published revision.

Business day means a day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.

Clear/Clearing means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation (but not including weeds – see the *Australian weeds strategy 2017 to 2027* for further guidance). **Clearing** does not include any relevant prescribed burns or actions undertaken for bushfire management, where required.

Commencement of the action means the first instance of any specified activity associated with the action including **clearing**, **construction** and/or **management activities** at **The Meads offset site**. **Commencement of the action** does not include minor physical disturbance necessary to:

i. undertake pre-clearance surveys or monitoring programs;

ii. install signage and /or temporary fencing to prevent unapproved use of the project area so long as these are located where it will have no impact on the **protected matters**;

iii. protect environmental and property assets from fire, weeds and feral animals, including use of existing surface access tracks;

iv. install temporary site facilities for persons undertaking pre-commencement activities so long as these are located where they have no impact on the **protected matters**; and

v. undertake soil sampling or geotechnical investigations provided these cause only minor physical disturbance and are required in advance of formal commencement of site works.

Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met. The **Department**'s preferred spatial data format is **shapefile**.

Completion of the action means the time at which all approval conditions (except condition 22) have been fully met.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the approval holder's power to obtain lawfully.

Compliance reports means written reports:

i. providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions;

ii. consistent with the **Department's** *Annual Compliance Report Guidelines* (2014); and

iii. include a **shapefile** of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period.

Construction means the erection of a building or structure that is or is to be fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; preliminary site preparation work which involves breaking of the ground (including pile driving); the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding the installation of temporary fences and signage.

Department means the Australian Government agency responsible for administering the **EPBC Act**.

Development area means the area designated as 'Referral Area' on the map at Attachment B and enclosed by a thick black border.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Extent of weed cover means the proportion (expressed as a percentage) of the total land area in which any square metre contains a non-native plant species known to restrict the movement of **Koala** and/or degrade the quality of **Koala habitat** and/or habitat for **Grey-headed Flying-fox**, or its ability to regenerate. Such non-native plant species include *Lantana camera* and *Ligustrum lucidum.*

Fauna exclusion/koala proof fencing means fencing to guide **Koalas** away from roads and/or guide them towards safe fauna movement structures (such as underpasses) as described in *Fauna Sensitive Road Design: Volume 2 – Preferred Practices* (Queensland Department of Main Roads 2010).

Fauna spotter/catcher means a person licenced under the Queensland *Nature Conservation Act 1992* to detect, capture, care for, assess, and release wildlife disturbed by vegetation clearance activities.

Grey-Headed Flying-fox means the Grey-Headed Flying-fox (*Pteropus poliocephalus*) listed as a threatened species under the **EPBC Act**.

Grey-Headed Flying-fox foraging habitat means areas of vegetation that contain **Grey-headed Flying-fox** foraging trees, including winter and spring flowering species.

Incident means any event which has the potential to, or does, impact on one or more **protected matter(s)**.

Independent means does not have any individual, or by employment or family affiliation, conflicting or competing interests with the approval holder; the approval holder's staff, representatives or associated persons; or the project, including any personal, financial, business or employment relationship, other than receiving payment for undertaking the role for which the condition requires and independent person.

Independent audit means an audit conducted by an **independent** and suitably qualified person as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2019).

Koala means the Koala *Phascolarctos cinereus* (combined populations of Queensland, New South Wales and the Australian Capital Territory) listed as a threatened species under the **EPBC Act**.

Koala exclusion fencing means fencing which prevents the movement of koalas from one area to another. Suitable examples are found in *Koala Sensitive Design Guideline: A guide to koala sensitive designed measures for planning and development activities, (Queensland Department of Environment and Heritage Protection, 2012)* and in the **Koala referral guidelines**.

Koala food trees means a species of tree of genus *Angophora, Corymbia, Eucalyptus, Lophostemon* or *Melaleuca*, with a height of more than 4 metres or with a trunk circumference more than 31.5 centimetres at 1.3 metres above the ground, the leaves of which are known to be consumed by the **Koala**.

Koala habitat means any forest or woodland containing species that are known **Koala food trees**, or shrubland with emergent food trees (as defined in the **Koala referral guidelines**).

Koala referral guidelines means the **Department's** *EPBC Act referral guidelines for the vulnerable Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory),* Commonwealth of Australia, 2014.

Legally secure/ed/ing means to provide ongoing conservation protection on the title of the land, under a voluntary declaration under the *Vegetation Management Act 1999* (Qld).

Legal security documentation means any documentation associated with **legally securing the Meads offset site**, including (but not limited to) associated management plans (for example, the Declared

Area Management Plan to support the voluntary declaration under the *Vegetation Management Act 1999* (Qld)). **Legal security documentation** must include (at a minimum) the following:

i. Details of the **management activities** to be undertaken to achieve the outcomes prescribed under conditions 6 and 7; and

ii. A commitment to achieve and maintain the outcomes prescribed under conditions 6 and 7 for the duration of the impact.

Local traffic management measures means devices that reduce the speed and/or volume of traffic, for example, road closures, chicanes, crosswalks, lighting, signage and rumble strips, as described in **Queensland's fauna sensitive road design guidelines**.

Management activities means activities to be undertaken at **The Meads offset site**, including (but not limited to):

i. Baseline surveys to inform development and implementation of management measures to achieve outcomes;

ii. Perimeter fencing repairs and maintenance;

iii. Barbed-wire fencing removal and modification;

iv. Weed management; or

v. Non-native predator and/or non-native herbivore management.

Minister means the Australian Government Minister administering the **EPBC Act** including any delegate thereof.

Non-native predators means any non-native animals known to predate on the **Koala**.

Non-native herbivores means any non-native animals known to degrade the quality of **Koala habitat** and/or **Grey-headed Flying-fox foraging habitat** and/or prevent its ability to regenerate.

Offset attributes means an '.xls' file capturing relevant attributes of **The Meads offset site**, including:

i. **EPBC Act** reference number

ii. Physical address of **The Meads offset site**;

iii. Coordinates of the boundary points in decimal degrees;

iv. **Protected matters** that the offset compensates for;

v. Any additional **EPBC Act** listed threatened species and communities that are benefiting from the offset; and

vi. Size of **The Meads offset site** in hectares.

Perimeter barbed-wire fencing means existing barbed-wire along the north, east and south perimeter of **The Meads offset site** erected to manage livestock.

Protected matter means a matter protected under a controlling provision in Part 3 of the **EPBC Act** for which this approval has effect.

Publish means make publicly available on the **website** for the duration of this approval.

Queensland's fauna sensitive road design guidelines means Queensland Department of Main Roads 2010, *Fauna Sensitive Road Design. Volume 2 – Preferred Practices*, or subsequent published revision.

Queensland's wildlife signing guidelines means Queensland Department of Transport and Main Roads 2019, *Traffic and Road Use Management, Transport and Main Roads Volume 3 – Signing and Pavement Marking, Part 8: Wildlife Signing Guidelines*, or subsequent published revision.

Regional Ecosystem means a vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil as classified by the Queensland Government under the *Vegetation Management Act 1999* (Qld). **Regional Ecosystems** at **The Meads offset site** include RE 12.3.7, RE 12.8.14, RE 12.9-10.17c, RE 12.9-10.14b, RE 12.12.2 and RE 12.12.23, located as shown on the map at Attachment D.

Safe fauna movement solutions means measures to minimise the risk of injury or deaths of **Koalas** during **construction** and subsequently, such as **fauna exclusion/koala proof fencing**, fauna underpasses or overpasses, and/or bridges as described in **Queensland's fauna sensitive road design guidelines**.

Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) *Sensitive Ecological Data – Access and Management Policy V1.0*.

Sequential clearing means the conditions for *Sequential clearing in Koala district A or B* under the *Nature Conservation (Koala) Conservation Plan 2017* under the *Nature Conservation Act 1992* (Qld). The conditions include provisions for the amount of area which may be **cleared** in any one stage, periods of non-**clearing** between stages, maintaining habitat links and restrictions on **clearing** trees containing **Koalas**.

Shapefile means location and attribute information of the action provided in an ESRI shapefile format. Shapefiles must contain '.shp', '.shx', '.dbf' files and a '.prj' file that specifies the projection/geographic coordinate system used. Shapefiles must also include an '.xml' metadata file that describes the shapefile for discovery and identification purposes.

Spotted-tail Quoll means the Spotted-tail Quoll (*Dasyurus maculatus maculatus*) (southeastern mainland population) listed as a threatened species under the **EPBC Act**.

Suitably qualified field ecologist means a person who has professional qualifications and at least 3 years' work experience designing and implementing flora and fauna surveys and management plans for the **Koala** and/or the **Grey-headed Flying-fox** using relevant protocols, standards, methods and/or literature.

Suitably qualified independent expert means an **independent** person who has professional qualifications, training, skills and at least 5 years' experience in the nominated subject matter and can give authoritative independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

The Meads offset site means the area to be managed as an offset for the impacts on the **Koala habitat** and **Grey-headed Flying-fox foraging habitat**, situated at Lot 18 on CA31460 at Pipeclay Dip Road, Ravensbourne, Queensland, and shown as 'Offset Area' and shaded in yellow on the map at Attachment C.

Vegetation condition attributes means attributes that indicate vegetation functions for biodiversity, as defined in the most recent officially released version of *Queensland's BioCondition Assessment Manual*.

Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

Year 1 means the period within 1 year from the date of this approval.

Year 4 means the period within 4 years from the date this of approval.

Year 8 means the period within 8 years from the date of this approval.

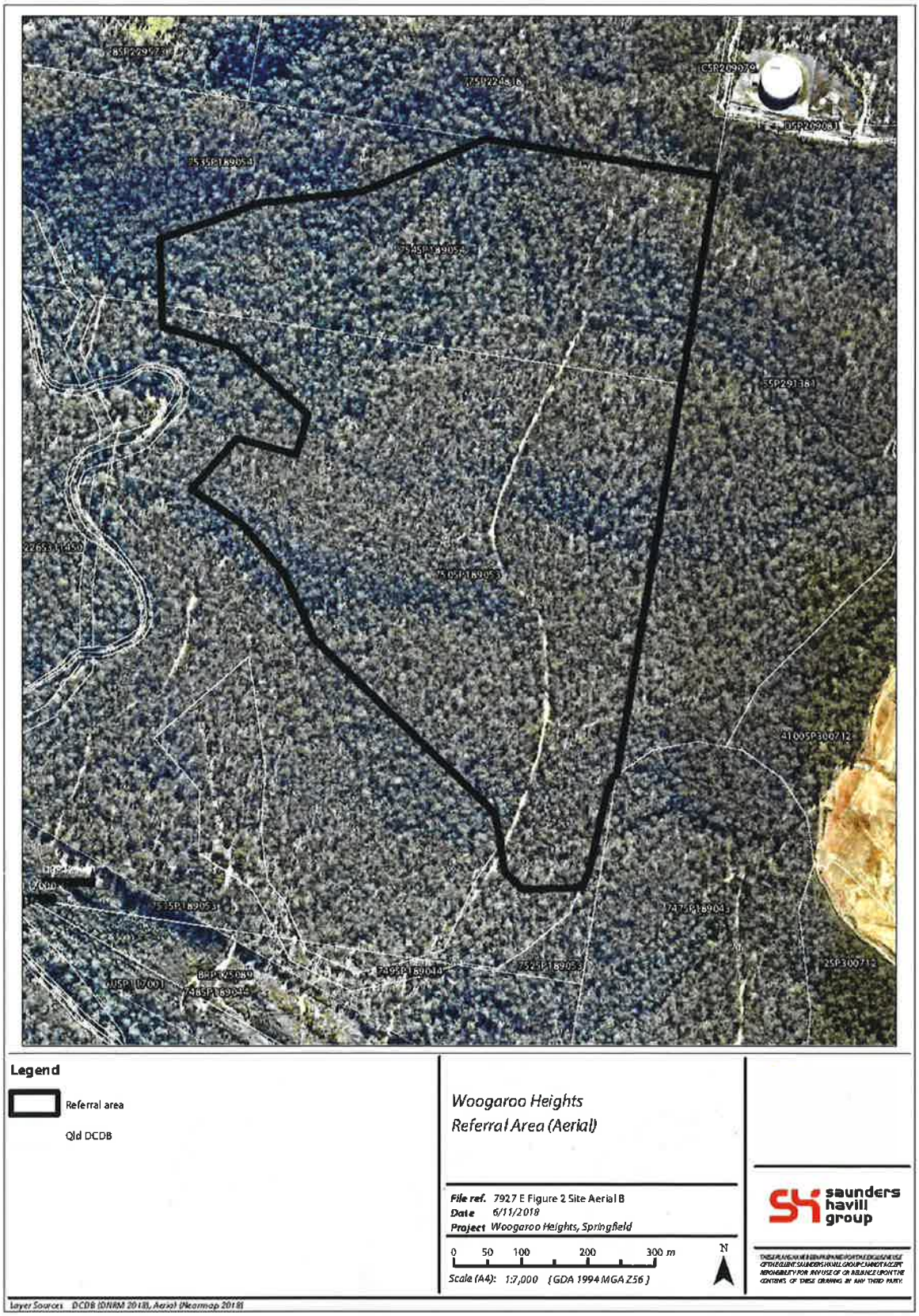
Attachment A

BioCondition Benchmarks for Regional Ecosystems at the Meads offset site

BioCondition Benchmarks to be achieved	Regional Ecosystem					
	RE 12.3.7	**RE 12.8.14**	**RE 12.9-10.14b**	**RE 12.9-10.17c**	**RE 12.12.2**	**RE 12.12.23**
Tree canopy median height (m)	16	22	32	24	33	25
Tree canopy cover (%)	30	60	55	57	59	56
Tree sub-canopy median height (m)	11	11	17	11	13	12
Tree sub-canopy cover (%)	30	15	25	33	10	10

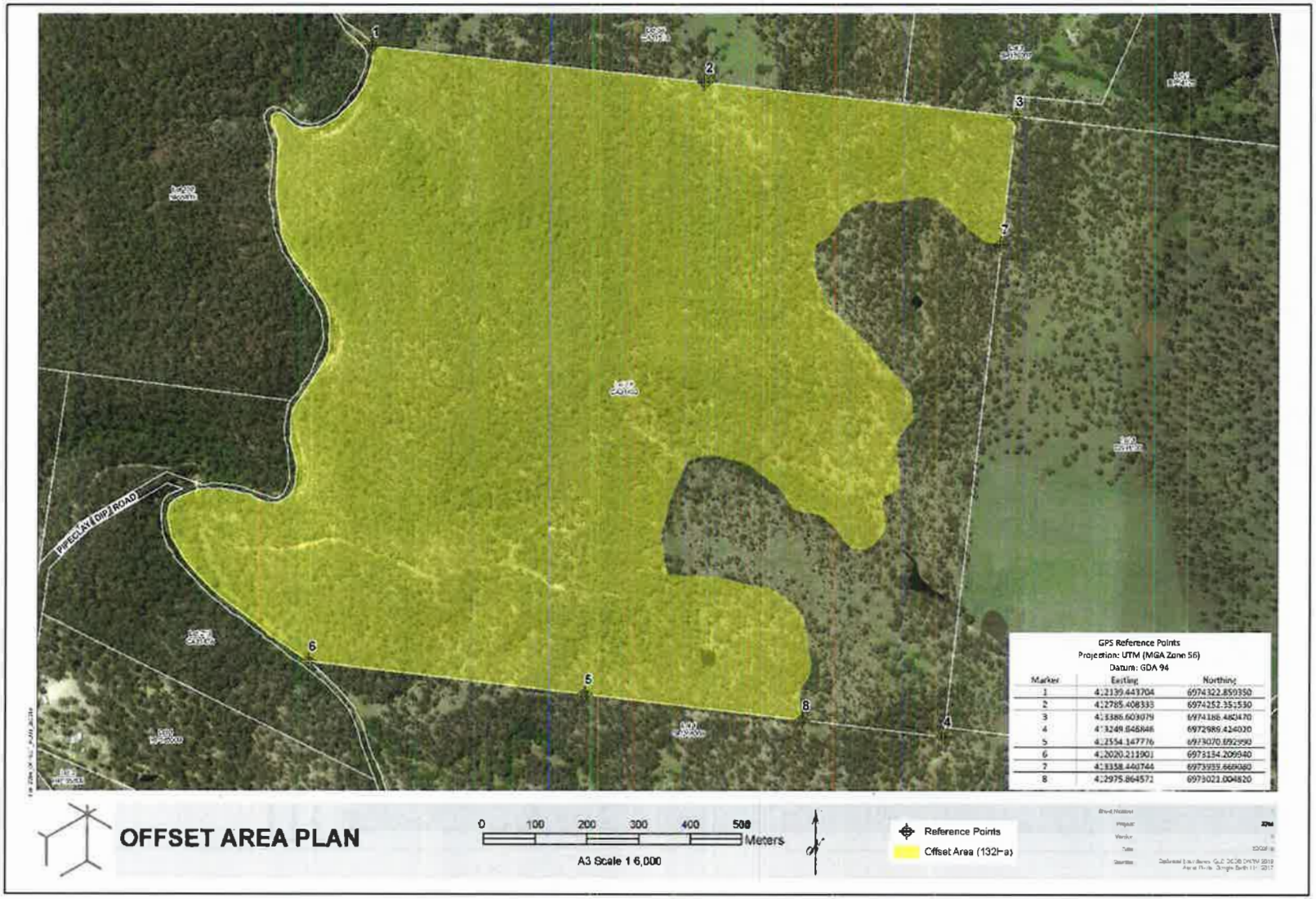
Attachment B

Map – Development area – aerial



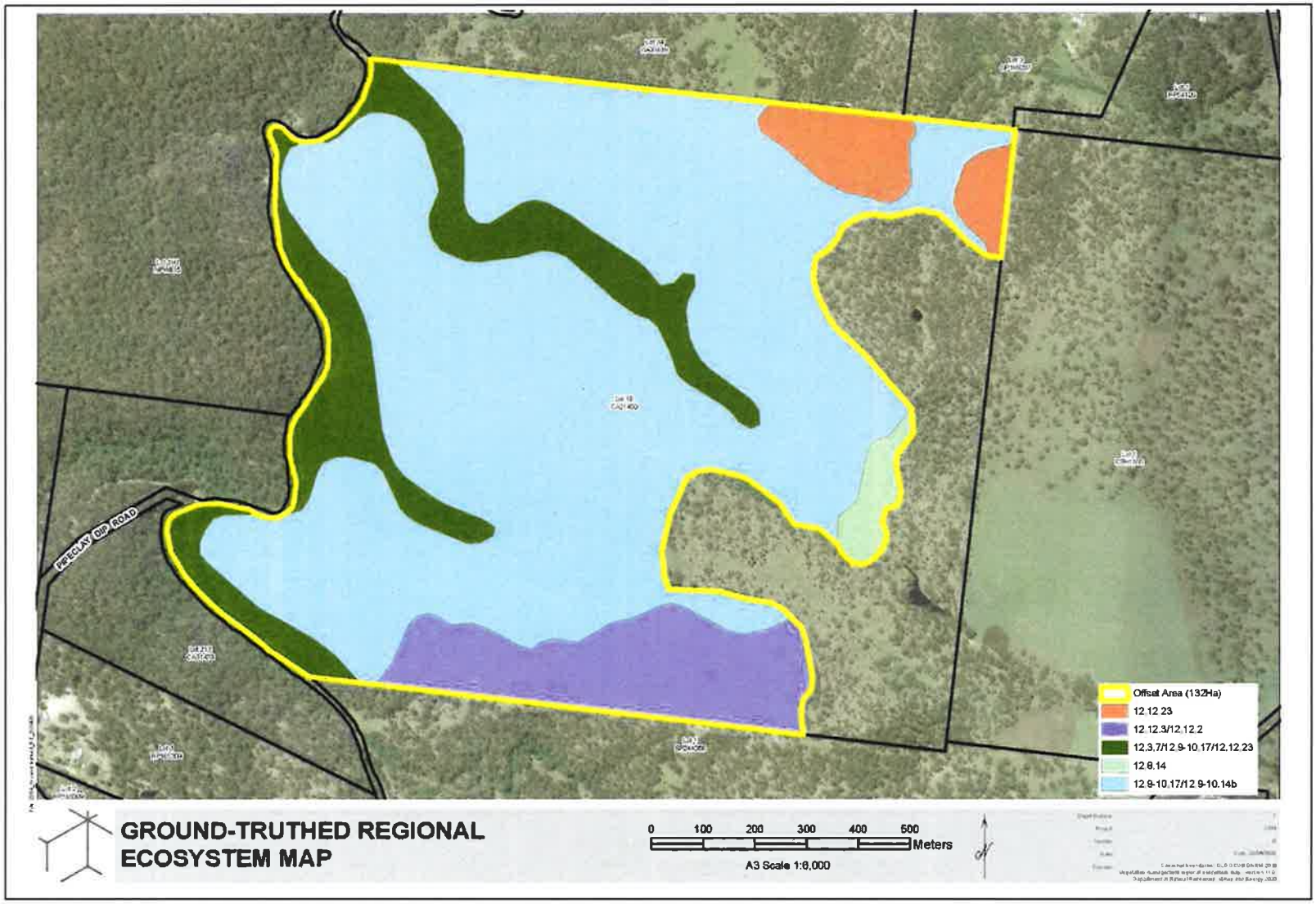
Attachment C

Map – The Meads offset site – aerial



Attachment D

Map – The Meads offset site – Regional Ecosystems



APPENDIX C

Declared Area Map

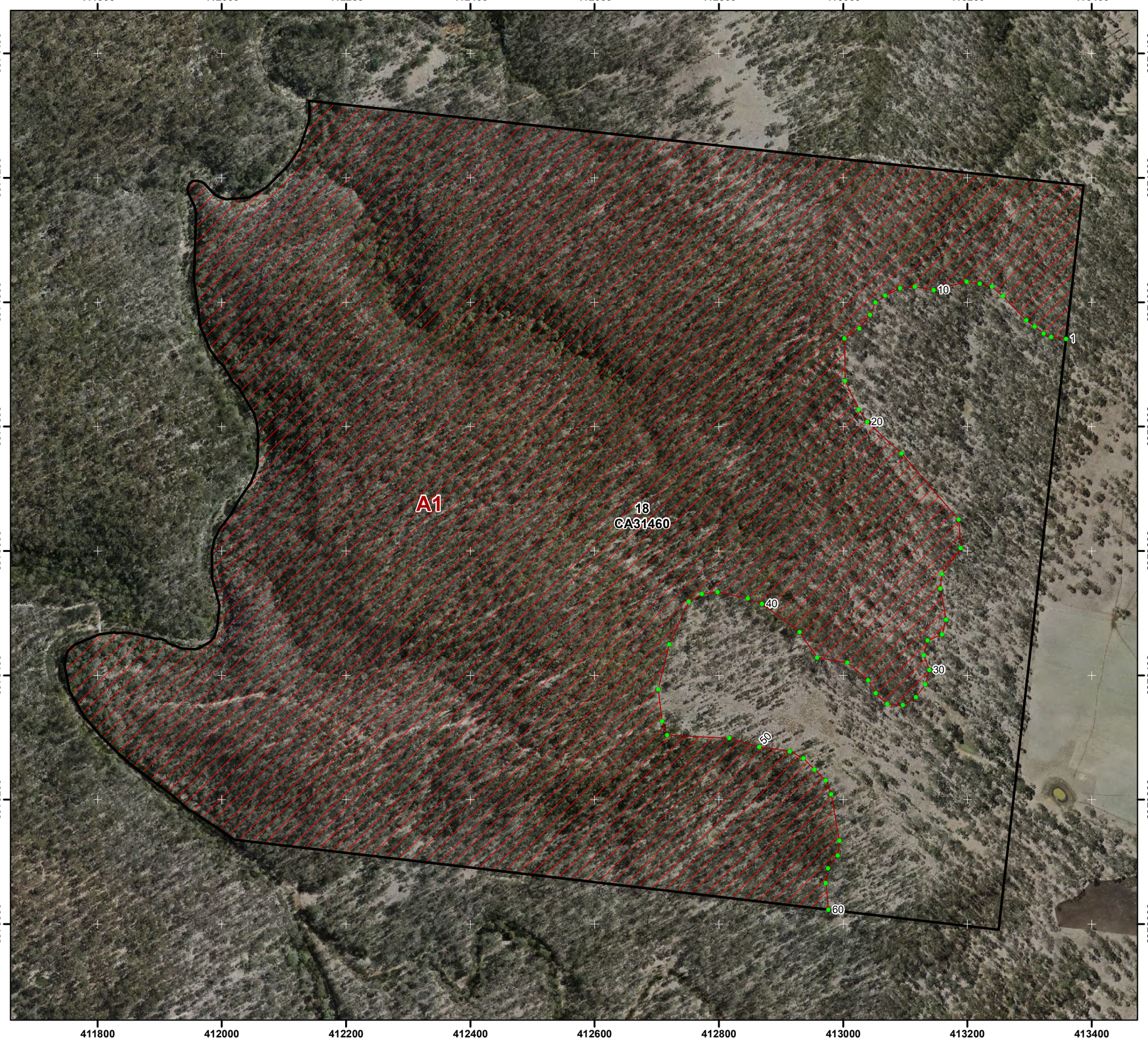
Declared Area Map

Sheet 1 of 2

DAM 2020/014171

LOT on PLAN
18CA31460

Queensland Government



0 100 200 300 400 500
meters

N

Scale: 1:6000
(original size A3)

LEGEND

- 8 Derived Reference Points
- Subject Lot
- Declared Area (A1)

This plan must be read in conjunction with Voluntary Declaration Notice 2020/014171

Notes:

Property boundary provided by Department of Resources.
The property boundaries shown on this plan are approximate only. They are not an accurate representation of the legal boundaries.

Map Information:
Horizontal Datum: GDA 2020
Projection: Universal Transverse Mercator - Zone 56

Digital Imagery: seq_regional_2019_20cm_mosaic_1_a.ecw
Imagery Date: 18/09/2019 and 05/10/2019
Imagery Type: Digital Ortho-rectified

While every care is taken to ensure the accuracy of this product, the Department of Resource makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability, including without limitation, liability in negligence for all expenses, losses, damages (including indirect or consequential damage) and costs which might incur as a result of the product being inaccurate or incomplete in any way and for any reason. Data must not be used for direct marketing or be used in breach of the privacy laws.

Map Prepared by: LMO
Department of Resources
LMB 383, Gympie, Qld, 4570

Map Preparation Date: 20/01/2020

This colour plan must be reproduced in colour.

Declared Area Map

Sheet 2 of 2

DAM 2020/014171

LOT on PLAN

18CA31460

Queensland Government

Derived Reference Points

These reference points are provided by the Department of Resources and may be used to assist in locating areas delineated on this plan.
All reference points continue sequentially when labels not shown.
Horizontal Datum is GDA 2020
Coordinates are in Map Grid of Australia (MGA) - Zone 56

Area	Point	Easting	Northing
A1	1	413359	6973941
A1	2	413335	6973944
A1	3	413323	6973950
A1	4	413309	6973961
A1	5	413295	6973971
A1	6	413257	6974010
A1	7	413239	6974025
A1	8	413220	6974030
A1	9	413199	6974033
A1	10	413146	6974020
A1	11	413116	6974025
A1	12	413092	6974023
A1	13	413068	6974011
A1	14	413052	6973999
A1	15	413044	6973980
A1	16	413026	6973958
A1	17	413002	6973942
A1	18	413003	6973873
A1	19	413025	6973828
A1	20	413039	6973807

Area	Point	Easting	Northing
A1	21	413094	6973757
A1	22	413186	6973651
A1	23	413189	6973604
A1	24	413159	6973563
A1	25	413157	6973539
A1	26	413166	6973490
A1	27	413159	6973465
A1	28	413136	6973456
A1	29	413130	6973432
A1	30	413139	6973409
A1	31	413132	6973385
A1	32	413117	6973365
A1	33	413096	6973352
A1	34	413071	6973354
A1	35	413053	6973371
A1	36	413041	6973392
A1	37	413007	6973420
A1	38	412958	6973429
A1	39	412930	6973470
A1	40	412870	6973515

Area	Point	Easting	Northing
A1	41	412847	6973524
A1	42	412798	6973534
A1	43	412773	6973530
A1	44	412752	6973519
A1	45	412720	6973450
A1	46	412703	6973378
A1	47	412709	6973326
A1	48	412717	6973304
A1	49	412817	6973299
A1	50	412865	6973285
A1	51	412914	6973278
A1	52	412936	6973266
A1	53	412954	6973249
A1	54	412973	6973231
A1	55	412981	6973209
A1	56	412994	6973134
A1	57	412992	6973110
A1	58	412976	6973090
A1	59	412972	6973066
A1	60	412976	6973023

This plan must be read in conjunction with Voluntary Declaration Notice 2020/014171

Notes:

While every care is taken to ensure the accuracy of this product, the Department of Resource makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability, including without limitation, liability in negligence for all expenses, losses, damages (including indirect or consequential damage) and costs which might incur as a result of the product being inaccurate or incomplete in any way and for any reason. Data must not be used for direct marketing or be used in breach of the privacy laws.

Map Prepared by: LMO
Department of Resources
LMB 383, Gympie, Qld, 4570

Map Preparation Date: 20/01/2021

This colour plan must be reproduced in colour.

APPENDIX D

Site Photographs

PHOTO NO. 1 – CAMERA TRAP AT SITE C1

PHOTO NO. 2 – CAMERA TRAP AT C3

PHOTO NO. 3 – SITE T1 LOOKING S FROM 100M

PHOTO NO. 4 – SITE T2 AT 100M

PHOTO NO. 5 – ALONG TRANSECT OF T2. NOTE EVIDENCE OF HISTORIC LOGGING

PHOTO NO. 6 – T3 FROM 100M

PHOTO NO. 7 – T4 AT 100M

PHOTO NO. 8 – T5 AT 100M

PHOTO NO. 9 – T6 AT 50M LOOKING TO 0M

PHOTO NO. 10 – T6 AT 100M

PHOTO NO. 11 – T7 AT 0M

PHOTO NO. 12 – T8 FROM 100M

PHOTO NO. 13 – T9 INTO BROAD LEAVED PRIVET THICKET

PHOTO NO. 14 – REPRESENTATIVE LANTANA CAMARA THICKET AT SITE O4

PHOTO 15 – REPRESENTATIVE SCAT AND SCRATCHES AT T4

APPENDIX E

Regional Ecosystem Map

PIPECLAY DIP ROAD

Offset Area (132Ha)
12.12.23 (5.4 Ha)
12.12.3/12.12.2 (13.0 Ha)
12.3.7/12.9-10.17/12.12.23 (17.8 Ha)
12.8.14 (2.0 Ha)
12.9-10.17/12.9-10.14b (93.7 Ha)

File: 2215-Meads-GTRE-210721

GROUND-TRUTHED REGIONAL ECOSYSTEM MAP

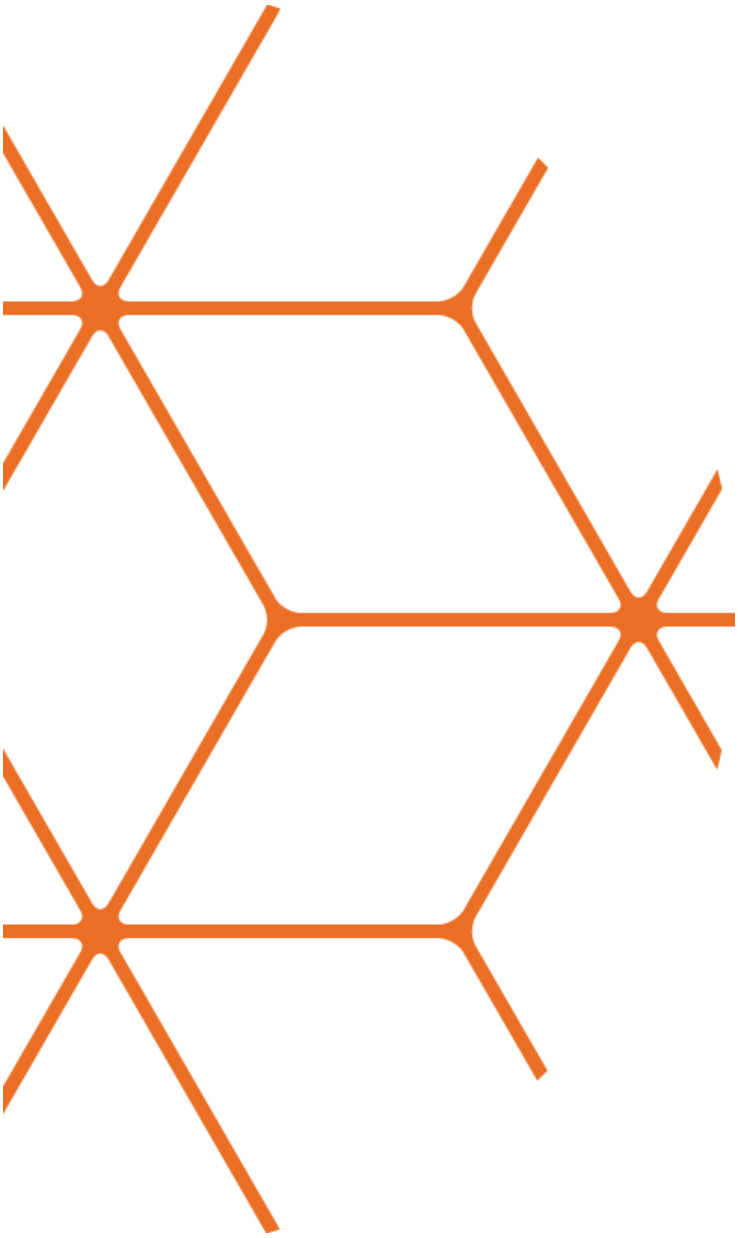
0 100 200 300 400 500 Meters

A3 Scale 1:6,000

Sheet Number: 1
Project: 2215
Version: 0
Date: Date: 21/07/2021
Sources: Cadastral boundaries: QLD DCDB DNRM 2021
Aerial Photo: Google Earth 11/1/2017
Vegetation management regional ecosystem map - version 11.0: Department of Natural Resources, Mines and Energy 2020

APPENDIX F

BioCondition & Habitat Quality Site Assessment 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 A - Administrative

Case reference		Project Name	

Part B – Nominated Approach (FOR IMPACT SITE ONLY)

Please Select Your Nominated approach: Rapid approach ☐ Standard Approach ☐

i) **Rapid Assessment** ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	30/3/21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
1	2	12.8.14	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		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	152.1216	-27.3596
GDA 94 ☐	50m Mark	Zone	Easting	Northing
		56		
Plot bearing			Recorders	BC

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

Eucalyptus eugenioides, E. biturbinata, E. melliodora +/- E. tereticornis, Corymbia intermedia, E. crebra open forest. Allocasuarina torulosa is a common understorey species. Localised occurrences of Eucalyptus laevopinea, E. quadrangulata and E. banksii may occur. Occurs on Cainozoic igneous rocks, especially basalt. (BVG1M: 11a)

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

Tree species richness:			
Total number of species	4		
Scientific Name	*Eucalyptus melliodora*	Common Name	
Scientific Name	*Eucalyptus crebra*	Common Name	
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Angophora subvelutina*	Common Name	
Scientific Name	*Brachychiton populneus*	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	3		
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Allocasuarina torulosa*	Common Name	
Scientific Name	*Acacia fimbriata*	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	*Themeda triandra*	Common Name	
Scientific Name	*Imperata cylindrica*	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	

Forbs and others (non grass ground) species richness:

Total number of species	6		
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name	*Gahnia aspera*	Common Name	
Scientific Name	*Solanum stelligerum*	Common Name	
Scientific Name	*Dianella caerulea*	Common Name	
Scientific Name	*Hardenbergia violacea*	Common Name	
Scientific Name	*Eustrephus latifolius*	Common Name	
Scientific Name		Common Name	

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

Total percentage cover within plot	19.00%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Bidens pilosa*	Common Name	
Scientific Name	*Solanum nigrum*	Common Name	
Scientific Name	*Senna pendula*	Common Name	
Scientific Name	*Opuntia tomentosa*	Common Name	
Scientific Name	*Conyza sumatrensis*	Common Name	
Scientific Name	*Gomphocarpus physocarpus*	Common Name	
Scientific Name	*Hypochaeris radicata*	Common Name	
Scientific Name	*Ligustrum lucidium*	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):	1130.00		
1	10.00	26	
2	5.00	27	
3	5.00	28	
4	3.00	29	
5	5.00	30	
6	20.00	31	
7	10.00	32	
8	5.00	33	
9	15.00	34	
10	12.00	35	
11	11.00	36	
12	7.00	37	
13	5.00	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
	0.00%	2.00%	5.00%	0.00%	0.00%	1.40%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	80.00%	20.00%	10.00%	95.00%	90.00%	59.00%

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

Eucalypt Large tree DBH benchmark used :	44cm	Non- Eucalypt Large tree DBH benchmark used:	N/A
Number of large eucalypt trees:	20	Number of large non eucalypt trees:	0
Total Number Large Trees:	20		

Median Tree Canopy Height Measurements	Canopy:	20.00	Sub-canopy:	6.00	Emergent:	0.00

Number of ecologically dominant layer species regenerating:	25

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	46.50%	Sub-canopy:	10.00%	Emergent:	0.00%
Shrub canopy cover %	12.00%					

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	5 - >200ha	4 - >75% or >500ha connection	4 - >75% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	10	5	5	0	6

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	Phascolarctos cinereus	koala	SL	Description	*3 - Low threat level*	*3 - High*	*3 - High*	*4 - Minor restriction (0 – 25% reduction)*	2 - Likely to be critical to species' survival
				Score	15	10	10	10	4
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	15.00	10.00	10.00	10.00	4.00

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	

i) **Rapid Assessment** ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	30/03/2(

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
2	10	12.12.2	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	0m Mark	Zone	Easting	Northing
WGS 84 ☐		56	152.1156	-27.3612
GDA 94 ☐	50m Mark	Zone	Easting	Northing
Plot bearing		Recorders	BC	

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

Eucalyptus pilularis tall open forest with shrubby or grassy understorey. Other canopy species include Syncarpia glomulifera or S. verecunda, Angophora woodsiana, Eucalyptus microcorys, E. resinifera, E. tindaliae, E. propinqua and E. saligna. Occurs on Mesozoic to Proterozoic igneous rocks. (BVG1M: 8b) (RE12.12.2a)

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

Tree species richness:			
Total number of species	6		
Scientific Name	*Eucalyptus pilularis*	Common Name	
Scientific Name	*E.microcorys*	Common Name	
Scientific Name	*E.propinqua*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Corymbia citriodora*	Common Name	
Scientific Name	*E.tereticornis*	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	5		
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Allocasuarina torulosa*	Common Name	
Scientific Name	*Brachychiton populneus*	Common Name	
Scientific Name	*Acacia longissima*	Common Name	
Scientific Name	*A. melanoxylon*	Common Name	
Scientific Name	*E.pilularis*	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	*Themeda australis*	Common Name	
Scientific Name	*Imperata cylindrica*	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	

Forbs and others (non grass ground) species richness:			
Total number of species	7		
Scientific Name	*Bursaria spinosa*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	

Scientific Name	*Goodenia rotundifolia*	Common Name	
Scientific Name	*Desmodium rhytidophyllum*	Common Name	
Scientific Name	*Persoonia sericea*	Common Name	
Scientific Name	*Eustrephus latifolius*	Common Name	
Scientific Name	*Pomax umbellata*	Common Name	

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

Total percentage cover within plot	14.50%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Ligustrum lucidium*	Common Name	
Scientific Name	*Opuntia stricta*	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 F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	780.00		
1	8.00	26	
2	4.00	27	
3	2.00	28	
4	33.00	29	
5	10.00	30	
6	8.00	31	
7	4.00	32	
8	4.00	33	
9	5.00	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
	5.00%	5.00%	5.00%	15.00%	5.00%	7.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	90.00%	95.00%	95.00%	85.00%	85.00%	90.00%

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

Eucalypt Large tree DBH benchmark used :	55cm	Non- Eucalypt Large tree DBH benchmark used:	N/A
Number of large eucalypt trees:	20	Number of large non eucalypt trees:	0
Total Number Large Trees:	20		

Median Tree Canopy Height Measurements	Canopy:	24.00	Sub-canopy:	8.00	Emergent:	0.00

Number of ecologically dominant layer species regenerating:	17

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	50.50%	Sub-canopy:	10.00%	Emergent:	0.00%
Shrub canopy cover %	21.00%					

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	2 - 5 - 25ha	4 - >75% or >500ha connection	4 - >75% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	2	5	5	0	6

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	Phascolarctos cinereus	koala	SL	Description	*3 - Low threat level*	*3 - High*	*3 - High*	*4 - Minor restriction (0 – 25% reduction)*	2 - Likely to be critical to species' survival
				Score	15	10	10	10	4
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	15.00	10.00	10.00	10.00	4.00

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 ☐

i) Rapid Assessment ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	30/3/21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
3	15	12.9-10.14	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			Zone	Easting	Northing
WGS 84 ☐	0m Mark		56	152.1131	-27.3594
GDA 94 ☐	50m Mark		Zone	Easting	Northing
Plot bearing					
		Recorders			

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

12.9-10.14b: Eucalyptus pilularis open forest. Other canopy species may include Angophora woodsiana, Eucalyptus baileyana, Corymbia henryi, C. trachyphloia, E. taurina, and E. microcorys. Occurs in dry sub coastal areas on Cainozoic and Mesozoic sediments especially quartzose sandstone. (BVG1M: 8b)

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

Tree species richness:			
Total number of species	6		
Scientific Name	*Eucalyptus pilularis*	Common Name	
Scientific Name	*Trema tomentosa*	Common Name	
Scientific Name	*E. microcorys*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Allocasuarina torulosa*	Common Name	
Scientific Name	*Alphitonia excelsa*	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	4		
Scientific Name	*Allocasusarina torulosa*	Common Name	
Scientific Name	*L.confertus*	Common Name	
Scientific Name	*Trema tomentosa*	Common Name	
Scientific Name	*E.pilularis*	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	*Imperata cylindrica*	Common Name	
Scientific Name	*Themeda australis*	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	

Forbs and others (non grass ground) species richness:			
Total number of species	7		
Scientific Name	*Solanum stelligerum*	Common Name	
Scientific Name	*Desmodium rhytidophyllum*	Common Name	

Scientific Name	*Gahnia aspera*	Common Name	
Scientific Name	*Lomandra multiflora*	Common Name	
Scientific Name	*Hardenbergia violaceae*	Common Name	
Scientific Name	*Lepidosperma laterale*	Common Name	
Scientific Name	*Eustrephus latifolius*	Common Name	

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

Total percentage cover within plot	75.50%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Ligustrum lucidium*	Common Name	
Scientific Name	*Opuntia sp.*	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 F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	420.00		
1	12.00	26	
2	5.00	27	
3	5.00	28	
4	20.00	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)

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

	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Organic Litter	85.00%	50.00%	95.00%	95.00%	50.00%	75.00%

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

Eucalypt Large tree DBH benchmark used :	41cm	Non- Eucalypt Large tree DBH benchmark used:	N/A
Number of large eucalypt trees:	12	Number of large non eucalypt trees:	0
Total Number Large Trees:	12		

Median Tree Canopy Height Measurements	Canopy:	24.00	Sub-canopy:	11.00	Emergent:	0.00

Number of ecologically dominant layer species regenerating:	17

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	46.00%	Sub-canopy:	20.00%	Emergent:	
Shrub canopy cover %	35.50%					

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	5 - >200ha	4 - >75% or >500ha connection	4 - >75% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	10	5	5	0	6

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	Phascolarctos cinereus	koala	SL	Description	*2 - Moderate threat level*	*2 - Moderate*	*3 - High*	*2 - Highly restricted (51% - 75% reduction)*	2 - Likely to be critical to species' survival
				Score	7	5	10	4	4
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	7.00	5.00	10.00	4.00	4.00

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 ☐

i) **Rapid Assessment** ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	30/3/21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
4	35	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		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	152.1146	-27.3575
GDA 94 ☐	50m Mark	Zone	Easting	Northing
Plot bearing		Recorders		

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

12.9-10.17c: Open forest of Eucalyptus carnea and/or E. tindaliae and/or E. helidonica +/- Corymbia citriodora subsp. variegata, Eucalyptus crebra, Eucalyptus major, Corymbia henryi, Angophora woodsiana, C. trachyphloia, E. siderophloia, E. microcorys, E. resinifera and E. propinqua. Lophostemon confertus often present as a sub-canopy or understorey tree. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 9g)

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

Tree species richness:			
Total number of species	8		
Scientific Name	*Eucalyptus microcorys*	Common Name	
Scientific Name	*E. major*	Common Name	
Scientific Name	*E.propinqua*	Common Name	
Scientific Name	*E.tindaliae*	Common Name	
Scientific Name	*Corymbia citriodora*	Common Name	
Scientific Name	*E.tereticornis*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	6		
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*A.leiocarpa*	Common Name	
Scientific Name	*L.confertus*	Common Name	
Scientific Name	*Acacia melanoxylon*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name	*Alphitonia excelsa*	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	*Themeda australis*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Imperata cylindrica*	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	*Breynia oblongifolia*	Common Name	Lepidosperma laterale
Scientific Name	*Solanum stelligerum*	Common Name	Senescio sp
Scientific Name	*Gahnia aspera*	Common Name	Pomax umbellata
Scientific Name	*Hardenbergia violaceae*	Common Name	Persoonia sp.

Scientific Name	*Desmodium rhytidophyllum*	Common Name	
Scientific Name	*Persoonia sericea*	Common Name	
Scientific Name	*Smilax australis*	Common Name	

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

Total percentage cover within plot	27.00%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Passiflora suberosa*	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	

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

Total Length of Course Woody Debris (Meters):	820.00		
1	30.00	26	
2	12.00	27	
3	5.00	28	
4	3.00	29	
5	6.00	30	
6	15.00	31	
7	2.00	32	
8	2.00	33	
9	6.00	34	
10	1.00	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)

	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	5.00%	5.00%	40.00%	5.00%	5.00%	12.00%

	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Organic Litter	95.00%	90.00%	80.00%	90.00%	80.00%	87.00%

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

Eucalypt Large tree DBH benchmark used :	44	Non- Eucalypt Large tree DBH benchmark used:	N/A
Number of large eucalypt trees:	20	Number of large non eucalypt trees:	0
Total Number Large Trees:	20		

Median Tree Canopy Height Measurements	Canopy:	24.00	Sub-canopy:	7.00	Emergent:	0.00

Number of ecologically dominant layer species regenerating:	25

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	47.50%	Sub-canopy:	30.00%	Emergent:	0.00%
Shrub canopy cover %	27.50%					

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	5 - >200ha	4 - >75% or >500ha connection	4 - >75% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	10	5	5	0	6

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	Phascolarctos cinereus	koala	SL	Description	*2 - Moderate threat level*	*3 - High*	*3 - High*	*3 - Moderately restricted (26 – 50% reduction)*	2 - Likely to be critical to species' survival
				Score	7	10	10	7	4
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	7.00	10.00	10.00	7.00	4.00

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 ☐

i) Rapid Assessment ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	30/3/20

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
5	5	12.12.23	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		Zone	Easting	Northing
WGS 84 ☐	0m Mark		152.1146	-27.3525
GDA 94 ☐		Zone	Easting	Northing
	50m Mark			
Plot bearing			Recorders	

Site description and Location (including details of discrete polygons within the assessment unit)
Woodland to open forest generally with Eucalyptus tereticornis subsp. tereticornis or E. tereticornis subsp. basaltica +/- E. eugenioides. Other species present vary from place to place but commonly include E. crebra, Corymbia intermedia, E. acmenoides, E. biturbinata, E. longirostrata, E. melliodora, C. trachyphloia, C. citriodora subsp. Variegata, Lophostemon confertus (tree form and whipstick form), Angophora subvelutina and Allocasuarina torulosa. Occurs at higher altitudes on crests, upper slopes and elevated valleys and plains on Mesozoic to Proterozoic igneous rocks. (BVG1M: 9g) (RE12.12.23)

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

Tree species richness:			
Total number of species	6		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Corymbia citriodora*	Common Name	
Scientific Name	*E.crebra*	Common Name	
Scientific Name	*E.propinqua*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Allocasuarina torulosa*	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	4		
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*L.confertus*	Common Name	
Scientific Name	*A.torulosa*	Common Name	
Scientific Name	*E.crebra*	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	3		
Scientific Name	*Themeda australis*	Common Name	
Scientific Name	*Imperata cylindrica*	Common Name	
Scientific Name	*Cymbopogon refractus*	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	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Breynia oblongifolia*	Common Name	Dianella caerulea
Scientific Name	*Gahnia aspera*	Common Name	
Scientific Name	*Persoonia sp*	Common Name	
Scientific Name	*Desmodium rhytophyllum*	Common Name	
Scientific Name	*Solanum stelligerum*	Common Name	
Scientific Name	*Eustrephus latifolius*	Common Name	
Scientific Name	*Alchornia ilicifolia*	Common Name	

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

Total percentage cover within plot	36.50%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Ligustrum lucidium*	Common Name	
Scientific Name	*Opuntia tomentosa*	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 F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	1260.00		
1	10.00	26	
2	2.00	27	
3	100.00	28	
4	2.00	29	
5	2.00	30	
6	5.00	31	
7	3.00	32	
8	2.00	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
	1.00%	5.00%	5.00%	1.00%	20.00%	6.40%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	95.00%	95.00%	95.00%	95.00%	95.00%	95.00%

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

Eucalypt Large tree DBH benchmark used :	52	Non- Eucalypt Large tree DBH benchmark used:	26
Number of large eucalypt trees:	18	Number of large non eucalypt trees:	2
Total Number Large Trees:	18		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	7.00	Emergent:	0.00

Number of ecologically dominant layer species regenerating:	33

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	62.00%	Sub-canopy:	20.00%	Emergent:	0.00%
Shrub canopy cover %	12.00%					

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	5 - >200ha	4 - >75% or >500ha connection	4 - >75% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	10	5	5	0	6

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	Phascolarctos cinereus	koala	SL	Description	*2 - Moderate threat level*	*3 - High*	*3 - High*	*3 - Moderately restricted (26 – 50% reduction)*	2 - Likely to be critical to species' survival
				Score	7	10	10	7	4
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	7.00	10.00	10.00	7.00	4.00

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	

i) **Rapid Assessment** ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	31/03/2(

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6	10	12.12.23	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			Zone	Easting	Northing
WGS 84		0m Mark	56	152.1104	-27.3584
GDA 94			Zone	Easting	Northing
		50m Mark		152.1106	-27.3574
Plot bearing			Recorders	BC	

Site description and Location (including details of discrete polygons within the assessment unit)
Woodland to open forest generally with Eucalyptus tereticornis subsp. tereticornis or E. tereticornis subsp. basaltica +/- E. eugenioides. Other species present vary from place to place but commonly include E. crebra, Corymbia intermedia, E. acmenoides, E. biturbinata, E. longirostrata, E. melliodora, C. trachyphloia, C. citriodora subsp. Variegata, Lophostemon confertus (tree form and whipstick form), Angophora subvelutina and Allocasuarina torulosa. Occurs at higher altitudes on crests, upper slopes and elevated valleys and plains on Mesozoic to Proterozoic igneous rocks. (BVG1M: 9g) (RE12.12.23)

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

Tree species richness:			
Total number of species	6		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus major*	Common Name	
Scientific Name	*Eucalyptus biturbinata*	Common Name	
Scientific Name	*Eucalyptus carnea*	Common Name	
Scientific Name	*Eucalyptus acmenoides*	Common Name	
Scientific Name	*Allocasuarina littoralis*	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	4		
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*Acacia sp.*	Common Name	
Scientific Name	*Trema tomentosa*	Common Name	
Scientific Name	*E.tereticornis*	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	3		
Scientific Name	*Themeda australis*	Common Name	
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Panicum sp.*	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	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	*Pomax umbellata*	Common Name	
Scientific Name	*Gahnia aspera*	Common Name	
Scientific Name	*Trema tomentosa*	Common Name	

Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Dianella caerulea*	Common Name	
Scientific Name	*Smilax australis*	Common Name	
Scientific Name		Common Name	

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

Total percentage cover within plot	61.50%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*L. montevidensis*	Common Name	
Scientific Name	*Ligustrum lucidium*	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 F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	400.00		
1	10.00	26	
2	5.00	27	
3	5.00	28	
4	5.00	29	
5	8.00	30	
6	2.00	31	
7	3.00	32	
8	2.00	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
	0.00%	0.00%	5.00%	20.00%	30.00%	11.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	80.00%	80.00%	85.00%	70.00%	10.00%	65.00%

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

Eucalypt Large tree DBH benchmark used :	52	Non- Eucalypt Large tree DBH benchmark used:	26
Number of large eucalypt trees:	22	Number of large non eucalypt trees:	2
Total Number Large Trees:	22		

Median Tree Canopy Height Measurements	Canopy:	20.00	Sub-canopy:	12.00	Emergent:	0.00

Number of ecologically dominant layer species regenerating:	33

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	38.00%	Sub-canopy:	10.50%	Emergent:	0.00%
Shrub canopy cover %	30.00%					

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	5 - >200ha	4 - >75% or >500ha connection	4 - >75% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	10	5	5	0	6

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	Phascolarctos cinereus	koala	SL	Description	*2 - Moderate threat level*	*3 - High*	*3 - High*	*2 - Highly restricted (51% - 75% reduction)*	2 - Likely to be critical to species' survival
				Score	7	10	10	4	4
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	7.00	10.00	10.00	4.00	4.00

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 ☐

i) **Rapid Assessment** ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	31/3/21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
7	35	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		Zone	Easting	Northing
WGS 84	0m Mark	56	152.1168	-27.3526
GDA 94 ☐ ☐		Zone	Easting	Northing
	50m Mark			
Plot bearing		Recorders		

Site description and Location (including details of discrete polygons within the assessment unit)
12.9-10.17c: Open forest of Eucalyptus carnea and/or E. tindaliae and/or E. helidonica +/- Corymbia citriodora subsp. variegata, Eucalyptus crebra, Eucalyptus major, Corymbia henryi, Angophora woodsiana, C. trachyphloia, E. siderophloia, E. microcorys, E. resinifera and E. propinqua. Lophostemon confertus often present as a sub-canopy or understorey tree. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 9g)

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

Tree species richness:			
Total number of species	8		
Scientific Name	*Corymbia citriodora*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Eucalyptus tindaliae*	Common Name	
Scientific Name	*E.carnea*	Common Name	
Scientific Name	*E. acmenioides*	Common Name	
Scientific Name	*E.siderophloia*	Common Name	
Scientific Name	*E.microcorys*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	3		
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Alphitonia excelsa*	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	2		
Scientific Name	*Themeda australis*	Common Name	
Scientific Name	*Cymbopogon refractus*	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	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Persoonia sericea*	Common Name	Desmodium rhytidophyllum
Scientific Name	*Lepidosperma laterale*	Common Name	
Scientific Name	*Goodenia rotundifolia*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	

Scientific Name	*Pomax umbellata*	Common Name	
Scientific Name	*Gahnia aspera*	Common Name	
Scientific Name	*Smilax australis*	Common Name	

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

Total percentage cover within plot	18.50%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Opuntia stricta*	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	

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

Total Length of Course Woody Debris (Meters):	420.00		
1	12.00	26	
2	15.00	27	
3	5.00	28	
4	4.00	29	
5	6.00	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 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
	10.00%	5.00%	1.00%	1.00%	1.00%	3.60%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	75.00%	90.00%	50.00%	100.00%	100.00%	83.00%

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

Eucalypt Large tree DBH benchmark used :	44cm	Non- Eucalypt Large tree DBH benchmark used:	N/A
Number of large eucalypt trees:	27	Number of large non eucalypt trees:	N/A
Total Number Large Trees:	18		

Median Tree Canopy Height Measurements	Canopy:	20.00	Sub-canopy:	12.00	Emergent:	0.00

Number of ecologically dominant layer species regenerating:	13

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	50.00%	Sub-canopy:	13.50%	Emergent:	6.00%
Shrub canopy cover %	16.50%					

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	5 - >200ha	4 - >75% or >500ha connection	4 - >75% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	10	5	5	0	6

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	Phascolarctos cinereus	koala	SL	Description	*2 - Moderate threat level*	*3 - High*	*3 - High*	*3 - Moderately restricted (26 – 50% reduction)*	2 - Likely to be critical to species' survival
				Score	7	10	10	7	4
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	7.00	10.00	10.00	7.00	4.00

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 ☐

i) **Rapid Assessment** ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	31/3/21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
8	10	12.12.3	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		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	152.1205	-27.3536
GDA 94 ☐	50m Mark	Zone	Easting	Northing
Plot bearing		Recorders	BC	

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

Open forest complex in which spotted gum is a relatively common species. Canopy trees include Corymbia citriodora subsp. variegata, Eucalyptus crebra (drier sub coastal ranges) or Eucalyptus siderophloia, E. major and/or E. longirostrata, E. acmenoides or E. portuensis, E. eugenioides. Hills and ranges. Other species that may be present locally include Corymbia intermedia, C. trachyphloia, Eucalyptus tereticornis, E. propinqua, E. moluccana, E. decolor, E. melliodora, E. carnea, E. fibrosa subsp. fibrosa and Angophora leiocarpa. Lophostemon confertus (tree form and whipstick form) often present in gullies or as a sub-canopy or canopy tree especially on granite. Mixed understorey of grasses, shrubs and ferns. Occurs on Mesozoic to Proterozoic igneous rocks. (BVG1M: 10b)

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

Tree species richness:			
Total number of species	9		
Scientific Name	*Corymbia citrodora*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*E.crebra*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*E.propinqua*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*A. torulosa*	Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	*L.confertus*	Common Name	
Scientific Name	*A.excelsa*	Common Name	
Scientific Name	*A.littoralis*	Common Name	
Scientific Name	*A.torulosa*	Common Name	
Scientific Name	*Acacia sp.*	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	*Cymbopogon refractus*	Common Name	
Scientific Name	*Themeda australis*	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	

Forbs and others (non grass ground) species richness:			
Total number of species	12		
Scientific Name	*Solanum nigrum*	Common Name	Alchornea ilicifolia
Scientific Name	*Desmodium rhytophyllum*	Common Name	Brachichyton populnus
Scientific Name	*Breynia oblongifolia*	Common Name	Senecio sp.
Scientific Name	*Hargenbergia violacae*	Common Name	Acacia sp.

Scientific Name	*Persoonia sericea*	**Common Name**	Dianella caerulea
Scientific Name	*A.excelsa*	**Common Name**	
Scientific Name	*Cyprus sp.*	**Common Name**	

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

Total percentage cover within plot	21.50%		
Scientific Name	*Lantana camara*	**Common Name**	
Scientific Name	*Bidens pilosa*	**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**	

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

Total Length of Course Woody Debris (Meters):	**545.00**		
1	2.00	**26**	
2	2.50	**27**	
3	7.00	**28**	
4	6.00	**29**	
5	10.00	**30**	
6	3.00	**31**	
7	2.00	**32**	
8	5.00	**33**	
9	6.00	**34**	
10	7.00	**35**	
11	4.00	**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)

	Quadrat 1	**Quadrat 2**	**Quadrat 3**	**Quadrat 4**	**Quadrat 5**	**Average**
Native perennial grass cover	10.00%	40.00%	40.00%	40.00%	25.00%	31.00%

	Quadrat 1	**Quadrat 2**	**Quadrat 3**	**Quadrat 4**	**Quadrat 5**	**Average**
Organic Litter	40.00%	40.00%	40.00%	50.00%	75.00%	49.00%

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

Eucalypt Large tree DBH benchmark used :	40cm	**Non- Eucalypt Large tree DBH benchmark used:**	N/A
Number of large eucalypt trees:	15	**Number of large non eucalypt trees:**	0
Total Number Large Trees:	15		

Median Tree Canopy Height Measurements	**Canopy:**	20.00	**Sub-canopy:**	10.00	**Emergent:**	0.00

Number of ecologically dominant layer species regenerating:	**55**

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	67.00%	**Sub-canopy:**	26.00%	**Emergent:**	0.00%
Shrub canopy cover %	27.00%					

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	2 - 5 - 25ha	4 - >75% or >500ha connection	1 - <10% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	2	5	0	0	6

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	Phascolarctos cinereus	koala	SL	**Description**	*2 - Moderate threat level*	*3 - High*	*3 - High*	*4 - Minor restriction (0 – 25% reduction)*	2 - Likely to be critical to species' survival
				Score	7	10	10	10	4
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	7.00	10.00	10.00	10.00	4.00

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 ☐

i) Rapid Assessment ..... **(ENTER BVG FROM DROP-DOWN LIST BELOW)**

Enter BVG:		Presumed HQ Equals	

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

Part C - Site Data

Property	Meads	Date	31/3/21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
9	10	12.3.7	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		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	152.1085	-27.3592
GDA 94 ☐	50m Mark	Zone	Easting	Northing
Plot bearing		Recorders	NW	

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

Narrow fringing woodland of Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca viminalis. Other species associated with this RE include Melaleuca bracteata, M. trichostachya, M. linariifolia. North of Brisbane Waterhousea floribunda commonly occurs and may at times dominate this RE . Melaleuca fluviatilis occurs in this RE in the north of the bioregion. Lomandra hystrix often present in stream beds. Occurs on fringing levees and banks of rivers and drainage lines of alluvial plains throughout the region. (BVG1M: 16a)

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

Tree species richness:			
Total number of species	4		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Casuarina cunninghamiana*	Common Name	
Scientific Name	*E. robusta*	Common Name	
Scientific Name	*Melaleuca viminalis*	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	0		
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	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	0		
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	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	0		
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 - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	90.00%		
Scientific Name	*Ligustrum lucidium*	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	
Scientific Name		Common Name	

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

Total Length of Course Woody Debris (Meters):	0.00		
1		26	
2		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
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

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

Eucalypt Large tree DBH benchmark used :	51cm	Non- Eucalypt Large tree DBH benchmark used:	36cm
Number of large eucalypt trees:	3	Number of large non eucalypt trees:	3
Total Number Large Trees:	6		

Median Tree Canopy Height Measurements	Canopy:	25.00	Sub-canopy:	7.00	Emergent:	0.00

Number of ecologically dominant layer species regenerating:	0

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	15.00%	Sub-canopy:	0.00%	Emergent:	0.00%
Shrub canopy cover %	0.00%					

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	2 - 5 - 25ha	4 - >75% or >500ha connection	4 - >75% remnant	1 - 0-500m	3 - Within (whole or part)
SCORE	2	5	5	0	6

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	Phascolarctos cinereus	koala	SL	Description	*2 - Moderate threat level*	*1 - Poor*	*1 - Poor*	*1- Severely restricted (76% – 100% reduction)*	2 - Likely to be critical to species' survival
				Score	7	1	1	1	4
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	7.00	1.00	1.00	1.00	4.00

Habitat Quality Final Summary Template

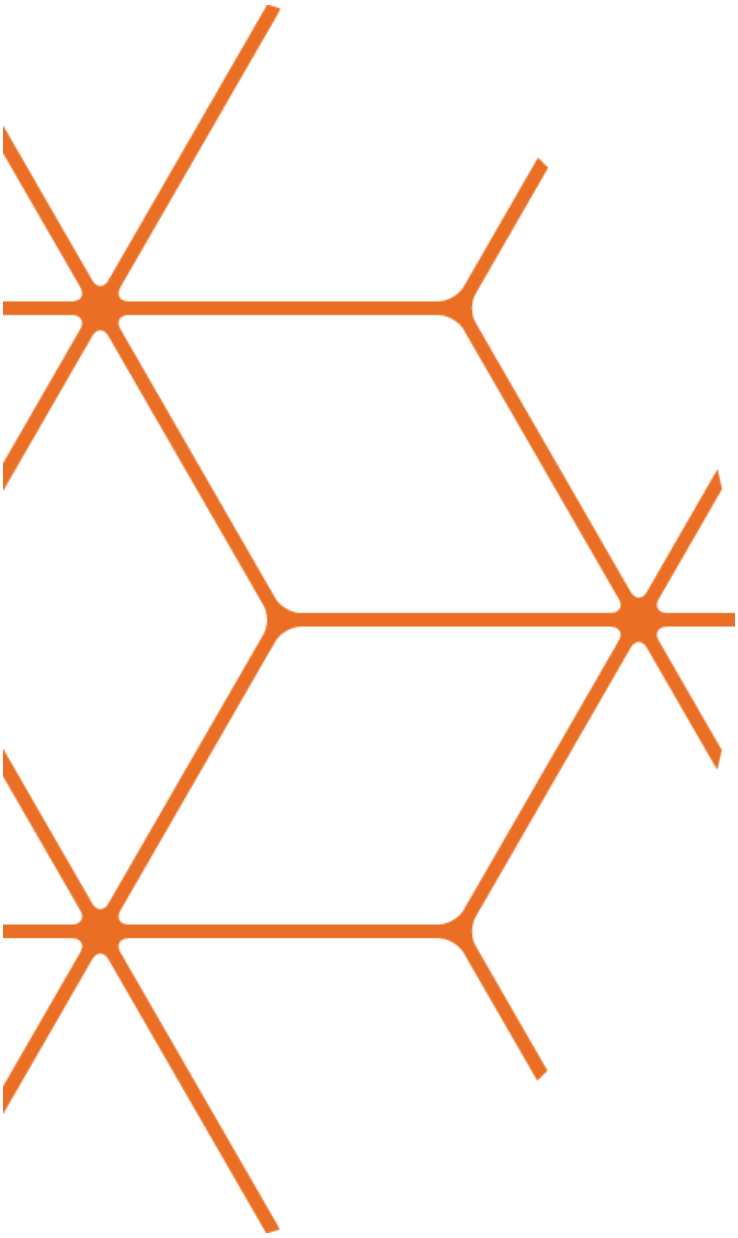
Case Reference	
Project Name	
Total Area	132

PART	Habitat Quality Attributes	Requirement	Assessment Unit Number									
			1	2	3	4	5	6	7	8	9	10
	Assessment Unit Area (ha)	Area (ha)	2	10	15	35	5	10	35	10	10	0
	Regional Ecosystems	RE	12.8.14	12.12.2	12.9-10.14	12.9-10.17	12.12.23	12.12.23	12.9-10.17	12.12.3	12.3.7	
	Bioregion	Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	
1	Site Condition Attributes	1. Recruitment of woody perennial species	Score	3	0	0	3	3	3	0	3	0	
		2. Native plant species richness										
		- Trees	Score	3	5	3	5	3	3	5	5	3	
		- Shrubs	Score	3	3	5	3	3	3	3	3	2.5	
		- Grasses	Score	3	3	3	3	3	3	3	3	2.5	
		- Forbs	Score	3	3	3	3	3	3	3	3	2.5	
		3. Tree canopy height											
		- Canopy layer	Score	5	5	5	5	5	5	5	5	5	
		- Sub-Canopy Layer	Score	3	3	3	3	3	5	5	5	3	
		- Emergent Layer	Score										
		Average Score	Average Score	4	4	4	4	4	5	5	5	4	
		4. Tree canopy cover											
		- Canopy layer	Score	5	5	5	5	5	5	5	5	2	
		- Sub-Canopy Layer	Score	5	5	5	5	5	5	2	5	0	
		- Emergent Layer	Score										
		Average Score	Average Score	5	5	5	5	5	5	3.5	5	1	
		5. Shrub canopy cover	Score	3	5	3	3	3	3	5	3	0	
		6. Native perennial grass cover	Score	0	1	1	5	3	5	1	3	0	
		7. Organic litter	Score	5	3	3	5	3	3	5	5	0	
		8. Large trees	Score	5	5	5	5	10	10	5	5	5	
		9. Coarse woody debris	Score	2	5	5	5	2	5	5	5	0	
		10. Weed cover	Score	5	5	5	5	5	5	5	5	5	
2	Site Context Attributes	11. Size of patch (fragmented)	Score	10	2	10	10	10	10	10	2	2	
		12. Connectedness (fragmented)	Score	5	5	5	5	5	5	5	5	5	
		13. Context (fragmented)	Score	5	5	5	5	5	5	5	0	5	
		14. Distance from water (intact)	Score	0	0	0	0	0	0	0	0	0	
		15. Ecological corridors	Score	6	6	6	6	6	6	6	6	6	
3	Species Habitat Index	16. Threats to species	Score	15	15	7	7	7	7	7	7	7	
		17. Quality and availability of food and foraging habitat	Score	10	10	5	10	10	10	10	10	1	
		18. Quality and availability of shelter	Score	10	10	10	10	10	10	10	10	1	
		19. Species mobility capacity	Score	10	10	4	7	7	4	7	10	1	
		20. Role of site location to overall population in the State.	Score	4	4	4	4	4	4	4	4	4	

Habitat Quality Score (measured)	119.00	114.00	101.00	118.00	114.00	117.00	112.50	107.00	57.50	
Habitat Quality Score (max)	176.00	176.00	176.00	176.00	176.00	176.00	176.00	176.00	176.00	
Assessment Unit Area (ha)	2.00	10.00	15.00	35.00	5.00	10.00	35.00	10.00	10.00	0.00
Assessment Unit Habitat Quality Score	6.76	6.48	5.74	6.70	6.48	6.65	6.39	6.08	3.27	
Size weighting	0.02	0.08	0.11	0.27	0.04	0.08	0.27	0.08	0.08	
Weighted Assessment Unit Habitat Quality Score	0.10	0.49	0.65	1.78	0.25	0.50	1.69	0.46	0.25	
FINAL TOTAL HABITAT QUALITY SCORE	**6.17**									

APPENDIX G

Weed Distribution (Cover) Plan



NOTES

Figure indicative only

PIPECLAY DIP ROAD

MCQUILLAN ROAD

File: 2215-Meads-Weed-Distribution-210721

WEED DISTRIBUTION (COVER) PLAN

0 100 200 300 Meters

A3 Scale 1:6,000

N

Subject Site

Offset Area (132Ha)

Weed Distribution

Scattered, <25% cover (84.8 Ha)

Scattered to Dense, 26-75% cover (5.6 Ha)

Dense, 76-90% cover (32.6 Ha)

Impenetrable, >91% cover (8.9 Ha)

Sheet Number:	1
Project:	2215
Version:	0
Date:	22/03/19
Sources:	Cadastral boundaries: QLD DCDB DNRM 2021 Aerial Photo: Google Earth 11/1/2017 Weed distribution data (New Ground 2005)