



Annual Compliance Report

29 March 2021 to 28 March 2022 EPBC 2017/7875

Woogaroo Heights Master Planned Residential Development,
Springfield, Queensland

Prepared for Lend Lease Communities (Springfield) Pty Limited
24 June 2022

Job No. 7927 E

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Acronyms and References

ACR	Annual Compliance Report
DAM	Declared Area Map
DAWE	Department of Agriculture, Water and the Environment (Cth)
DOR	Department of Resources (Qld)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
EPSC	Environmental Pre-start Checklist
GHFF	Grey-headed Flying-fox
ha	hectares
ICC	Ipswich City Council
km	kilometres
m	metres
MNES	Matters of National Environmental Significance
PMVA	Property Map of Assessable Vegetation
QFC	Queensland Fauna Consultancy
SAT	Spot Assessment Technique
SHG	Saunders Havill Group
VDEC	Voluntary Declaration (under the <i>Vegetation Management Act 1999</i>)
VMA	<i>Vegetation Management Act 1999</i> (Qld)
WHIMP	Wildlife Habitat Impact Mitigation Plan
WPMP	Wildlife Protection Management Plan

1. Introduction

The Environmental Management Division of **Saunders Havill Group** was engaged by **Lendlease Communities (Springfield) Pty Limited** (Lendlease) to prepare this Annual Compliance Report for the Woogaroo Heights Master-Planned Residential Development at Spring Mountain, Queensland. This report provides an assessment of project compliance with the approval granted under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (ref EPBC 2017/7875), and is specifically required by condition 16 of the approval granted on 30 November 2020 (refer **Appendix A**).

The project area covers approximately 57.03 hectares (ha) and is located 1 kilometre (km) west of Springfield Central (refer to project context map at **Figure 1**). Woogaroo Heights is located adjacent to EPBC Act approved development EPBC2013/7057. The EPBC 2017/7875 approval conditions permit an impact to 57.03 ha of Matters of National Environmental Significance (MNES) habitat being Koala habitat and Grey-headed Flying-fox (GHFF) foraging habitat.

1.1. Approval details

Lendlease Communities (Springfield) Pty Ltd, as the Proponent of the Project (ref EPBC 2017/7875) was issued with an approval by the Department of Agriculture, Water and the Environment (DAWE) on 30 November 2020, subject to conditions. Refer to **Appendix A** for a copy of the EPBC Act approval. Key details related to EPBC 2017/7875 are provided in **Table 1**.

Table 1: Approval Details

Commonwealth reference	EPBC 2017/7875
Approval holder	Lendlease Communities (Springfield) Pty Ltd
ACN	087 876 864
Approval date	30 November 2020
Expiry date of approval	01 January 2033
Approved action	To develop the Woogaroo Heights residential development located within the Greater Springfield Master Planned Development Area, approximately 10 km east of the Ipswich Central Business District, Queensland.
Controlling provision	Approved – listed threatened species and communities (sections 18 & 18A)
Project commencement	29 March 2021
Reporting period	Year 1 — 29 March 2021 to 28 March 2022
Address	London Avenue, Spring Mountain
Local government area	Ipswich City Council (ICC)

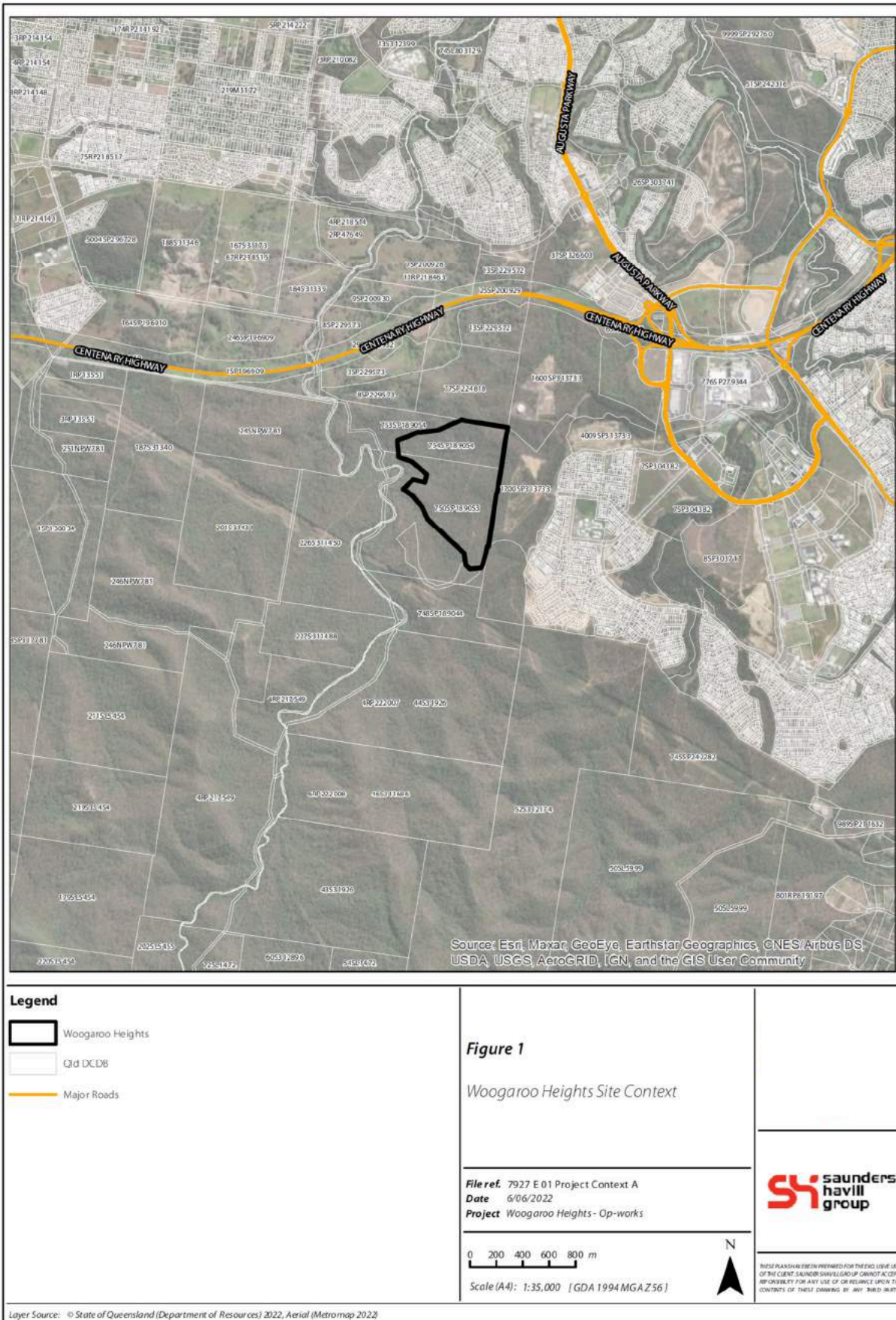


Figure 1: Project context

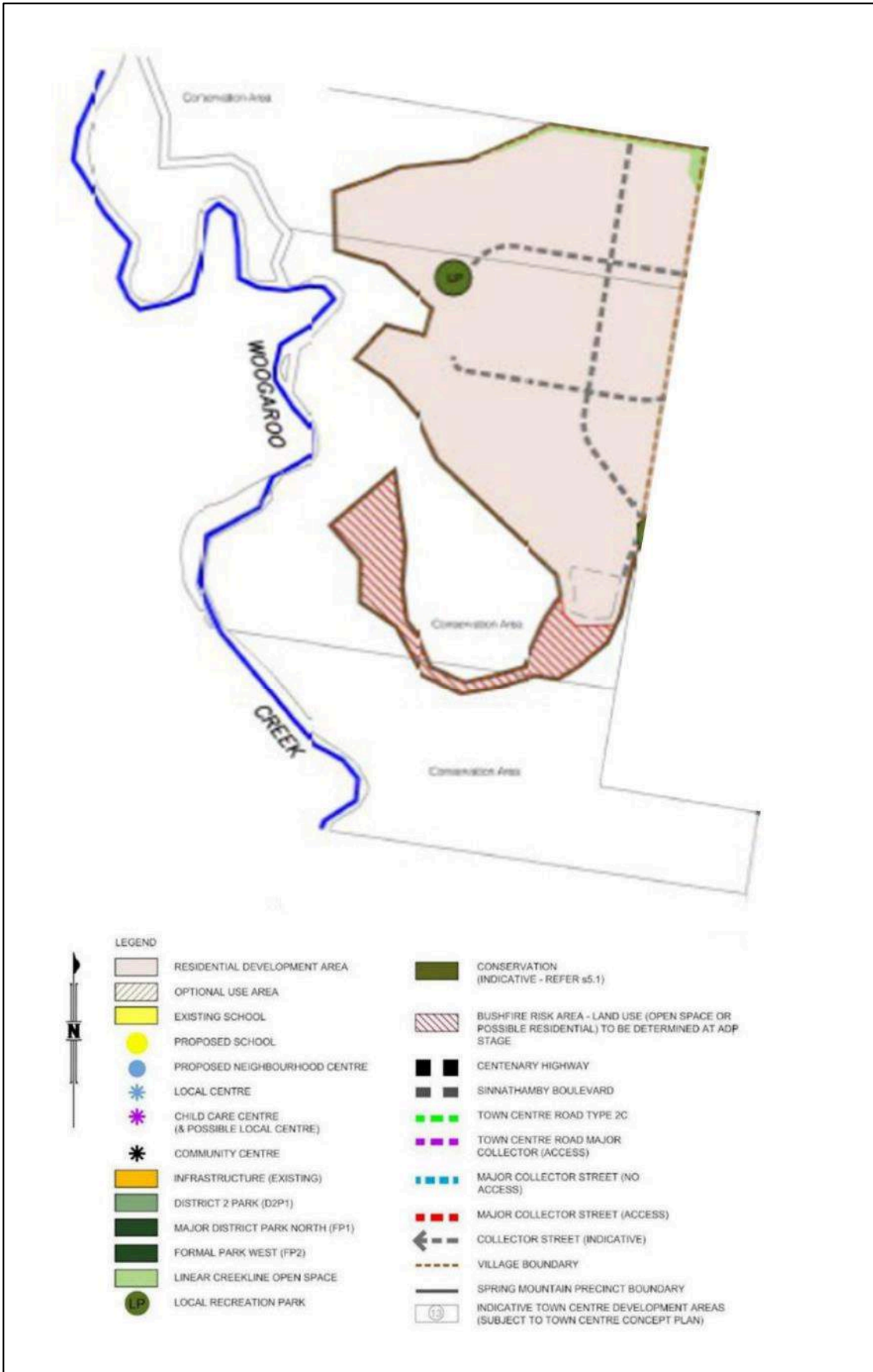
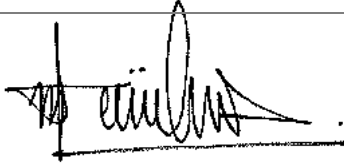


Figure 2: Woogaroo Heights Precinct Plan

1.2. Declaration of accuracy

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed	
Full name	Murray Saunders
Position	Director
Organisation	Saunders Havill Group ABN 24 144 972 949
Date	24 June 2022

1.3. Description of activities

The project commenced on the 29 March 2021 with the commencement of baseline surveys at The Meads offset site. Baseline surveys were conducted by the offset provider and completed on 15 May 2021. The baseline survey report (New Ground, 2021) was completed on 3 August 2021, with DAWE notified of the report on the 3 August 2021. In addition to completing the baseline surveys and reporting during the first year of the project, repairs of the perimeter fence of the offset site involving the removal of barbed wire was completed.

Vegetation Clearing commenced in the impact area on the 28 July 2021 associated with unexploded ordinance (UXO) clearances. The Department was notified of the commencement of clearing on the 3 August 2021.

During this reporting period the COVID-19 pandemic continued to significantly impact the project progress and associated activities. As a result of the pandemic, government enforced restrictions were implemented and workplace health and safety systems were updated to include measures to mitigate the risk of infection and transmission. Measures included border closures, restrictions to travel distances and the number of people permitted within indoor and outdoor spaces including workplaces, contact tracing measures to record visitor information and people were encouraged to maintain a distance of 1.5 m from others. This disruption resulted in a one business day delay in notifying the department regarding the commencement of the action. The action commenced though baseline surveys at the offset site, with the Department notified on the 8 April 2021. The non-compliance was addressed with the notification. The department acknowledge and determined no further action was required.

1.4. Report structure

The approval includes eleven site-specific approval conditions and a further eleven administrative approval conditions. Site-specific conditions have been categorised into:

1. Impact management
2. Offset Baseline Surveys (habitat for the Koala and Grey-headed Flying-fox)

The approval conditions include a number of 'outcomes based' conditions and Parts A and B of this report detail how the implemented management actions will achieve, or are achieving, the outcomes. This includes details of the management strategies and any adaptations that occur during the term of the approval. The compliance table is presented in **Section 2** followed by Parts A and B, and Appendices as illustrated in the **Figure 3** below.

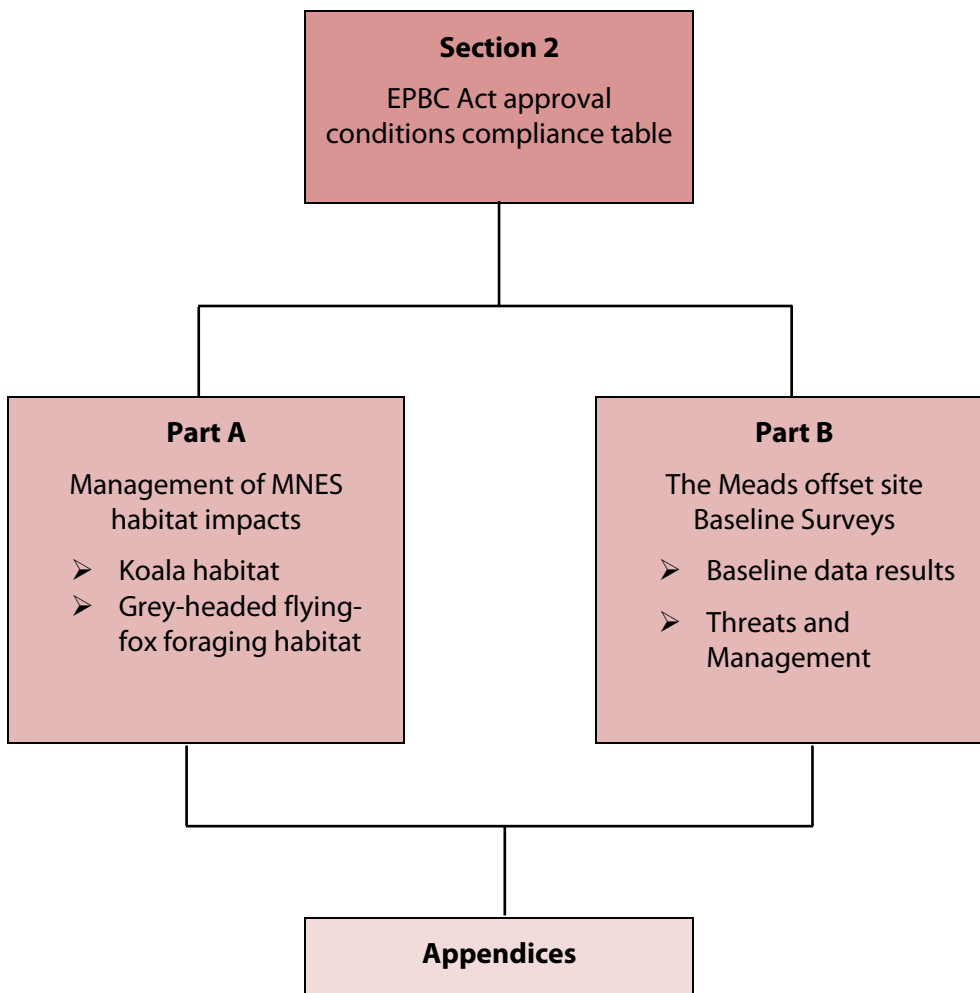


Figure 3: Annual Compliance Report Structure

1.5. Key Consultants and Roles

Table 2 below is a list of the key appointed contractors and their roles in the Project.

Table 2: Key Consultants and Roles

Role	Appointed Contractor
Development Manager	Lendlease
Project Engineer	Northrop Consulting Engineers (NCE)
Civil Contractor / Site Supervisor	Shadforth Civil
Clearing Contractor	Wood Mulching Industries
Environmental Coordinator	Saunders Havill Group
Fauna Spotter Catcher	Queensland Fauna Consultancy (QFC)

2. EPBC approval conditions compliance table

The EPBC Act approval conditions for the Woogaroo Heights residential development are replicated in **Table 3** with a designation on compliance or non-compliance if the condition was applicable during the reporting period, and evidence and comments as necessary. A copy of the EPBC Act approval and conditions is provided in **Appendix A**.

Table 3: EPBC approval conditions compliance table

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
1	For the protection of the Koala and Grey-headed Flying-fox, the approval holder must not clear more than 57.03 ha of Koala Habitat and Grey-headed Flying-fox habitat. The approval holder must only clear within the development area.	Compliant	Approximately 32.48 ha of habitat was cleared at the Woogaroo Heights impact site between 28 July 2021 and 28 March 2022.
2	For the protection of the Koala and Grey-headed Flying-fox at the development area, the approval holder must: <ul style="list-style-type: none"> 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 	Compliant Compliant Compliant	<ul style="list-style-type: none"> a. A suitably qualified and experienced fauna spotter catcher was present on-site during vegetation clearing which had the potential to impact wildlife clearing. There was no Koala injury or mortality as a result of vegetation clearing at the project site. As detailed in the post-clearing fauna spotter report (refer Appendix B), one (1) Koala was identified during a pre-clearing inspection. The tree was double flagged and a 50 m exclusion zone installed so the Koala could self-relocate. b. All vegetation clearing was supervised by QFC and in accordance with stipulations as expressed in the <i>Nature Conservation (Koala) Conservation Plan 2017</i> as detailed in the post-clearing fauna spotter catcher report completed by QFC (refer Appendix B). c. Temporary Koala exclusion fencing was installed around the perimeter of the clearing area during the reporting period (refer Section 3.2 Photo 1). d. Domestic dogs are not permitted to be brought on-site. There were no incidents on-site between dogs and Koalas during the reporting period.

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
	taking place until all construction activities within that fenced construction area are completed;		e. A speed limit of 40 km/h applies to all of site which is indicated through clear signage and site inductions.
	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;	Compliant	f. Construction of roads and infrastructure has not commenced.
	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;	Compliant	g. Construction of roads and infrastructure has not commenced.
	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	Not applicable	
	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.	Not applicable	

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
3	<p>To compensate for the clearing of 57.03 hectares of Koala habitat and Grey-headed Flying-fox foraging habitat, the approval holder must:</p> <ul style="list-style-type: none"> 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. 	<p>Compliant</p> <p>Compliant</p> <p>Compliant</p>	<ul style="list-style-type: none"> a. The Meads offset site was legally secured on 12 March 2021 prior to the commencement of vegetation clearing on 28 July 2021 using the Voluntary Declaration process administered under the <i>Vegetation Management Act 1999</i> (VMA). The Chief Executive of the Department of Resources (DOR) declared the Offset Area in a Declared Area Map (DAM 2020/014171) as an area of high nature conservation value in accordance with section 19F(1) of the VMA. The Meads offset site is shown as Category A on a Property Map of Assessable Vegetation (PMAV 2020/014172). Refer to Appendix C for the documentation. b. DAWE was notified and provided evidence via e-mail correspondence on 18 March 2021 that the offset site was legally secured, within the 20-business day timeframe. A shapefile of the offset attributes was provided at this same time. c. The Meads offset site is managed by New Ground as the third party offset provider. The only activities undertaken on-site are relevant offset activities carried out by New Ground.
4	<p>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:</p> <ul style="list-style-type: none"> 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 	<p>Compliant</p>	<p>The approval is dated 30 November 2020, therefore the due date for completing baseline surveys was 30 May 2021. Baseline surveys of The Meads offset site were completed by New Ground between 29 March and 15 May 2021. The baseline survey report is provided in Appendix E and included the details required by a. to e. of this condition.</p>

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
5	<p>e. Rate of Koala mortalities attributable to non-native predators.</p> <p>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).</p>	Compliant	<p>The baseline surveys were completed at the offset site on 15 May 2021 making the associated report due on 15 August 2021. The report was published and provided to DAWE on 2 August 2021.</p> <p>The baseline survey ecological report is available on the Proponent’s website at the following weblink: <https://communities.lendlease.com/queensland/springfield-rise/living-in-springfield-rise/sustainability-and-environment/></p>
6	<p>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:</p> <ul style="list-style-type: none"> 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. 	Compliant	<p>The last day of Year 1 was 29 November 2021. New Ground confirmed on 15 November 2021 that the following outcomes were achieved on The Meads offset site:</p> <ul style="list-style-type: none"> a. The perimeter fence was repaired to exclude livestock from the offset area. b. All barbed wire throughout the offset area was removed. c. Permission was gained from all neighbours to replace the top strand of barbed wire along the perimeter with plain wire, negating the need for metal tags.
7	<p>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:</p>	Not applicable	<p>Baseline surveys were conducted by New Ground to determine baseline habitat values on The Meads offset site during Year 1.</p> <p>Condition 7 is not required to be met until Year 8.</p>

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
	<ul style="list-style-type: none"> 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.	Compliant	The requirements of Condition 6 were met during this reporting period as detailed above. Fences will continue to be monitored and repaired where necessary.
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.	Compliant	Condition 7 is not applicable until Year 8. 1080 bait was not used on The Meads offset site during the 2021-2022 reporting period.
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	Not applicable	This condition relates to future work that is not required until Year 4 (2024/2025).

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
	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	<p>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.</p> <ul style="list-style-type: none"> 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. 	Not applicable	A corrective action plan was not requested by the Minister.
Notification of date of commencement of the action			
12	<p>The approval holder must notify the Department in writing of:</p> <ul style="list-style-type: none"> 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. 	<p>12a Non-compliant</p> <p>12b Compliant</p> <p>12c Not applicable</p>	<ul style="list-style-type: none"> a. The action commenced through the baseline surveys at The Meads offset site on the 29 March 2021. DAWE was notified on 8 April 2021 of the commencement of the action. The notification was one business day late. The non-compliance was addressed within the notification and no further action was taken by the Department given the circumstances. b. Vegetation removal associated with undertaking UXO clearances commenced on the 28 July 2021. The Department was notified on

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
			<p>3 August 2021, which was the fourth day after the commencement of the clearing and therefore within the accepted timeframe.</p> <p>c. Construction has not commenced.</p>
13	<p>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.</p>	Not applicable	<p>The action commenced through the commencement of baseline surveys at the Meads offset site on 29 March 2021.</p>
Compliance Records			
14	<p>The approval holder must maintain accurate and complete compliance records.</p>	Compliant	<p>All records substantiating all activities associated with or relevant to the conditions of approval are maintained by the approval holder. If required by the Minister, these records can be made available to allow a third-party audit of the Project.</p>
15	<p>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.</p>	Not applicable	<p>A request from the Department for compliance records was not received during the reporting period.</p>
Annual Compliance reporting			
16	<p>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:</p> <ol style="list-style-type: none"> 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; 	Not applicable	<p>This report is based on the first anniversary (there is no prior reporting applicable to the condition).</p>

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
	<ul style="list-style-type: none"> 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. 		
Reporting non-compliance			
17	<p>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:</p> <ul style="list-style-type: none"> 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. 	Compliant	<p>A minor non-compliance occurred during the 2021/2022 reporting period, being the notification to the Department outside of the required timeframe for the commencement of the action (Condition 12a).</p> <p>The action commenced through baseline surveys at the offset site on 29 March 2021. DAWE was notified on the 8 April 2021 which was one business day late.</p>
18	<p>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:</p> <ul style="list-style-type: none"> a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; 	Compliant	<p>A minor non-compliance occurred during the 2021/2022 reporting period, being the notification to the Department outside of the required timeframe for the commencement of the action (Condition 12a).</p> <p>The non-compliance was addressed within the notification. The following response was provided by the Department response via e-mail:</p>

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
	<ul style="list-style-type: none"> 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. 		<p><i>"I note the delay in providing a notification of commencement to the Department due to recent changes in the COVID-19 situation. While the delay constitutes a breach of condition 12.a. of the approval, enforcement action is not considered appropriate in this instance, and as such no further action will be taken in response to the non-compliance."</i></p>
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.	Not applicable	The Minister did not request an independent audit during the reporting period.
20	<p>For each independent audit, the approval holder must:</p> <ul style="list-style-type: none"> 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. 	Not applicable	The Minister did not request an independent audit during the reporting period.
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.	Not applicable	The Minister did not request an independent audit during the reporting period.
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.	Not applicable	The action was not completed during the reporting period.

3. Part A – MNES habitat impact management

3.1. Vegetation Clearing Protocol

Approvals relating to impacts on ecological matters were collated from Commonwealth, State and Local governments for the project and included several overarching environmental management plans. To streamline pre-start documentation and environmental management authorisations, an Environmental Pre-Start Checklist (EPSCl) was developed for Woogaroo Heights. This checklist was integral to ensuring clearing proceeded within the demarcated limits, suitable fencing was installed across the work area and the necessary checks for threatened fauna were completed prior to the clearing of any vegetation. The diagram below illustrates the key steps in this process. After completing the checklist and all required parties sign-off, vegetation clearance activities proceeded under the supervision of the fauna spotter catcher. Refer to **Figure 5** for the EPSCl template. A completed EPSCl for Woogaroo Heights from February 2022 is provided in **Appendix E**.

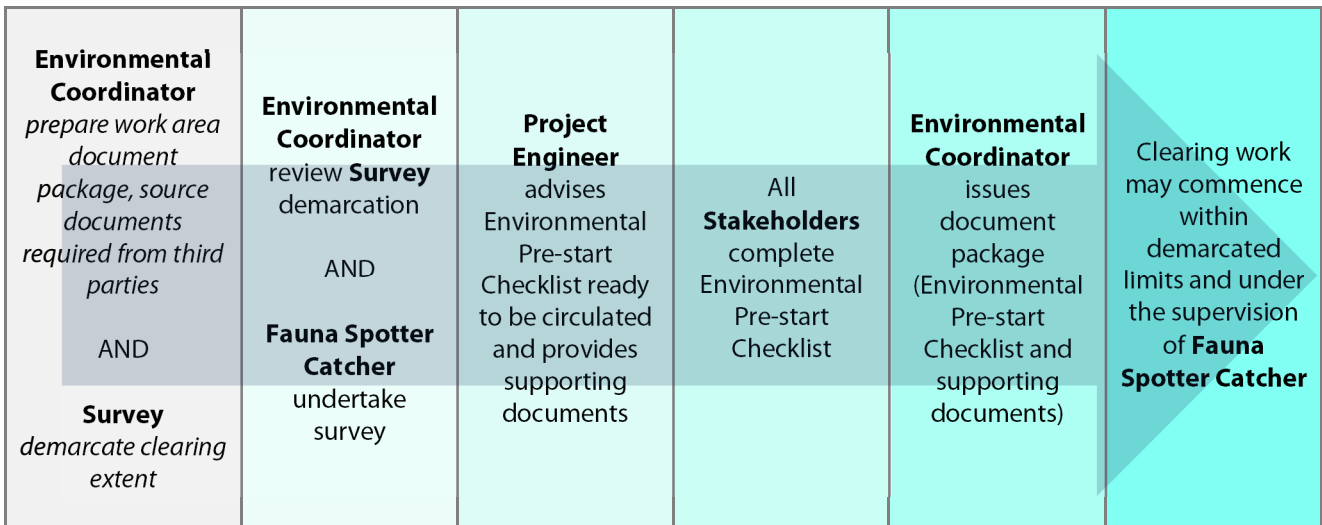


Figure 4: Key steps prior to commencing impact work at Woogaroo Heights

Woogaroo Heights Environmental Pre-Start Checklist

Project Area: Woogaroo Heights		Date:			
Contractor:		Construction Stage/ Activity:			
Date work is to start:					
Date work is to cease (estimate):					
Compliance					
#	Control Measure	Yes	No	N/A	Comments
1	Is the works extent within the EPBC approved clearing area?				
2	Are clearing extents marked out and fenced? (N.B. Fencing is required as per ICC permits unless instructed otherwise by Council, Fauna Spotter or Environmental Coordinator)				
3	Has the fencing of clearing extents demarcation been inspected by the Environmental Coordinator?				
4	Has sign off been provided by the Environmental Coordinator for demarcation areas?				
5	Has certification for pre-clearance flora been provided? (N.B. Exemptions/permits for protected plants under the NCA must be obtained by DES where works occur in a High Risk Area). Please provide date and reference.				
6	Have pre-clearance checks surveys for <i>Coleus habrophyllus</i> been completed over the clearing area?				
7	If <i>Coleus habrophyllus</i> 'no-go' zones have been identified within the clearing area, have these been demarcated, fenced, signed and inspected by the Environmental Coordinator and Contractor?				
8	If works involve clearing within a Fisheries mapped waterway for waterway barrier works, are the works compliant with applicable accepted development codes and / or permits?				
9	If works involve clearing within a watercourse defined under the <i>Water Act 2000</i> , are the works compliant with applicable exemptions and / or permits?				
10	Has the appointed DES permitted Fauna Spotter completed pre-clearance surveys and reports within 2 weeks of clearing?				

Figure 5: Environmental Pre-start Checklist template example

Woogaroo Heights Environmental Pre-Start Checklist

11	If the appointed Fauna Spotter identified any sensitive areas for consideration in clearing methods, have these been addressed?			
12	If a sick or injured animal, specifically a koala, is identified during clearing, are appropriate controls in place to ensure the animal can seek medical attention if required?			
13	Have all contractors, subcontractors and associated personnel been instructed on environmental procedures and controls?			
14	Has a Council pre-start been completed?			

NOTE: If the answer to any question above is NO then the clearing activity will not proceed.

- Attachment 1 — Works Extent
- Attachment 2 — EPBC Referral Extent Confirmation
- Attachment 3 — Environmental Coordinator Demarcation Flagging Sign-off
- Attachment 4 — DES Exempt Clearing Protected Plants Notification
- Attachment 5 — *Coleus habrophyllus* survey and sign-off by Environmental Coordinator
- Attachment 6 — Pre-clearance survey and Wildlife Protection & Management Plan (WPMP) prepared by Fauna Spotter Catcher
- Attachment 7 — Wildlife and Habitat Impact Mitigation Plan (WHIMP) prepared by Fauna Spotter Catcher
- Attachment 8 — Contractor Environmental Awareness Acknowledgement Notice
- Attachment 9 — Pre-start completion confirmation

Compliance Awareness

All works are to be undertaken in accordance with the Woogaroo Heights approvals which includes this Environmental Pre-Start Checklist and attachments.

Signing below demonstrates acknowledgement of the environmental pre-start procedures and requirements listed in the checklist above and associated attachments.

Name	Company	Position	Signature	Date
		Client Representative		
		Site Contractor		
		Clearing Contractor		
		Fauna Spotter Catcher		
		Project Engineer		
		Environmental Coordinator		

3.2. Review of impacts

The removal of vegetation from the development area impacted MNES habitat which is defined under the approval conditions as Koala habitat and Grey-headed Flying-fox foraging habitat. As of 28 March 2022, a total of 32.48 ha of habitat was impacted. The approval conditions permit the approval holder a maximum impact of 57.03 ha of habitat in the development area, therefore the approval holder has complied with the approved limit (condition 1).

After the UXO clearance work, vegetation clearing occurred in two clearing tranches:

- Tranche 1 – October 2021
- Tranche 2 – February 2022

An environmental pre-start package was compiled prior to the commencement of each tranche. The EPSCL is a procedure in place that is the approval holder's review of proposed impacts on MNES habitat and sets out to prevent injuries to wildlife during all works. Examples of such measures implemented on the site include:

- Installation of temporary fauna exclusion fencing to prevent fauna from entering the work area (refer **Photo 1**).
- Presence of project fauna spotter catcher during all clearing activities. Post-works reporting completed by the project fauna spotter catcher indicated the mitigation measures were successful as no Koala injuries or mortalities occurred during vegetation clearing.



Photo 1: Temporary perimeter fauna exclusion fencing

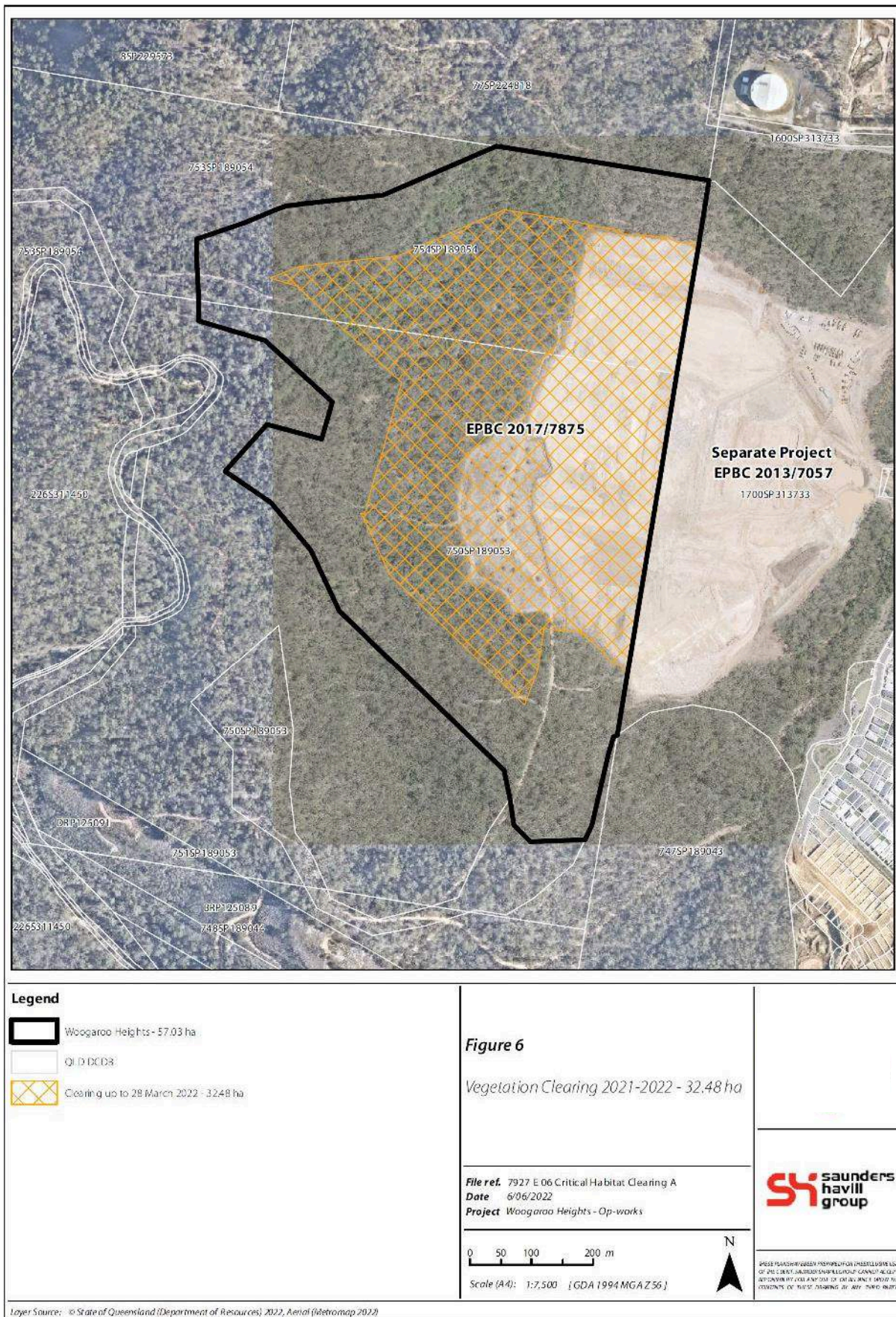


Figure 6: Vegetation Clearing 2021-2022

4. Part B – Offset site management

The 132 ha offset under Condition 3 of the approval is located on part of Lot 18 on CA31460 and provides Koala habitat and Grey-headed Flying-fox foraging habitat (refer **Appendix A**). To deliver the environmental offset, Lendlease have partnered with New Ground as the third-party environmental offset provider. The offset area was legally secured on 12 March 2021 prior to the commencement of vegetation clearing on 28 July 2021 using the Voluntary Declaration process administered under the *Vegetation Management Act 1999*. The Chief Executive of the Department of Resources (DOR) declared the offset area in a Declared Area Map (DAM 2020/014171) as an area of high nature conservation value in accordance with section 19F(1) of the VMA. The Meads offset site is shown as Category A on the certified Property Map of Assessable Vegetation (PMAV 2020/014172). Refer to **Appendix D** for the Certified PMAV document package.

The objective as per Condition 7, to managing the offset area for the Koala, Grey-headed Flying Fox and their habitat is to achieve the following outcomes by Year 8.

- *Restore Vegetation condition to the 'BioCondition Benchmarks to be achieved' for each Regional Ecosystem, as specified in Approval Document – Attachment A (refer to **Appendix A**).*
- *Ensure that at least 6 different Grey-headed Flying-fox foraging species (which in combination much provided annual winter and spring foraging resources for the GHFF) occurs within each quarter.*
- *Ensure that the extent of weed cover across the whole of The Meads offset site is less than 5%*
- *A reduction in the number of non-native predators and non-native herbivores by 90%, relative to the number identified during baseline surveys.*
- *A reduction in the rate of Koala mortalities attributable to non-native predators by 90%, relative to the numbers identified during baseline surveys.*

New Ground completed baseline surveys to meet Conditions 4 and 5 of the approval with diurnal field investigations completed over a period of 5 days between 29 March and 2 April 2021 and camera trapping surveys completed between 29 March and 15 May 2021 (New Ground, 2021).

The current quality and extent of the offset site is influenced by several factors including the presence of weeds and pest animals, and vegetation attributes (e.g. species diversity, ecological dominant layer). To arrive at a baseline metric, New Ground completed the following surveys.

- BioCondition Assessments
- Habitat Quality Assessment Method
- Vegetation Community Surveys
- Exotic Flora and Fauna Surveys
- Camera trapping
- Koala Spot Assessment Technique

- Observation Sites
- Disturbance Surveys

The complete Baseline Ecological Report completed by New Ground is provided in **Appendix D**. The field survey effort plan has been extracted from the Baseline Ecological Report and is provided below (refer **Figure 7**).

4.1. Limitations

During baseline surveys, New Ground (2021) acknowledged that *“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”*.

Limitations from the baseline surveys was summarised: *“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”* (New Ground, 2021).

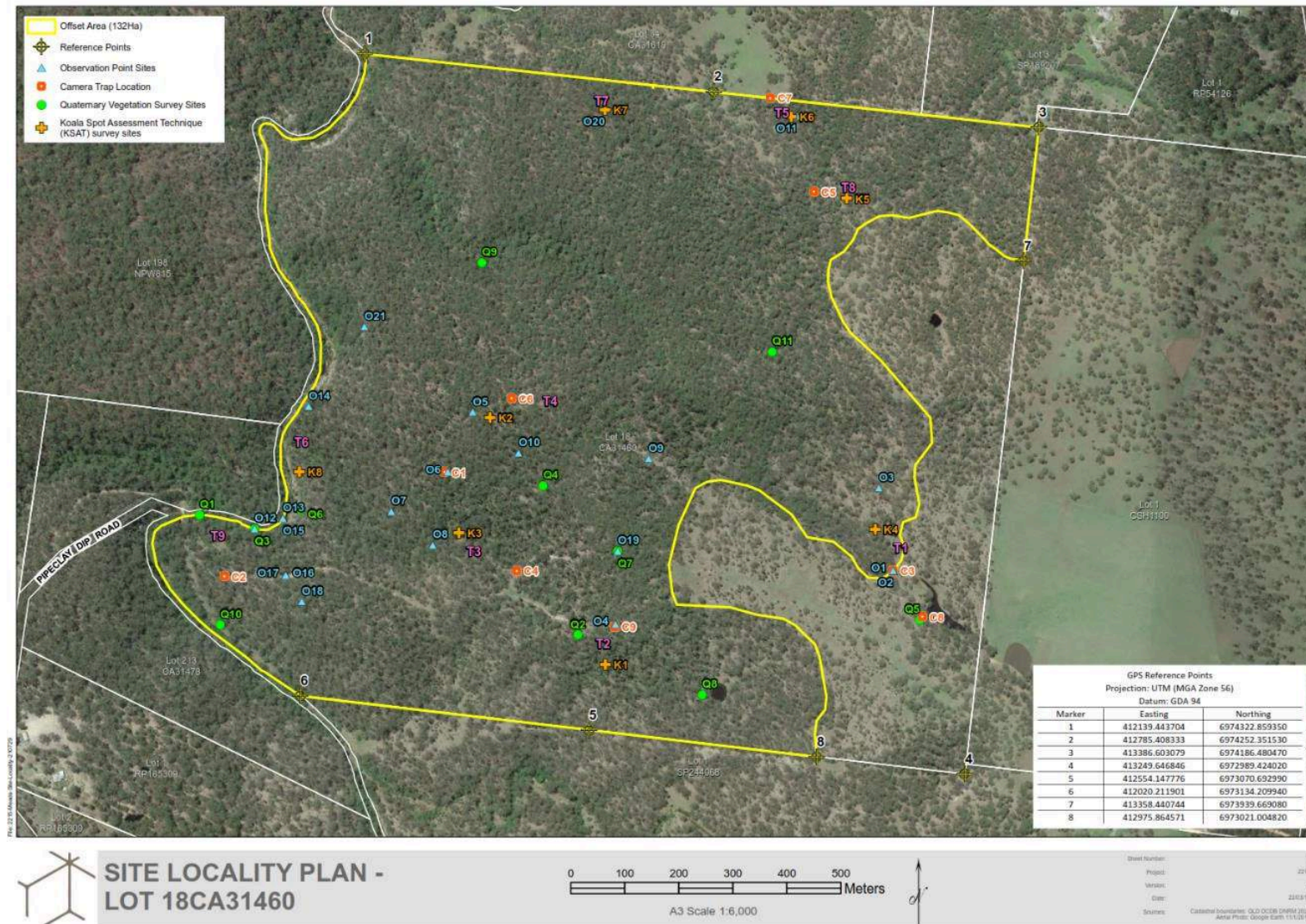


Figure 7: Baseline Field Survey Effort (extracted from New Ground Baseline Ecological Report (2021))

4.2. Baseline Surveys

4.2.1 BioCondition Survey

Nine (9) BioCondition surveys in accordance with *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland* (Eyre et al., 2015). The BioCondition assessment is a condition assessment framework for Queensland that provides a measure of how well a terrestrial ecosystem is functioning for biodiversity values. The BioCondition assessment is site-based and quantitative, and therefore a procedure that can be replicated and used across any vegetative state. The assessment provides a numerical score that can be summarised as a condition rating when compared to a BioCondition benchmark. Nine (9) BioCondition transects were conducted across the offset site, within the seven (7) identified vegetation communities on-site (refer **Table 4**).

BioCondition benchmarks are based on the average or median values of a mature and long undisturbed 'reference' site or from the best-on-offer sites. As per EPBC Act Approval Condition 7, the vegetation is to be restored to the *BioConditions to be achieved* for each RE, provided in Attachment A of the EPBC Act approval (refer to **Table 5** for extracted *BioConditions to be achieved* and **Table 6** for comparing baseline conditions to BioCondition Benchmarks to be achieved, averaged across each Regional Ecosystem).

To meet Condition 4b of the EPBC Act Approval, the number of GHFF foraging species in each quarter of the offset site is articulated, specifically including winter and spring flowering species. Species richness from the BioCondition transects were recorded and summarised to provide baseline conditions (refer **Table 7**).

4.2.2 Habitat Quality Assessment

Baseline data collected and applied to the Habitat Quality Site Assessment template that was consistent with *Guide to determining terrestrial habitat quality – Methods for assessing habitat quality under the Queensland Environmental Offset Policy* (DES, 2020) (New Ground, 2021). The Regional Ecosystem BioCondition data is a key component of the Habitat Quality Assessment Method, which allows the site condition to be applied specifically to the Koala and factors in threats to the species and species mobility. New Ground (2021) discuss that as the EPBC approval and conditions target the control of non-native predators and management of weed species, this method was viewed as technically rigorous to score the offset area for baseline purposes.

4.2.3 Vegetation Community Surveys

Vegetation community surveys were completed in accordance with industry best practices standards and used a methodology generally consistent *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland, Version 5* (Nelder et al., 2019) (New Ground, 2021). Vegetation community data was collected by New Ground (2021) from 11 modified quaternary sites. Sites were selected based on aerial photography patterns in vegetation communities and variations in vegetation communities on-site. As a minimum, the quaternary sites included date and time, locations, in field determination of remnant status, structural formation class using modified Specht (1970) classification system and floristic compositions and relative abundance of predominant species (New Ground, 2021).

Table 4: Extracted BioCondition Data Summary for REs recorded over the 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
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	SEQ	SEQ	SEQ	SEQ	SEQ	SEQ	SEQ	SEQ	SEQ
Recruitment of woody perennial species in EDL	25.00	16.50	16.60	25.00	33.30	33.00	12.50	55.00	0.00
Native plant species richness - trees	5.00	6.00	3.00	7.00	6.00	5.00	8.00	5.00	4.00
Native plant species richness - shrubs	3.00	4.00	3.00	4.00	2.00	3.00	3.00	5.00	0.00
Native plant species richness - grasses	2.00	2.00	2.00	4.00	3.00	3.00	2.00	2.00	0.00
Native plant species richness - forbs	6.00	7.00	7.00	11.00	8.00	6.00	8.00	12.00	0.00
Tree canopy height (Canopy)	20.00	24.00	24.00	24.00	22.00	20.00	20.00	20.00	20.00
Tree canopy height (Sub-canopy)	6.00	8.00	11.00	7.00	7.00	12.00	12.00	10.00	7.00
Tree canopy height (Emergent)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tree canopy cover (Canopy)	46.50	50.50	46.00	47.50	32.00	38.00	50.00	67.00	15.00
Tree canopy cover (Sub-canopy)	10.00	10.00	20.00	30.00	20.00	10.50	13.50	26.00	0.00
Tree canopy cover (Emergent)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shrub canopy cover	12.00	21.00	35.50	27.50	12.00	30.00	16.50	27.00	0.00
Native perennial grass cover	1.40	7.00	5.00	12.00	6.40	11.00	3.60	31.00	0.00
Organic litter	59.00	90.00	75.00	87.00	95.00	65.00	83.00	49.00	0.00
Large trees (euc plus non-euc) (per ha)	20.00	20.00	12.00	20.00	18.00	22.00	18.00	15.00	6.00
Coarse woody debris (per ha)	1130.00	780.00	420.00	820.00	1260.00	400.00	420.00	545.00	0.00
Non-native plant cover	19.00	14.50	75.50	27.00	36.50	61.50	18.50	21.50	90.00

Data extracted from New Ground, 2021

Table 5: BioCondition Benchmarks to be achieved

Habitat Quality Attributes	Regional Ecosystem					
	12.3.7	12.8.14	12.9-10.14b	12.9-10.17c	12.12.2	12.12.23
Tree canopy height (Canopy)	16	22	32	24	33	25
Tree canopy cover (Canopy)	30	60	55	57	59	56
Tree canopy height (Sub-canopy)	11	11	17	11	13	12
Tree canopy cover (Sub-canopy)	30	15	25	33	10	10

Table 6: Comparing Baseline Conditions to BioCondition Benchmarks to be achieved, averaged across each Regional Ecosystem

Habitat Quality Attributes	Regional Ecosystem					
	12.3.7	12.8.14	12.9-10.14b	12.9-10.17c	12.12.2	12.12.23
Tree canopy height (Canopy)	125.00%	90.91%	75.00%	91.67%	72.73%	84.00%
Tree canopy cover (Canopy)	50.00%	77.50%	83.64%	85.53%	85.59%	62.50%
Tree canopy height (Sub-canopy)	63.64%	54.55%	64.71%	86.36%	61.54%	79.17%
Tree canopy cover (Sub-canopy)	0.00%	66.67%	80.00%	65.91%	100.00%	152.50%

Table 7: Extracted GHFF species recorded at Regional Ecosystems across the offset site

Regional Ecosystem	Total Number of GHFF Species	Number of Winter/Spring Foraging Species	Proportion of Offset Area (%)
12.3.7	8	5	< 13.5
12.8.14	7	6	1.5
12.9-10.14b	3	3	< 71
12.9-10.17c	14	13	< 71
12.12.2	6	5	< 9.8
12.12.3	6	5	< 9.8
12.12.23	9	7	< 17.5

Data extracted from New Ground, 2021

4.2.4 Weed Coverage

Baseline surveys focused on ground-truthing weed mapping that was previously prepared across the offset site by New Ground in 2019 (New Ground 2021) (refer to **Table 8** for extracted baseline weed coverage). Two species of weed were identified to be of management concern being *Lantana camara* (Lantana) and *Ligustrum lucidum* (Broad-leaved Privet). These species are known to form thickets that can impede Koala movement and suppress succession of native flora species (New Ground 2021).

Table 8: Baseline Weed Coverage

Weed Coverage	Scattered (<25%)	Scattered to Dense (26-75%)	Dense (76-90%)	Impenetrable (>90%)
Area (ha)	84.8	5.6	32.6	8.9
Percentage (%)	64.242	4.242	24.697	6.742

Data extracted from New Ground, 2021

4.2.5 Baseline Non-native Predator and Herbivore Abundance

Nine (9) remote-triggered camera traps were installed across the offset site to collect baseline data and detected targeted introduced species. Camera traps were generally located close to tracks (preferably crossroads) as well as site cues including apparent deer rubs, dog scats and deer grazing areas in a clear line of sight. The camera traps were baited with large pieces of barbecued chicken. Each camera site was set up in a permanent site with the installation of star pickets to allow for future camera trap surveys to be in the same baseline location. The camera traps were deployed from 29 March 2021 to 15 May 2021 for a total of 46 nights (New Ground, 2021). Camera images were downloaded and analysed with all species identified subsequently included in the site fauna list. **Table 9** displays the extracted baseline non-native predator and herbivore abundance.

Table 9: Baseline Non-native predator and Herbivore Abundance over offset area

Camera Trap Site	Number of Trap Nights	Species of interest				
		<i>Canis familiaris</i>	<i>Vulpes vulpes</i>	<i>Cervus elaphus</i>	<i>Bos taurus</i>	<i>Canis lupus</i>
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
C5	-	-	-	-	-	-
C6	45	4	1	0	>45	1
C7	46	6	1	8	>46	3
C8	-	-	-	-	-	-
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

Data extracted from New Ground, 2021

4.2.6 SAT survey

New Ground (2021) completed Spot Assessment Technique (SAT) surveys across The Meads offset site generally in accordance with the methodology developed by the Australian Koala Foundation (as per Phillips and Callaghan 2011). To broaden the coverage across the offset site, New Ground slightly modified the SAT survey methodology. The SAT method is an assessment of Koala activity involving a search for any Koalas and signs of Koala usage such as scats and scratch marks. The SAT involves identifying a non-juvenile tree of any species within the site that is either observed to have a Koala or scats, or is known to be a food tree or otherwise important for Koalas, and recording any evidence of Koala usage of that tree including presence, identifiable scratches or scats. The nearest non-juvenile tree is then identified and the same data recorded. The next closest non-juvenile tree to the first tree is then assessed and so on until 30 trees have been surveyed. New Ground (2021) reduced the number of trees to be surveyed from 30 to 20 to broaden the survey of the offset site. The number of trees showing evidence of Koala activity is expressed as a percentage of the total number of trees sampled to indicate the frequency of Koala usage. Assessment of each tree involves a systematic search for Koala scats beneath the tree within one metre radius of the trunk. After approximately two-person minutes of searching for scats, the base of the trunk is observed for scratches and the crown for Koala (refer Phillips and Callaghan, 2011).

During the baseline surveys, New Ground conducted eight (8) SAT surveys to obtain a sample of potential Koala usage associated with the BioCondition survey sites, with the exception of Transect 9 due to high weed infestation (New Ground, 2021).

Evidence of Koala usage in the form of scats was detected at SAT site 1, 2 and 4. Koala usage is considered low at all locations except for SAT Site 1 having high usage (New Ground, 2021). These estimates are taken from the Australian Koala Foundation Koala activity level classification table (following Philips and Callaghan, 2011) using the East Coast (med-high) Activity Category (refer **Table 10** for extracted Baseline SAT Survey Results).

Table 10: Baseline SAT survey results

SAT Site	Regional Ecosystem	Evidence of koala use (%)	Koala use (high/medium/low)
1	RE 12.12. 2	35	High
2	RE 12.9-10.17c	10	Low
3	RE 12.9-10.14b	0	Low
4	RE 12.8.14	5	Low
5	RE 12.12.3	0	Low
6	RE 12.12.23	0	Low
7	RE 12.9-10.17c	0	Low
8	RE 12.12.3	0	Low

Data extracted from New Ground, 2021

4.2.7 Observation Sites

Twenty-one (21) observation sites were recorded across the offset site, used to record general observations such as evidence of disturbance, permanent water features, changes to weed cover, opportunistic Koala

evidence and location of partially overgrown or obstructed access tracks (New Ground, 2021). Observation sites included photographs, GPS co-ordinates and notes collected at each site.

4.2.8 Disturbance Surveys

Observed disturbance was recorded at each formal vegetation survey plot and observation sites across the offset area (New Ground, 2021). Disturbance survey locations included the frequency, severity of the disturbance was assessed recorded into the following categories:

- Erosion
- Fence lines
- Fire breaks
- Flooding
- Grazing
- Logging
- Mechanical Clearing
- Prescribed burning
- Thinning
- Wildfire
- Wind storm
- Vehicle tracks

Subsequent site surveys will allow for a direct comparison to this data.

4.3. Threats

Multiple threats to Koala and GHFF were identified on the offset site. In addition to the threats listed below, the presence of barbed wire fencing throughout and along the perimeter offset site pose a risk to Koalas and GHFF.

Known threats identified on The Meads offset site include:

1. Weeds — specifically weeds of national significance such as *Lantana camara* and *Ligustrum lucidum*
2. Pest animals — evidence of wild dogs and other predatory species occur on-site

To support the future achievement of the gain in habitat quality milestone for benefit of the Grey-headed Flying-fox and Koala, several management actions are recommended to address the threats. These actions are discussed in the following subsections and detailed in **Table 11**. This table will be reviewed annually as part of completing the Annual Compliance Report and the status/results of actions discussed accordingly.

4.3.1 Barbed wire fencing

Condition 6 of the EPBC Approval states that for the protection of Koala, GHFF and their habitat, the approval holder must, by the end of Year 1, achieve the following outcomes at The Meads offset site:

- 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.*

To meet Condition 6, New Ground confirmed that the fence correction work was completed at The Meads offset site on 15 November 2021. This included the removal of barbed wire throughout the offset site, repairing the perimeter fence to exclude livestock.

An agreement was made with neighbouring landholders to replace the top barbed wire strand of the perimeter fencing with a single plain wire, negating the need for installation of metal tags (refer to **Photo set 2** for before photos of perimeter fence with top strand of barbed wire and **Photo set 3** for after photos of perimeter fence with a top strand of plain wire).

4.3.2 Pest Animal and Weed Management Strategies

During Year 1 of the project, New Ground completed routine maintenance and feral dog/deer control across the offset site. New Ground also began extensive internal track maintenance in preparation for vertebrate pest management and weed management.

Baseline surveys of dominant weeds throughout the offset site identified *Lantana camara* (Lantana) and *Ligustrum lucidum* (Broad-leaved Privet) as the dominant weed species. New Ground are currently completing detailed planning for a broadscale weed control event located at The Meads offset site.



Photo set 2: Before photos - Perimeter fence with top strand of barbed wire



Photo set 3: After photos – Perimeter fence with top strand of plain wire

Table 11: Offset site management actions summary – Year 1 to Year 8.

Current threat / quality improvement restoration	Base case	Improvement proposed	Achievement criteria	Measured by	Timeframes	Reporting
<p>1. Restore vegetation communities to the ‘BioCondition Benchmarks to be achieved’ for each Regional Ecosystem, as specified.</p>	<p>Baseline BioCondition surveys have been completed at 9 transects across the offset site.</p> <p>Table 6 compares the baseline conditions to the Benchmarks to be achieved for each Regional Ecosystem.</p>	<p>Reduction and management of WONS through the Offset Area to stop the suppression by weed species for the succession native species.</p>	<p>Vegetation communities meet the BioCondition Benchmarks to be achieved for each Regional Ecosystem by Year 8.</p>	<p>BioCondition surveys recording Tree Canopy Height, Tree Canopy cover, Tree Sub-canopy height and Tree Sub-canopy cover.</p>	<p>BioCondition Benchmarks to be met by Year 8 and maintained for the remainder of the period of effect of the approval.</p>	<p>BioCondition surveys to be completed to alignment with Annual Compliance Report.</p> <p>Approval holder must engage a suitably qualified independent expert to assess The Meads offset site at the end of Year 4 to assess if the conditions have been or are likely to be achieved.</p>
<p>2. Ensure that at least 6 different GHFF foraging species (which in combination must provide annual winter and spring foraging resources) occur within each quarter of The Meads offset site.</p>	<p>Baseline BioCondition surveys have been completed at 9 transects and 21 observation sites across the offset site.</p> <p>This data was used to compile species richness for the Regional Ecosystems which were then assessed for GHFF foraging.</p>	<p>Reduction of WONS throughout the offset site will allow for native species to regenerate without suppression from exotic species.</p>	<p>At least 6 different GHFF foraging species, providing both annual winter and spring resources must occur within each quarter of the offset site.</p>	<p>BioCondition surveys for Regional Ecosystems present.</p> <p>Observation points.</p>	<p>To be achieved by Year 8.</p>	<p>Offset site surveys are to be complete to align with the Annual Compliance Report.</p> <p>Approval holder must engage a suitably qualified independent expert to assess The Meads offset site at the end of Year 4 to assess if the conditions have been or are likely to be achieved.</p>

Current threat / quality improvement restoration	Base case	Improvement proposed	Achievement criteria	Measured by	Timeframes	Reporting
<p>3. Ensure that the extent of weed cover across the offset site is less than 5%</p>	<p>Baseline surveys were used to ground-truth previous weed mapping completed by New Ground in 2019.</p> <p>Table 8 demonstrates the density of the weeds and areas impacted.</p> <p>Currently, <i>Lantana camara</i> and <i>Ligustrum lucidum</i> are present across the offset site, ranging from a scattered density to impenetrable thickets.</p>	<p>In Year 1, New Ground completed the baseline surveys, as well as routine maintenance and began extensive internal track maintenance to prepare for the commencement of a broadscale weed control event.</p> <p>New Ground began detailed planning for the broadscale weed control event in Year 1.</p>	<p>By Year 8, weed coverage across the offset site is to be less than 5%.</p>	<p>Weed mapping during offset site surveys.</p>	<p>Weed management is to reduce weed coverage by Year 8.</p>	<p>Offset site surveys to be completed to align with the Annual Compliance Report.</p> <p>After the commencement of weed management, weed mapping should continue to monitor progress.</p> <p>Approval holder must engage a suitably qualified independent expert to assess The Meads offset site at the end of Year 4 to assess if the conditions have been or are likely to be achieved.</p>
<p>4. A reduction in the numbers of non-native predators and non-native herbivores by 90% relative to the numbers identified</p>	<p>Camera trapping completed during baseline surveys provided data to determine the abundance index of 5 vertebrate pest species across the offset site (refer to Table 9).</p>	<p>Perimeter fences repaired to prevent livestock from entering the offset site from neighbouring properties.</p>	<p>Reduction in both non-native predators and herbivores by 90% relative to baseline numbers.</p>	<p>Camera trapping and potentially thermal imagery surveys as required.</p>	<p>Reduction by 90% to be achieved by Year 8.</p>	<p>Camera trapping and potential for thermal imagery surveys as required and results reported in the relevant ACR.</p>

Current threat / quality improvement restoration	Base case	Improvement proposed	Achievement criteria	Measured by	Timeframes	Reporting
during baseline surveys.		Deer and dog control has begun in Year 1.				
		Monitor pest species to ensure no increase of presence/density.				
5. A reduction in the rate of Koala mortalities attributable to non-native predators by 90% relative to numbers identified during baseline surveys.	SAT surveys were completed during baseline surveys to identify the Koala usage across the offset site. Results are presented in Table 10 . In addition, a Koala was detected on a camera trap during baseline surveys.	Ensure that Vertebrate Pest Management reduced non-native predators across the offset site.	Koala mortalities as a result of non-native predators decrease by 90% relative to the number identified during baseline surveys.	SAT surveys to determine Koala usage on-site. Camera trapping and potential for thermal imagery surveys as required.	Reduction by 90% to be achieved by Year 8.	SAT surveys and camera trapping as required and results reported in the relevant ACR. While non-native predators were recorded on the offset site, no evidence of Koala Mortality attributable to non-native predators was observed.

5. Appendices

Appendix A

EPBC Act approval and conditions granted 30 November 2020

Appendix B

Fauna spotter catcher post-works report

Appendix C

Certified PMAV document package

Appendix D

New Ground Baseline Ecological Report 2021

Appendix E

Woogaroo Heights Environmental Pre-start Checklist

Appendix A

EPBC Act approval and conditions
granted 30 November 2020



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

<i>Name and position</i>	Kim Farrant Assistant Secretary, Environment Approvals Queensland and Sea Dumping Branch Department of Agriculture, Water and the Environment
<i>Signature</i>	
<i>Date of decision</i>	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 '.xix' 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.

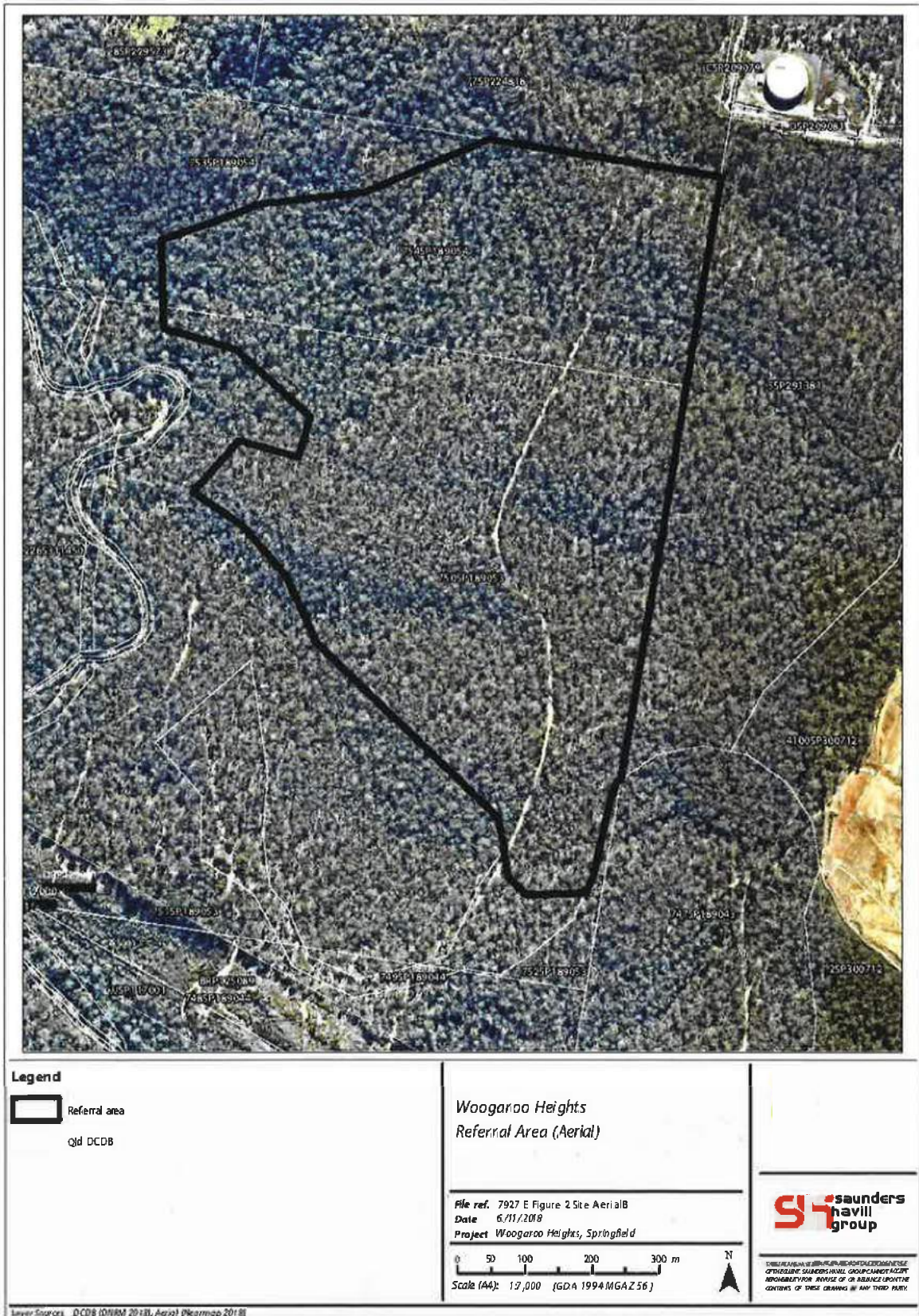
Year 4 means the period within 4 years from the date this of approval.

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

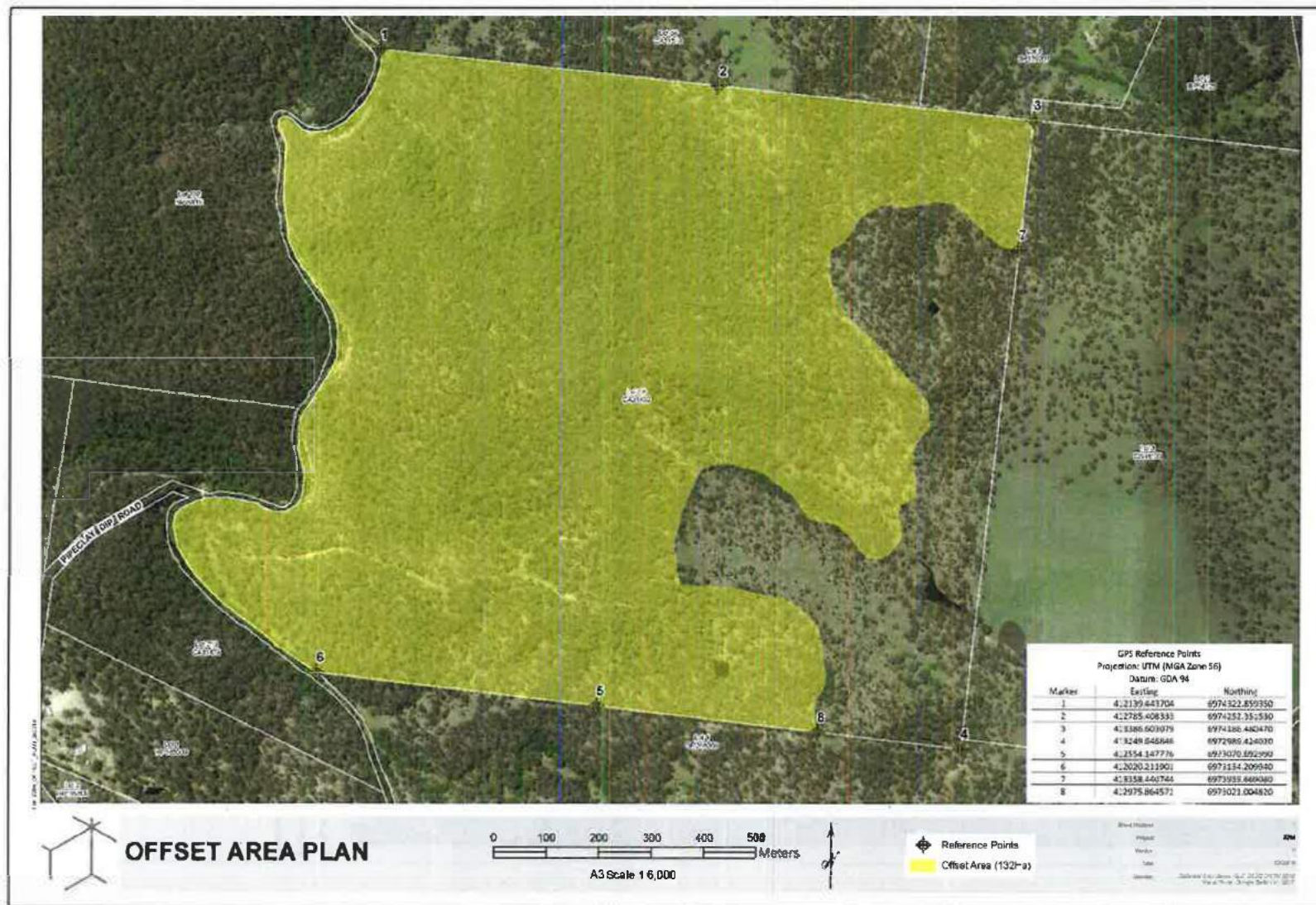
BioCondition Benchmarks for Regional Ecosystems at the Meads offset site

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

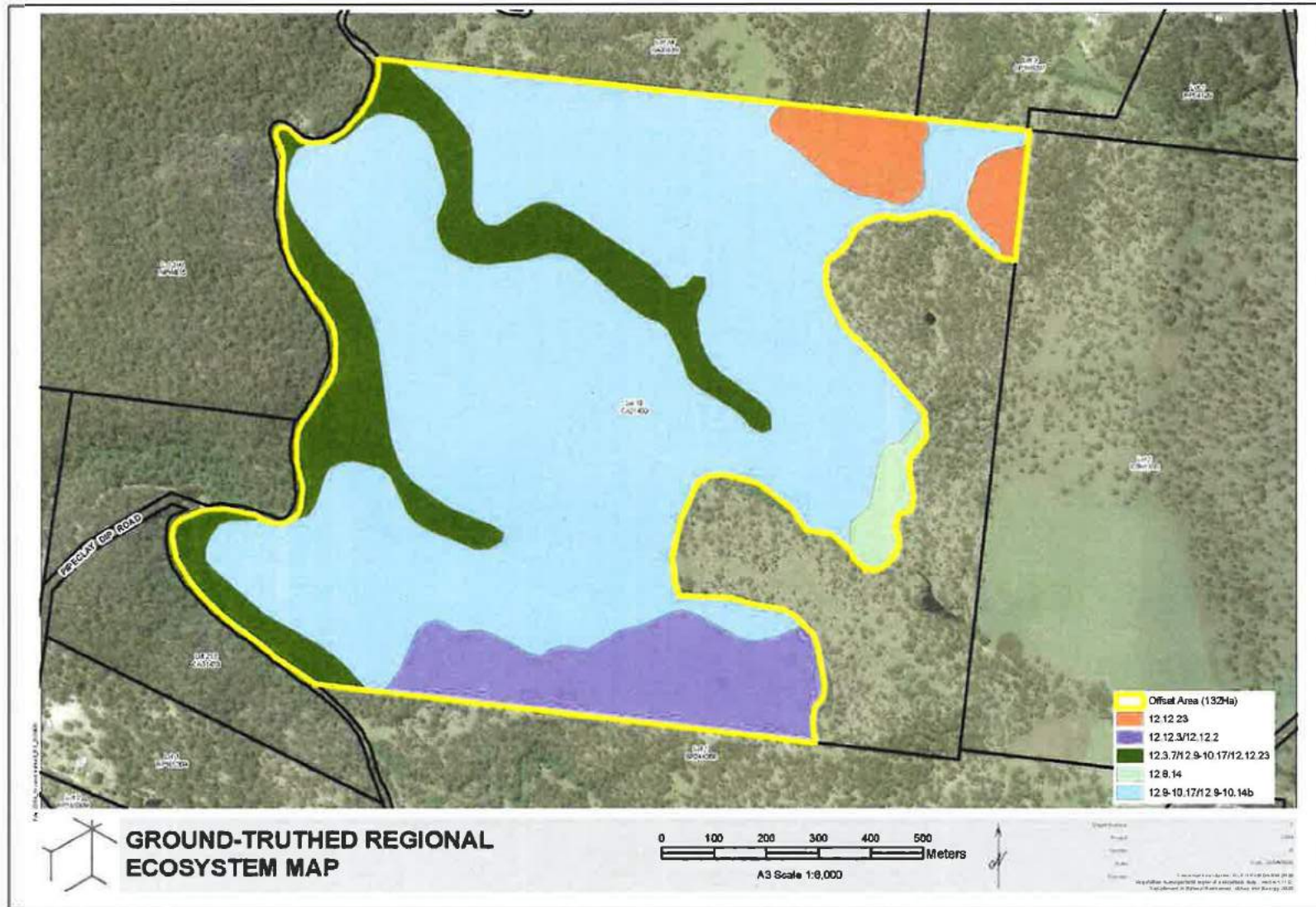
Map – Development area – aerial



Map – The Meads offset site – aerial



Map – The Meads offset site – Regional Ecosystems



Appendix B

Fauna spotter catcher post-works report

Sep – Nov
2021

Fauna Management and Spotter/Catcher Services Report

Springfield Rise V17-V18, Spring Mountain
Report prepared for Shadforth Civil Pty Ltd



Report prepared by
QLD Fauna Consultancy Pty Ltd
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Date:	04/11/2021
Title:	Fauna Management and Spotter/Catcher Services Report Springfield Rise – Village 17 & Village 18, Spring Mountain
Author/s:	Bryan Robinson, Melissa Osborne
Reviewed by:	Jasmine Zeleny
Field personnel:	Rebecca Turk, John Bolton, Lee Evans, Rodney Whitaker, Rebecca Ferris, Christian McDonald, Rebecca Bennett
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1 Introduction

Qld Fauna Consultancy Pty Ltd has been engaged by Shadforth Civil Pty Ltd to conduct Fauna Spotter/Catcher and Fauna Management activities for works at Springfield Rise – Village 17 & Village 18, Spring Mountain.

All activities were conducted under the provisions of Rehabilitation Permit (WA0026789) issued to Queensland Fauna Consultancy Pty Ltd by the Department of Environment and Science (DES), approving the observation and relocation of protected animals.

This report covers clearance activities undertaken in September, October, and November 2021.

2 Methodology

2.1 Clearance Investigations

A standard set of observational and active searching techniques were employed each day of clearance to ascertain and identify existing fauna values for each location. These include:

- Assessment of terrestrial microhabitats such as ground hollows, rock, burrows, leaf litter, fallen branches and bark exfoliations,
- Observation and assessment of occupancy of arboreal microhabitats such as tree hollows, fissures and exfoliations,
- Direct observation of active or exposed fauna,
- Identification of scats, tracks and scratchings to determine fauna present on the site.

All microhabitats were identified and subsequently inspected during clearance.

2.2 Specific methodology for Koalas *Phascolarctos cinereus*

Due to the specific requirements relating to the Koala the following techniques were employed at the clearance site to ascertain presence/absence status:

- Use of binoculars to inspect the crown, forks and trunk of trees;
- ‘Drip zone’ searches at the base of known food trees for the presence of scats to a radius equal to that of the crown of individual trees;
- Inspection of trunks for scratchings indicative of use by Koalas.

Recent changes to Koala management strategies highlighted in the *Nature Conservation (Koala) Conservation Plan 2017* have resulted in particular conditions placed on vegetation clearance involving the removal of Koala food trees.

Further provisions include the restriction of all clearance that may directly interfere with the tree a Koala is residing in. Koalas are to leave via their own volition and may not be interfered with by any means. Only when Koalas have vacated a tree can clearance operations include the host tree and surrounding vegetation.

2.3 Felling Procedures

Trees identified as having potential fauna values (such as hollows, fissures and exfoliating bark) were clearly marked for supervision during felling and inspected once felled. Efforts were made to determine potentially occupant species by way of investigations for indicative signs (scats, scratchings and tracks). Where no signs were found or occupant species undeterminable, machinery operators were instructed to fell trees in a manner directed at minimising the potential risk of injury to fauna.

Limbs were inspected and the direction of felling determined with regards to safety of both machinery and operators. Considerations to potentially occupant fauna were assessed and felling procedures formulated. Felling procedures may have included the following techniques:

- Machinery blades were utilised to shake the tree in an attempt to disturb fauna out of hollows or fissures to determine species present.
- If fauna were present, the tree was either left standing overnight to allow the occupant animal(s) time to leave via their own volition, or if species detected were able to be encouraged from the tree by shaking or direct capture by a wildlife spotter(s). The tree was felled with considerations to potentially undetected fauna.
- Where possible potentially occupied trees were felled with the identified microhabitat receiving minimal contact on impact.
- Adjacent felled trees were utilised to absorb the impact of potential fauna bearing trees.

10 significant habitat trees were felled, and the hollows salvaged under the supervision of a QFC fauna spotter catcher. QFC were consulted during the hollow relocation process and approved the new locations for the salvaged habitat features. Photos of the relocated hollows can be found in Appendix A and a map of the new hollow relocation points can be found in Appendix B.

2.4 Communications during Clearance

Each spotter/catcher was equipped with a hand-held radio to make positive communications with machinery operators. Communications by radio and positive hand signals were utilised to indicate intentions to machinery operators.

3 Results

The following daily inventory details fauna-based investigation results for the clearing area. Inspection activities, location, habitat values and fauna found are documented where required. Refer to Appendix C for fauna photos.

Wednesday 1st September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- Refer to **Fauna Register** for fauna found
- 3 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 3

Nest (N) Y N Hollows (H) Y N Arboreal termitaria (ATM) Y N Other: Exfoliating bark

No. & size of hollow/s (mm): 0

Terrestrial Microhabitats:

Hollow logs Y N Woody debris Y N Rock piles Y N Burrows Y N

Other: Dense leaf litter, Bark exfoliations, Nest at end of burrow tunnel

Aquatic habitat/s: Dam Y N Creek (dry) Y N Wetland Y N

Thursday 2nd September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 5 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 5 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Arboreal termitaria (ATM) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 50-99: 1
Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Burrows <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Dense leaf litter, Bark exfoliations
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek (dry) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Thursday 3rd September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 7 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 7 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Arboreal termitaria (ATM) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Exfoliating bark, Fissure No. & size of hollow/s (mm): 50-99: 2, 100-149: 3
Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Burrows <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Dense leaf litter, Bark exfoliations, Bird nest at end of burrow, Terrestrial termitaria
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Monday 6th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- Refer to **Fauna Register** for fauna found
- 4 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 4 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Arboreal termitaria (ATM) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 50-99: 1
Terrestrial Microhabitats: Hollow logs <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Burrows <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Dense leaf litter, Bark exfoliations, Nest at end of burrow tunnel
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N

Tuesday 7th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 2 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 2 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Arboreal termitaria (ATM) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N No. & size of hollow/s (mm): 0
Terrestrial Microhabitats: Hollow logs <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Dense leaf litter
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Wednesday 8th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 2 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 2 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Arboreal termitaria (ATM) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 0
Terrestrial Microhabitats: Hollow logs <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Burrows <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Dense leaf litter, Terrestrial termitaria, Bark exfoliations, Inactive bird nest at end of burrow tunnel
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek (dry) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Thursday 9th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 6 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 6 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Arboreal termitaria (ATM) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 0-49: 1
Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Dense leaf litter, Bark exfoliations
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek (dry) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Friday 10th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 2 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 2 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Arboreal termitaria (ATM) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 0
Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Dense leaf litter, Terrestrial termitaria
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Saturday 11th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 2 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 0 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Arboreal termitaria (ATM) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 0
Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Woody debris <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Rock piles <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Dense leaf litter, Terrestrial termitaria, Bark exfoliations
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Monday 13th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- Refer to **Fauna Register** for fauna found
- 2 trees flagged
- One personnel in attendance

<p>Arboreal Microhabitats: No. flagged tree/s felled: 2 Nest (N) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Hollows (H) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Arboreal termitaria (ATM) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Other: Exfoliating bark, Possum drey No. & size of hollow/s (mm): 0</p>
<p>Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Woody debris <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Rock piles <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Burrows <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Other: Dense leaf litter, Bark exfoliations, Terrestrial termitaria</p>
<p>Aquatic habitat/s: Dam <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Creek (dry) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Wetland <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>

Tuesday 14th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- Refer to **Fauna Register** for fauna found
- 2 trees flagged
- One personnel in attendance

<p>Arboreal Microhabitats: No. flagged tree/s felled: 2 Nest (N) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Hollows (H) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Arboreal termitaria (ATM) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Other: Exfoliating bark No. & size of hollow/s (mm): 0</p>
<p>Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Woody debris <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Rock piles <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Burrows <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Other: Dense leaf litter, Bark exfoliations, Terrestrial termitaria</p>
<p>Aquatic habitat/s: Dam <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Creek <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Wetland <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>

Wednesday 15th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- Refer to **Fauna Register** for fauna found
- 1 trees flagged
- One personnel in attendance

<p>Arboreal Microhabitats: No. flagged tree/s felled: 1 Nest (N) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Hollows (H) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Arboreal termitaria (ATM) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Other: Exfoliating bark No. & size of hollow/s (mm): 0</p>
<p>Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Woody debris <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Rock piles <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Burrows <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Other: Dense leaf litter, Bark exfoliations, Pardalote nest</p>
<p>Aquatic habitat/s: Dam <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Creek <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Wetland <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>

Thursday 16th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 4 trees flagged
- One personnel in attendance

<p>Arboreal Microhabitats: No. flagged tree/s felled: 4 Nest (N) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Hollows (H) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Arboreal termitaria (ATM) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Other: Exfoliating bark No. & size of hollow/s (mm): 50-99: 1, 150-199: 1, 250-299: 1, 300+: 1</p>
<p>Terrestrial Microhabitats: Hollow logs <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Woody debris <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Rock piles <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Burrows <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Other: Dense leaf litter, Terrestrial termitaria, Bark exfoliations</p>
<p>Aquatic habitat/s: Dam <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Creek (dry) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Wetland <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>
No Fauna Found

Friday 17th September 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- Refer to **Fauna Register** for fauna found
- 5 trees flagged
- One personnel in attendance

<p>Arboreal Microhabitats: No. flagged tree/s felled: 5 Nest (N) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Hollows (H) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Arboreal termitaria (ATM) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Other: Exfoliating bark, Feral bee hive No. & size of hollow/s (mm): 0</p>
<p>Terrestrial Microhabitats: Hollow logs <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Woody debris <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Rock piles <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Burrows <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Other: Dense leaf litter, Bark exfoliations</p>
<p>Aquatic habitat/s: Dam <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Creek <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Wetland <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>

Monday 18th October 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 1 trees flagged
- One personnel in attendance

<p>Arboreal Microhabitats: No. flagged tree/s felled: 1 Nest (N) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Hollows (H) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Arboreal termitaria (ATM) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N No. & size of hollow/s (mm): 0-49: 5, 50-99: 7, 100-149: 4, 150-199:4, 200-249: 3, 250-299: 2, 300+: 1</p>
<p>Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Woody debris <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Rock piles <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Burrows <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>
<p>Aquatic habitat/s: Dam <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Creek <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Wetland <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>
<p>No Fauna Found</p>

Wednesday 20th October 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- Refer to **Fauna Register** for fauna found
- 0 trees flagged
- One personnel in attendance

<p>Arboreal Microhabitats: No. flagged tree/s felled: 4 Nest (N) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Hollows (H) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Arboreal termitaria (ATM) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Other: Exfoliating bark No. & size of hollow/s (mm): 0-49: 2, 50-99: 1</p>
<p>Terrestrial Microhabitats: Hollow logs <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Woody debris <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Rock piles <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Burrows <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Other: Dense leaf litter</p>
<p>Aquatic habitat/s: Dam <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Creek (dry) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Wetland <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>

Thursday 21st October 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 4 trees flagged
- One personnel in attendance

<p>Arboreal Microhabitats: No. flagged tree/s felled: 4 Nest (N) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Hollows (H) <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Arboreal termitaria (ATM) <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Other: Exfoliating bark No. & size of hollow/s (mm): 100-149: 1, 250-299: 1</p>
<p>Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Woody debris <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Rock piles <input checked="" type="checkbox"/>Y <input type="checkbox"/>N Burrows <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Other: Bark exfoliations, Terrestrial termitaria</p>
<p>Aquatic habitat/s: Dam <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Creek <input type="checkbox"/>Y <input checked="" type="checkbox"/>N Wetland <input type="checkbox"/>Y <input checked="" type="checkbox"/>N</p>
No Fauna Found

Monday 25th October 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 4 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 4 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Arboreal termitaria (ATM) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 100-149: 3, 150-199: 2, 200-249: 2
Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Bark exfoliations, Terrestrial termitaria
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Tuesday 26th October 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 0 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 0 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Arboreal termitaria (ATM) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N No. & size of hollow/s (mm): 0
Terrestrial Microhabitats: Hollow logs <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Woody debris <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Rock piles <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Wednesday 27th October 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 8 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 8 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Arboreal termitaria (ATM) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 0-49: 5, 50-99: 16, 100-149: 1, 200-249: 3, 300+: 2
Terrestrial Microhabitats: Hollow logs <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Gully
No Fauna Found

Friday 29th October 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 9 trees flagged
- Two personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 9 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Arboreal termitaria (ATM) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Other: Exfoliating bark No. & size of hollow/s (mm): 0
Terrestrial Microhabitats: Hollow logs <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Dense leaf litter, Timber stockpiles, Bark exfoliations, Terrestrial termitaria
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

Tuesday 2nd November 2021

- Pre-clearance activities carried out (refer to Methodology) at Springfield Rise V17-V18, Spring Mountain
- Vegetation clearance carried out at Springfield Rise V17-V18, Spring Mountain
- 0 trees flagged
- One personnel in attendance

Arboreal Microhabitats: No. flagged tree/s felled: 0 Nest (N) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Hollows (H) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Arboreal termitaria (ATM) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N No. & size of hollow/s (mm): 0
Terrestrial Microhabitats: Hollow logs <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Woody debris <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Rock piles <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Burrows <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Other: Dense leaf litter
Aquatic habitat/s: Dam <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Creek <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Wetland <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
No Fauna Found

4 Fauna Register

Collectors Name	Date	Time	Capture Location		Count Type	Status	Common Name - Scientific Name	Count	Release Details			Actions				Release Location Description	Comments		
			Latitude	Longitude					Date	Latitude	Longitude	R1	R2	D	I				
Rebecca Turk	01/09/2021	13:57	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6837	152.8869	Alive	Least Concern	Graceful Tree Frog <i>Litoria gracilentia</i>	1	01/09/2021	-27.6855	152.8882	X					In vegetation next to creek line outside the boundary of the site	
Rebecca Turk	06/09/2021	07:15	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6815	152.8841	Alive	Vulnerable	Koala <i>Phascolarctos cinereus</i>	1	NA	NA	NA	X					Left in tree to self-relocate	Tree was double flagged, 50m exclusion zone established, operator notified and koala monitored for signs for disturbance.
Rebecca Turk	06/09/2021	14:45	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6828	152.8857	Alive	Least Concern	Spotted Pardalote <i>Pardalotus punctatus</i>	4	NA	NA	NA	X	C				3 x chicks self-relocated into adjacent habitat	3 x chicks flew into adjacent vegetation, 1 x chick was not able to fly so was taken to RSPCA Wildlife Hospital 3426 9999

Rebecca Turk	13/09/2021	14:25	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6845	152.8848	Alive	Least Concern	Common Ringtail Possum <i>Pseudocheirus peregrinus</i>	1	13/09/2021	-27.6843	152.8785	X				Base of Ironbark in bushland outside of site	1 x young adult. Disturbed out of drey. Captured and relocated once tree was felled.
Rebecca Turk	14/09/2021	13:48	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6829	152.8864	Alive	Least Concern	Eastern Bearded Dragon <i>Pogona barbata</i>	1	14/09/2021	-27.6805	152.8849	X				Fallen log in adjacent open Eucalypt forest	
Rebecca Turk	15/09/2021	06:47	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6829	152.8864	Alive	Least Concern	Australian Boobook <i>Ninox boobook</i>	2	NA	NA	NA	X				Self-relocated into adjacent vegetation	
Rebecca Turk	15/09/2021	11:35	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6832	152.8845	Alive	Least Concern	Lace Monitor <i>Varanus varius</i>	1	NA	NA	NA	X				Self-relocated up adjacent trees that weren't being felled	
Rebecca Turk	15/09/2021	15:09	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6841	152.8837	Alive	Least Concern	Striated Pardalote <i>Pardalotus striatus</i>	3	NA	NA	NA			C		NA	3 x chicks taken to wildlife carer. RSPCA Wildlife Hospital 3426 9999
Rebecca Turk	17/09/2021	08:16	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6832	152.8845	Alive	Least Concern	Lace Monitor <i>Varanus varius</i>	1	17/09/2021	-27.6832	152.8845	X				Self-relocated under rock	Tried to capture but vanished under rock. Tree in front of rock was flagged.

Rebecca Turk	17/09/2021	14:10	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6847	152.8852	Alive	Least Concern	Brush-tailed Phascogale <i>Phascogale tapoatafa</i>	1	17/09/2021	-27.6866	152.8805	X				Released at base of Ironbark, ran up skinny gum instead
Rebecca Ferris	20/10/2021	17:01	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6821	152.8885	Alive	Least Concern	Eastern Bearded Dragon <i>Pogona barbata</i>	1	20/10/2021	-27.6828	152.8888	X				Onto ground timber
John Bolton	02/11/2021	13:11	Village 17 & 18 at Springfield Rise, Spring Mountain	-27.6863	152.8825	Alive	Least Concern	Yellow-spotted Monitor <i>Varanus panoptes</i>	1	02/11/2021	-27.6884	152.8884	X				Adjacent bushland outside clearing zone

5 Conclusion

All vegetation clearance was supervised as requested by Shadforth Civil Pty Ltd and in accordance with stipulations as expressed in the *Nature Conservation (Koala) Conservation Plan 2017*.

One koala was observed during a morning pre-clearance inspection of the site. The tree was double flagged and a 50m exclusion zone was established so the koala could self-relocate via its own volition before clearing activities resumed in that area. The koala was checked regularly throughout the day to monitor any signs of disturbance or changes in position.

Other fauna found during clearance works were relocated (or self-relocated) to adjacent localities comprising suitable refugia and feeding resources consistent with individual species requirements. Young were taken to a certified wildlife carer or veterinary clinic.

All supervised clearance activities were conducted with the full co-operation of onsite personnel and machinery operator/s.

6 References

Department of Environment and Heritage Protection (2017) *Nature Conservation (Koala) Conservation Plan 2017*. Queensland Government.

References for nomenclature

Anstis, M. (2013) *Tadpoles and Frogs of Australia*, Sydney: New Holland Publishers.

Menkhorst, K. & Knight, F. (2011) *A Field Guide to the Mammals of Australia*. 3rd edn. Oxford University Press, South Melbourne.

Simpson, K. & Day, N. (2004) *Field Guide to the Birds of Australia*. Penguin Group, Australia

Strahan, R. And Van Dyck, S. (2008) *The Mammals of Australia*, 3rd edn Sydney: New Holland Publishers.

Vanderduys, E. (2012) *Field Guide to the Frogs of Queensland*. Collingwood: CSIRO Publishing.

Wilson, S. (2015) *A Field Guide to Reptiles of Queensland*. 2nd edn, Sydney: New Holland Publishers.

7 Appendix A: Salvaged Hollows





9 Appendix C: Fauna Photos



Graceful Tree Frog
Litoria gracilentia



Spotted Pardalote
Pardalotus punctatus



Koala
Phascolarctos cinereus



Eastern Bearded Dragon
Pogona barbata



Australian Boobook
Ninox boobook



Striated Pardalote chicks
Pardalotus striatus



Brush-tailed Phascogale
Phascogale tapoatafa



Eastern Bearded Dragon
Pogona barbata



Yellow-spotted Monitor
Varanus panoptes

Appendix C

Certified PMAV document package



Department of **Resources**

Author : Genevieve Verrall
File / Ref number : 2020/014171
Unit : Natural Resource Assessment

12 March 2021

New Ground Conservation Pty Ltd
Mr Nelson Wills
PO Box 588
Mudgeeraba QLD 4213
Via email: nwills@newground.com.au

Dear Mr Wills

Re: Declaration made on part of 18 CA31460 - Toowoomba Regional Council

This is to advise you that a declaration on has been made, consistent with your request on the above lot by the Department of Resources on 12 March 2021. A copy of each of the following certified documents is attached for your records:

- Notice of Declaration (2020/014171)
- Declared area plan
- Declared area PMAV
- Offset Area Management Plan, New Ground Conservation Pty Ltd, 17 December 2020

Please note, that in accordance with the declaration, management of the declared area, monitoring the condition of the declared area, and reporting on the condition of the declared area will be required. Please refer to the declaration documents for the specifics regarding such requirements.

If a registered owner requires additional copies of the certified documents, these can be purchased at Department of Resources Customer Service Centre.

This declaration will be noted on the title of the declared area—binding management, monitoring and reporting responsibilities upon current and future owners.

If you wish to discuss this matter further, please contact Dave Hinz on telephone number 4531 8513 quoting the above reference number.

Resources Gympie
27 O'Connell Street
Locked Mail Bag 383
Gympie 4570 Qld
Website www.dnrme.qld.gov.au
ABN 59 020 847 551

Yours sincerely

A handwritten signature in black ink, appearing to read 'Sandy Witheyman', with a long horizontal flourish extending to the right.

Sandy Witheyman
Senior Natural Resource Management Officer
Department of Natural Resources

Notice of Declaration (2020/014171)

s19E – 19K of the *Vegetation Management Act 1999*



Department of **Resources**

1. Details of request

- 1.1. **Proponent's name:** New Ground Conservation Pty Ltd ACN 605 325 282
- 1.2. **Date request received:** 21 December 2020
- 1.3. **Request:** declare stated land as an area of high nature conservation value
- 1.4. **Property description:** 18 CA31460 - Toowoomba Regional Council
- 1.5. **Land tenure:** Freehold
- 1.6. **Decision reference:** 2020/014171

2. Declaration information

2.1. Declaration made:

The Chief Executive of the Department of Resources declares the area identified on Declared Area Map DAM 2020/014171 as an area of high nature conservation value in accordance with s19F(1) of the *Vegetation Management Act 1999*.

The chief executive considers the declared area to meet the following criteria under s19G of the *Vegetation Management Act 1999*—

The declared area is an area of high nature conservation value under s19G(1)(b), as the area is: an area containing a vegetation clump or corridor that contributes to the maintenance of biodiversity; and/or an area that makes a significant contribution to the conservation of biodiversity.

The documents outlined in 2.2 form part of this declaration.

2.2. Declaration documents:

The following documents are part of this declaration, and must be read in conjunction with this notice:

- Declared area map DAM 2020/014171
- Offset Area Management Plan, New Ground Conservation Pty Ltd, 17 December 2020

2.3. Property Map of Assessable Vegetation (PMAV)

In accordance with s20B of the *Vegetation Management Act 1999*, Property Map of Assessable Vegetation PMAV 2020/014172 has been prepared for the declared area. Please refer to the enclosed information notice for further information regarding this PMAV.

3. Delegated officer's signature

Sandra Witheyman
Senior Natural Resource Management Officer
12 March 2021

PREPARED FOR:

NEW GROUND CONSERVATION PTY LTD

17 DECEMBER 2020

Queensland Department of Resources
Vegetation Management Act 1999 (VMA)

Parts of this document meet the requirements of a declared
area management plan under section 19E of the VMA

Case reference: 2020/014171

Date: 11 March 2021



Department of Resources

OFFSET AREA MANAGEMENT PLAN

LOT 18 CA31460, LOT 18 PIPECLAY DIP ROAD, PERSEVERANCE QLD



NEWGROUND

NEW GROUND | GOLD COAST B4B, 50-54 Railway Street, Mudgeeraba | BRISBANE 84a Brunswick Street, Fortitude Valley |
MAIL PO Box 588, Mudgeeraba QLD 4213

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




REPORT TITLE	OFFSET AREA MANAGEMENT PLAN
PROJECT	LOT 18 CA31460, LOT 18 PIPECLAY DIP ROAD, PERSEVERANCE QLD
CLIENT	NEW GROUND CONSERVATION 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	17 DECEMBER 2020



DOCUMENT DISTRIBUTION: 2284-R-01-OFFSET AREA MANAGEMENT PLAN

V.	COPIES	FORMAT	ISSUED TO	DATE
0	1	PDF	New Ground Conservation Pty Ltd	8/07/2020
1	1	PDF	New Ground Conservation Pty Ltd	21/07/2020
2	1	PDF	New Ground Conservation Pty Ltd	21/07/2020
3	1	PDF	New Ground Conservation Pty Ltd	17/12/2020



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APPENDIX A

Offset Area Plan (with Offset Area boundary co-ordinates)

APPENDIX B

Offset Management Units Plan

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Chapter 1: Introduction

1.1 Overview

The purpose of this management plan is to identify the management objectives, actions and outcomes necessary to fulfil a statutory requirement, pursuant to the Environment Protection and Biodiversity Conservation Act 1999 (C'th) (EPBC Act), for the provision of a koala (*Phascolarctus cinereus*) and grey-headed flying-fox (*Pteropus poliocephalus*) habitat offset. The subject offset is to contribute to the mitigation of impacts associated with the loss of habitat for the EPBC Act-listed combined populations of koala and grey-headed flying-fox in South East Queensland. This Offset Area Management Plan report is concerned with ongoing management of the portion of the subject site (Lot 18 CA31640) presented by **APPENDIX A** as the 'Offset Area'.

The structure of this management plan has been informed by the Policy Statement: Advanced environmental offsets under the Environment Protection and Biodiversity Conservation Act 1999, in addition to the EPBC Act referral guidelines for the vulnerable koala combined populations of Queensland, New South Wales and the Australian Capital Territory (DoE, 2014), Draft Recovery Plan for the Grey-headed Flying-fox *Pteropus poliocephalus* (DoE, 2017) ('Draft Recovery Plan') and the EPBC Act Environmental Offsets Policy (DoE, 2012).

1.2 Objectives of the Report

The primary objective of this Offset Area Management Plan report is to provide a land management guidance tool which directs adaptive management actions such that a demonstrable increase in koala and grey-headed flying-fox habitat quality is achieved throughout the offset site.

1.3 Outline of the Report

This report includes the following components:

- **Chapter 1:** Provides an introduction to the report, including a description of the offset site (Departmental reference details) and the technical context around the offset proposition;
- **Chapter 2:** Presents management objectives, actions, performance indicators and reporting requirements for each management measure required to achieve an improvement of koala and grey-headed flying-fox habitat quality within the offset area over time; and
- **Chapter 3:** Report conclusions.

1.4 Offset Proposition Summary

The offset proposition summary details presented by **TABLE 1.1** and **TABLE 1.2** have been arranged in general accordance with the proforma set out in the Queensland Department of Natural Resources and Mines (2012) Offset Area Management Plan template.



TABLE 1.1: DEPARTMENTAL REFERENCE DETAILS

DETAILS FOR APPLICATION THAT TRIGGERS OFFSET	
Departmental Reference Number and Case Name:	
Offset reference number (if applicable):	
Tenure: Freehold	Local Government Area: Toowoomba Regional Council
OFFSET TRIGGERS AND VALUES	
Offset Trigger	Values requiring to be offset
<input type="checkbox"/> Regional Vegetation Management Code <ul style="list-style-type: none"><input type="checkbox"/> Part P<input type="checkbox"/> Part S<input type="checkbox"/> Part Xa<input type="checkbox"/> Part Xb	<input type="checkbox"/> Assessable vegetation adjacent to a wetland, significant wetland
<input type="checkbox"/> Material Change of Use / Reconfiguration of a lot Policies (Table F1)	<input type="checkbox"/> Assessable vegetation adjacent to a watercourse
<input checked="" type="checkbox"/> EPBC Act	<input type="checkbox"/> Connectivity
	<input type="checkbox"/> Endangered regional ecosystem
	<input type="checkbox"/> Of concern regional ecosystem
	<input type="checkbox"/> Threshold regional ecosystem
	<input type="checkbox"/> Critically limited regional ecosystem
	<input type="checkbox"/> Essential habitat
	<input checked="" type="checkbox"/> Habitat for koalas in SEQ
	<input type="checkbox"/> Values within a highly vegetated bioregion
	<input type="checkbox"/> Threatened Ecological Community



TABLE 1.2: OFFSET AREA DETAILS

LANDHOLDER DETAILS	
Register Owner/s on Title: New Ground Conservation Pty Ltd	
Lessee:	
Business/Company name: New Ground Conservation Pty Ltd	
ABN/ACN: 84 605 325 282	
Phone number: 07 5530 7283	Mobile number: 0400 841 526
Facsimile number:	Contact person (if required): Nelson Wills
Email: nwills@newground.com.au	
Postal address: PO Box 588, Mudgeeraba Qld 4213	
PROPERTY DETAILS	
Property name: Meads	
Real property description (lot on Plan/s): Lot 18 on CA31460	
Tenure: Freehold	Local Government Area: Toowoomba Local Government Area
Planning Scheme Zone: Rural	Property area (ha): The total area of Lot 18 CA31460 is 161.874 ha. The Offset Area accounts for 132 ha of this total (APPENDIX A).
Landzone	<p>Based on the Department of Science, Information Technology, Innovation and the Arts (DSITIA) Pre-clearing Broad Vegetation Grounds of Queensland (DSITI, 2016), the site is shown to consist of land zones 3, 8, 9-10 and 12. The offset area occurs within areas designated as land zones 3, 8, 9-10 and 12 (New Ground, 2015).</p> <p>Land zone 3 is described as recent Quaternary alluvial systems, including closed depressions, paleo-estuarine deposits currently under freshwater influence, inland lakes and associated wave built lunettes. Excludes colluvial deposits such as talus slopes and pediments (EHP, 2014).</p> <p>Land zone 8 is described as Cainozoic igneous rocks, predominantly flood basalts forming extensive plains and occasional low scarps. Also includes hills, cones and plugs on trachytes and rhyolites, and associated interbedded sediments, and talus (EHP, 2014).</p> <p>Land zone 9 is described as fine grained sedimentary rocks, generally with little or no deformation and usually forming undulating landscapes. Siltstones, mudstones, shales, calcareous sediments, and labile sandstones are typical rock types although minor interbedded volcanics may occur (EHP, 2014).</p> <p>Land zone 10 is described as medium to coarse grained sedimentary rocks, with little or no deformation, forming plateaus, benches and scarps. Includes siliceous (quartzose) sandstones, conglomerates and minor interbedded volcanics, and springs associated with these rocks (EHP, 2014).</p>
Soils	<p>Land zone 3 – Includes a diverse range of soils, predominantly Vertosols and Sodosols; also with Dermosols, Kurosols, Chromosols, Kandosols, Tenosols, Rudosols and Hydrosols; and Organosols in high rainfall areas (EHP, 2014).</p> <p>Land zone 8 – Soils include Vertosols, Ferrosols, and shallow Dermosols. (EHP, 2014).</p> <p>Land zone 9 – Includes a diverse range of fine textured soils of moderate to high fertility, predominantly Vertosols, Sodosols, and Chromosols (EHP, 2014).</p> <p>Landzone 10 – Soils are predominantly shallow Rudosols and Tenosols of low fertility, but include sandy surfaced Kandosols, Kurosols, Sodosols and Chromosols (EHP, 2014).</p>
Pre-clear regional ecosystem (V.)	12.9-10.17, 12.9-10.14b, 12.12.3, 12.12.2, 12.8.14, 12.8.8, 12.12.23, 12.3.7 (Qld Globe, 2020).
Existing vegetation	Regional Ecosystems 12.3.7, 12.8.14a, 12.9-10.14, 12.9-10.17, 12.12.2, 12.12.3 and 12.12.23 (New Ground, 2015)
Is there a PMAV currently over all or part of the property?	Yes – a small portion of the offset area is within a Category X area registered under PMAV 2009/009495.
LEGALLY BINDING MECHANISM	
<input checked="" type="checkbox"/> Voluntary Declaration (Vegetation Management Act 1999)	<input type="checkbox"/> Covenant (Land Act 1994/ Land Title Act 1994)
Reference Number:	Reference Number:
<input type="checkbox"/> Nature Refuge (Nature Conservation Act 1992)	<input type="checkbox"/> Other
Reference Number:	Reference Number:



1.5 Suitability of offset

The offset area to which this management plan relates was determined to be suitable by the Commonwealth Department of Agriculture, Water and the Environment (DAWE) as an environmental offset to which the implementation of a targeted land management approach is to result in a net gain in koala and grey-headed flying-fox habitat quality and legal protection of existing habitat from incompatible land uses. Specifically, the subject offset was approved by DAWE to mitigate the impact of the clearing of koala and grey-headed flying fox habitat associated with the Woogaroo Heights Residential Development (EPBC Act referral ref. no. 2017/7875). A brief outline of the ecological context of the offset area is provided below.

Description of Offset Area

The proposed offset area ('offset site'/'the site') was designed by ecologists of New Ground to create technically-defensible and long-term conservation gains for koala and grey-headed flying fox. In offset site selection, New Ground sought out an 'at risk' site of ecological value with a particular focus on mitigating koala habitat clearing and associated loss of grey-headed flying fox foraging habitat in the greater Ipswich area.

The offset site selection process was driven by the objects of the Environmental Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (DSEWPoC, 2016) ('Offsets Policy') and the EPBC Act referral guidelines for the vulnerable koala (DoE, 2014) ('Referral guideline'). As a result, the attributes of the Koala habitat assessment tool (KHAT) and the mitigation tables of the Referral guideline formed the basis of the selection criteria for candidate offset sites. Further, the Draft Recovery Plan for the Grey-headed Flying-fox *Pteropus poliocephalus* (DoE, 2017) ('Draft Recovery Plan') was considered in the evaluation of offset site suitability to mitigating habitat clearing impacts on grey-headed flying fox populations of the South-east Queensland bioregion.

Risk of loss of habitat value was a focal selection criterion in offset suitability assessment. In addition, reference was made to Queensland Government strategic planning studies such as the South East Queensland Regional Plan 2009-2031 (DIP, 2009) and the South East Queensland Biodiversity Planning Assessment (EPA v3.5, 2015) to identify localities with an envisaged pattern of future development that would be congruent to the conservation objectives of an environmental offset site.

Desktop review results identified a strong potential for Lot 18 CA31460 (referred to as 'the Meads'/'the offset site') to exhibit features and functions of high ecological significance over time with appropriate conservation-based management. Further, at the time of offset candidate site selection; the site was for sale as a grazing and cabinet timber property with an intensive logging event scheduled under an Operational Harvesting Plan. The rationale for the purchase of the site as an EPBC Act koala habitat and grey-headed flying fox foraging habitat offset site is summarised as follows:

- Opportunity to strengthen existing reserve network - Positioned at the edge of a contiguous network of protected areas (namely Crow's Nest National Park, Perseverance Dam reserves) spanning > 2,400 ha).
- High diversity of koala habitat type variants - Six (6) regional ecosystem types dominated by koala feed tree species spanning four (4) land zones including alluvium at a range of altitudes. Field surveys undertaken by New Ground botanists on the offset site confirmed that regional ecosystem designations of the site are generally correct and that 89% of the remnant areas of the offset site consist of a regional ecosystem type that contains or supports *E. tereticornis*. This is of interest since it has been found that female koalas whose home range encompasses a diverse assemblage of feed tree species, particularly *E. tereticornis*, raise more young successfully during their lifetime (White 1994). Adequate nutrition also appears to play a significant role in the prevention of disease (Lanyon and Sanson 1986).
- Position in State Significant Corridor (No. 6 Main Range NP to Don River) and entire site designation as State Significant Habitat (South East Queensland Biodiversity Planning Assessment v4.1 (2016) ('SEQBPA')) The proposed offset area is mapped as hosting the centre line of the No. 6 Main Range NP to Don River State Significant Corridor.
- Other notable findings of the SEQ BPA as they relate to the proposed offset area are that the site is ranked as of 'Very High' (biodiversity value) under Tract Size SEQ BPA criterion, 'Very High' under 'Ecosystem Diversity' SEQ BPA criterion, 'Very High' under SEQ BPA 'Wildlife Refugia' criterion, 'Very High' under SEQ BPA 'Concentration of disjunct populations' criterion and 'Very High' under SEQ BPA Habitat for EVNT (Endangered, Vulnerable, Near Threatened) taxa' criterion.
- Regionally significant watercourse/fauna movement conduit - The Perseverance Creek waterway corridor traverses the site's western boundary. Perseverance Creek is a fourth order stream that conveys flows from Ballard Creek, Pipeclay Creek and tributaries to Lake Perseverance approximately 5 km north of the site. The confluence of Perseverance Creek, Ballard Creek and Pipeclay Creek occurs at the western boundary of the offset area. The Perseverance Creek system is a regionally significant fauna movement corridor; connecting



the rural, conservation area (Crow’s Nest National Park), State Forest (Pechy State Forest) and local reserve (Lake Perseverance catchment reserve) landscapes of the localities of Hampton, GrapeTree, Perseverance, Kia-Ora and Ravensbourne.

- Value as grey -headed flying fox foraging resource –*P. poliocephalus* feeds on *Eucalyptus* spp, *Corymbia* spp, *Angophora* spp, *Melaleuca* spp and *Banksia* spp blossoms (Eby, 2000a; DoE, 2017). Scarcity in winter and spring foraging resources is recognised as a key threat for the grey-headed flying- fox (DoE, 2017). The offset area contains a wide variety of suitable food source trees and regional ecosystem types that provide year round foraging resources. As presented in Table 1, the offset area features regional ecosystem types that are associated with winter and spring foraging species.
- *P. poliocephalus* has been recorded to feed from trees within 40 km of a day roost site (DoE, 2017). Several grey-headed flying fox camps have been recorded within the foraging range of the species from the offset area as presented by the DoE’s online National Flying-fox monitoring viewer. Of those recorded as active by the National Flying-fox monitoring viewer, the Murphy’s Creek (185) camp is approximately 12 km south-west of the offset area and the Atkinsons Dam camp (a Nationally Important Flying-fox Camp) is approximately 33 km east of the offset area. In addition, a grey-headed flying fox camp was recorded by New Ground at Little Oakey Creek between Tessman Road and Taylor Road at Ravensbourne (latitude 27.3508 and longitude 152.1697) on 20 March 2019. The camp is situated within a riparian vegetation community resembling Regional Ecosystem type 12.5.6 and it was estimated that 5000-7000 grey-headed flying foxes were at the roost during the 20 March inspection. The Tessman Road camp is not presented by the National Flying-fox monitoring viewer and is approximately 5 km to the north-east of the offset area.

TABLE 1.3: PTEROPUS POLIOCEPHALUS WINTER AND SPRING FORAGING SPECIES DOMINANT WITHIN REGIONAL ECOSYSTEMS RECORDED IN THE OFFSET AREA

SPECIES	WINTER FLOWERING	SPRING FLOWERING
<i>Corymbia citriodora</i> subsp. <i>variegata</i>	✓	✓
<i>Eucalyptus acmenoides</i>	-	✓
<i>Eucalyptus crebra</i>	✓	-
<i>Eucalyptus pilularis</i>	-	✓
<i>Eucalyptus siderophloia</i>	✓	✓
<i>Eucalyptus tereticornis</i>	✓	✓
<i>Melaleuca bracteata</i>	-	✓
<i>Melaleuca linariifolia</i>	-	✓
<i>Melaleuca trichostachya</i>	-	✓
<i>Melaleuca viminalis</i>	-	✓

Source: Anderson (2016; Brooker & Kleinig, 2004; Leiper et al 2008)

- Value to a range of EPBC Act threat-listed species in addition to koala and grey-headed flying fox - Including southern greater glider (*Petauroides Volans*) and brush-tailed rock wallaby (*Petrogale penicillata*), New Holland mouse (*Pseudomys novaehollandiae*), spotted-tailed quoll (*Dasyurus maculatus maculatus*) (DNPRSR, 2013; DSITIA, 2018).
- High risk of loss – Property was being sold with an Operational Harvesting Plan for cabinet timber logging.
- Other threatening processes – The Meads was found to host a suite of additional processes deemed to offer potential threat to site value as koala and grey-headed flying fox foraging habitat. These threats include :
 - » Infestations of scheduled (under Biosecurity Act 2014 (Qld)) environmental weeds (namely *Lantana* (*Lantana camara*) and Broad-leaf privet (*Ligustrum lucidum*) have the potential to physically impede koala movement along the ground between trees, thereby limiting the habitat available for the species (DTMR, 2015). The densities observed on site by New Ground botanists are considered to act as obstacles to koala dispersal as well as a threat to current and future canopy floristics and recruitment of feed trees. This threat to canopy floristics also carries risk for grey-headed flying fox in so far that foraging resources may be outcompeted and/or suppressed by weeds. The Ipswich Koala conservation and management plan (ICC, 2015) identifies weeds management as a key management action for the successful management of local koala populations. Further, the DoE (2017) Draft Recovery Plan for grey-headed flying fox identifies loss of foraging habitat (particularly winter and spring resources) as a key threatening process for grey-headed flying fox populations.



- » Presence of uncontrolled wild dog populations is recognised as a key management problem in the Perseverance area by Council (Matthew Love, Operational Supervisor – Conservation and Pest Management North, Toowoomba Regional Council, personal communication 28 September 2018). Several national-level recovery plans identify wild dogs as a known or potential threat to EPBC protected wildlife including mammals, marsupials and rodents (Howard et al 2018) with koalas being part of their diet (DAF Dingo factsheet 2016). Wild dogs are recorded to be common and of medium density in the vicinity of the site (Qld Annual Pest Distribution Survey 2013-2014; feralscan.org.au, 2018). Wild dog distribution and abundance is resource dependant due to their high level of adaptability (Wild dog factsheet – Qld government 2016). However, they are known to travel along fences, roads, creek lines and ridges (Queensland Business, 2018). A significant feature of the offset area is the presence of 4th and 1st order streams, which could assist in the movement of wild dogs across the site/locality.
- » Presence of other pest animals that are known to cause significant disturbance to koala habitat and grey-headed flying fox foraging habitat - Traces of wild red deer (*Cervus elaphus*) and pigs (*Sus scrofa*) were recorded during New Ground (2015) field surveys. Studies of deer diet in Australia have indicated potential for negative impacts on a variety of plant species, with observations of selective foraging by deer and disproportionate effects on native plants with a low tolerance to herbivory (Peel et al. 2005; Rehwinkel 2008; Claridge 2014). Observational studies suggest that pigs alter the structure and composition of vegetation communities by curtailing plant recruitment and survival through rooting and trampling (Hone 2002); depleting populations of native plants through selective feeding (Melzer et al. 2009, Webber et al. 2010); altering nutrient cycling dynamics by disturbing soil and water; and dispersing invasive weeds and pathogens (Lynes & Campbell 2000, Setter et al. 2002).
- » Grazing – the entire site has been historically grazed as evidenced by scats, tracks, soil compaction/erosion, presence of derived pastures and reduced diversity of native flora species in the understorey. This land use can reduce site value to koala and grey-headed flying fox through disturbance of understorey vegetation (and soil conditions) resulting in suppression of recruitment of foraging/shelter flora species (Calvert, 2001; Dorrrough et al, 2004).
- » Barriers to dispersal – the site exhibits internal fencing (barbed –wire, three wire, electric fencing) deemed a barrier/retardant to koala movement and dispersal as well as a hazard to grey-headed flying foxes (DoE, 2017).
- » Direct disturbance – management of the site for conservation purposes will provide protection from disturbance to koalas and grey-headed flying foxes utilising the site. Additionally, it is anticipated that conservation-purpose management of the site would allow for conditions conducive to the establishment of a camp onsite by grey-headed flying foxes.

Site values and context were ground-truthed by two (2) ecologists over a four (4) day field survey period. Data was collected from 38 formal survey sites including vegetation surveys, koala scat assessment technique surveys, fauna habitat surveys and disturbance assessments. Field works confirmed the Meads to be a quality koala and grey-headed flying fox offset site candidate as well as the opportunity to improve ecological value via exclusion of logging and ongoing management of weeds and pest fauna. The results of New Ground desktop review works and ecological surveys conducted over the Meads are documented by the report entitled Technical Summary of Koala Habitat Offset Site Proposal – Lot 18 CA31460 (New Ground, 2015).

The management actions described in **Chapter 2** of this report were formulated in collaboration with DAWE through the offset assessment process and seek to enhance koala and grey-headed flying-fox habitat quality via the reduction of the level of threat associated with the threatening processes listed above as well as additional threats cited by the EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (DoE, 2014) and the Draft Recovery Plan for the Grey-headed Flying-fox *Pteropus poliocephalus* (DoE, 2017).



Chapter 2: Management Objectives and Outcomes

Table 2.1 is a reproduction of the offsets outcomes table created in collaboration with Department of Agriculture, Water and the Environment which formed the basis for the EPBC Act approval of the Meads offset. The outcomes presented by **Table 2.1** are consistent with EPBC Act approval conditions 6 and 7. In accordance with EPBC Act approval condition 8, the outcomes presented by **Table 2.1** are to be maintained for the duration of the EPBC Act approval (2033). Refer to **Appendix B** for Management Units Plan

TABLE 2.1: OFFSET SITE OUTCOMES SUMMARY TABLE

OUTCOME:	YEAR 1 (2021)	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10- YEAR 12 (2033)
Baseline surveys: Baseline surveys completed to inform management measures and to be reported against in annual independent audit and report	Outcome achieved									
Independent audit and report: Evidence of continual ongoing improvement towards, achievement of, or maintenance of each Outcome				Independent audit and report conducted and published				Independent audit and report conducted and published		
Restoration of regional ecosystems (REs): Each RE achieves BioCondition Benchmarks for Regional Ecosystems (including recruitment of an average of 6 winter and spring foraging	Baseline survey complete Offset Area Management Plan updated according to baseline survey data	Annual assisted natural regeneration (ANR)	Annual assisted natural regeneration (ANR) monitoring event	Annual assisted natural regeneration (ANR) monitoring event	Annual assisted natural regeneration (ANR) monitoring event	Annual assisted natural regeneration (ANR) monitoring event	Annual assisted natural regeneration (ANR) monitoring event	Outcome achieved. BioCondition Benchmarks for Regional Ecosystems achieved: <u>For RE 12.9-10.17c:</u> – Tree canopy median height 24 m – Tree canopy cover 57%, – Tree sub-canopy median height 11 m	Outcome maintained	Outcome maintained



TABLE 2.1: OFFSET SITE OUTCOMES SUMMARY TABLE

OUTCOME:	YEAR 1 (2021)	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10- YEAR 12 (2033)
species for GHFF in each Management Unit)	and implemented.							<ul style="list-style-type: none"> - Tree sub-canopy cover 33% - Typical tree species include <i>Eucalyptus carnea</i> (Broad-leaved white mahogany), <i>Eucalyptus tindaliae</i> (Queensland white stringybark), <i>Corymbia citriodora</i> subsp. <i>variegata</i> (spotted gum), <i>Eucalyptus crebra</i> (narrow-leaved red ironbark), <i>Eucalyptus major</i> (mountain grey gum). <p><u>For RE 12.9-10.14b¹:</u></p> <ul style="list-style-type: none"> - Tree canopy average height 32 m - Tree canopy cover 55% - Tree sub-canopy average height 17 m - Tree sub-canopy cover 25% - Typical tree species include <i>Eucalyptus pilularis</i> (blackbutt), <i>Angophora woodsiana</i>, <i>Eucalyptus baileyana</i>, <i>Corymbia henryi</i>, <i>Corymbia trachyphloia</i>, <i>Eucalyptus taurina</i> and <i>Eucalyptus microcorys</i>.² <p><u>For RE 12.12.2³:</u></p> <ul style="list-style-type: none"> - Tree canopy average height 33 m - Tree canopy cover 59% - Tree sub-canopy average height 13 m - Tree sub-canopy cover 10% - Typical tree species include <i>Eucalyptus pilularis</i> (blackbutt), <i>Syncarpia verecunda</i>, <i>Angophora woodsiana</i> (smudgy apple), <i>Eucalyptus microcorys</i> (tallowwood), <i>E. resinifera</i> (red mahogany), <i>E. tindaliae</i> (Queensland white stringybark), <i>E. propinqua</i> (grey gum) and <i>E. saligna</i> (Sydney blue gum). 		

¹ RE identified as 12.9-10.14b in Preliminary Documentation, Appendix B, Attachment 3.

Benchmarks updated as per Queensland Herbarium 2020, *Draft BioCondition Benchmarks for Regional Ecosystem 12.9-10.14b*.

² Typical tree species updated as per *Regional ecosystem details for 12.9-10.14*, available at: <https://apps.des.qld.gov.au/regional-ecosystems/details/?re=12.9-10.14>

³ Benchmarks updated as per Queensland Herbarium 2020, *Draft BioCondition Benchmarks for Regional Ecosystem 12.12.2*



TABLE 2.1: OFFSET SITE OUTCOMES SUMMARY TABLE

OUTCOME:	YEAR 1 (2021)	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10- YEAR 12 (2033)
								<p><u>For RE 12.12.3:</u></p> <ul style="list-style-type: none"> - Tree canopy median height 23 m - Tree canopy cover achieves open forest structure (60% benchmark) - Tree sub-canopy median height 12 m - Tree sub-canopy cover achieves woodland structure (20% benchmark) - Typical tree species: <i>Corymbia citriodora</i> subsp. <i>variegata</i> (spotted gum), <i>Corymbia intermedia</i> (pink bloodwood), <i>Eucalyptus tereticornis</i> (forest red gum), <i>Lophostemon confertus</i> (brush box), <i>Eucalyptus crebra</i> (narrow-leaved red ironbark). <p><u>For RE 12.12.23:</u></p> <ul style="list-style-type: none"> - Tree canopy median height 25 m - Tree canopy cover 56% - Tree sub-canopy median height 12 m - Tree sub-canopy cover 10% - Typical tree species: <i>Eucalyptus tereticornis</i> subsp. <i>tereticornis</i> (forest red gum), <i>Eucalyptus tereticornis</i> subsp. <i>basaltica</i>, <i>Eucalyptus eugenioides</i> (thin-leaved stringybark), <i>Eucalyptus crebra</i> (narrow-leaved red ironbark), <i>Corymbia intermedia</i> (pink bloodwood) <p><u>For RE 12.3.7:</u></p> <ul style="list-style-type: none"> - Tree canopy median height 16 m - Tree canopy cover 30% - Tree sub-canopy median height 11 m - Tree sub-canopy cover 30% - Typical tree species include: <i>Eucalyptus tereticornis</i> (forest red gum), <i>Melaleuca viminalis</i>, <i>Casuarina cunninghamiana</i> (river sheoak), <i>Waterhousea floribunda</i> (weeping cherry) 		



TABLE 2.1: OFFSET SITE OUTCOMES SUMMARY TABLE

OUTCOME:	YEAR 1 (2021)	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10- YEAR 12 (2033)
								For RE 12.8.14: – Tree canopy median height 22 m – Tree canopy cover 60% – Tree sub-canopy median height 11 m – Tree sub-canopy cover 15% – Typical tree species include: <i>Eucalyptus eugenioides</i> (thin-leaved stringybark), <i>Eucalyptus biturbinata</i> (grey gum), <i>Eucalyptus melliodora</i> (yellow box), +/- <i>Eucalyptus tereticornis</i> (forest red gum), <i>Corymbia intermedia</i> (pink bloodwood)		
Weed management: Extent of weed cover <5% over the entire site Weeds means 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 <i>Lantana camara</i> and <i>Ligustrum lucidum</i> .	Baseline survey complete Offset Area Management Plan updated according to baseline survey data and implemented. Weed hygiene procedure prepared and implemented to control risk of weed import from contractors.	Weed control focussed in impenetrable and dense woody weed cover areas (Management Unit 1) ('MM1')	Weed control focussed in Management Unit 2 ('MM2')	Weed control focussed in Management Unit 3 ('MM3')	Weed control focussed in Management Unit 4 ('MM4')	Weed control focussed in Management Unit 5 ('MM5')	Outcome achieved Follow up weed control events	Outcome maintained Follow up weed control events	Outcome maintained Follow up weed control events	Outcome maintained Follow up weed control events
Fire management: Site returned to an ecological burn cycles regime	Baseline survey completed Offset Area Bushfire	Mosaic ecological burn undertaken over 40-60% of offset area	-	Follow up mosaic burn (subject to regeneration outcomes of initial burn)	Outcome achieved	Outcome maintained Site managed under Bushfire Management Plan	Outcome maintained Site managed under Bushfire	Outcome maintained Site managed under Bushfire Management Plan	Outcome maintained Site managed under Bushfire	Outcome maintained Site managed under Bushfire



TABLE 2.1: OFFSET SITE OUTCOMES SUMMARY TABLE

OUTCOME:	YEAR 1 (2021)	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10- YEAR 12 (2033)
	Management Plan ⁴ developed and implemented						Management Plan		Management Plan	Management Plan
Exclusion of livestock: Livestock excluded from entire offset site.	Outcome achieved Fencing repaired to exclude livestock from entire offset site.	Outcome maintained	Outcome maintained	Outcome maintained	Outcome maintained	Outcome maintained	Outcome maintained	Outcome maintained	Outcome maintained	Outcome maintained
Non-native predators and non-native herbivores : Statistically significant reduction pest fauna abundance	Baseline survey complete Offset Area non-native predator and pest management plan developed and implemented	Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event ⁵	Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event	Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event Pest fauna abundance survey.	Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event	Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event	Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event	Outcome achieved Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event Achievement of 90% in reduction of wild dogs, deer and pig abundance from baseline levels. Reduction in the rate of koala mortalities attributable to non-native predators by 90% relative to the numbers identified during baseline surveys.	Outcome maintained Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event	Outcome maintained Feral animal culling (shooting) event (number and species of ferals culled recorded) Annual 1080 baiting event
Habitat connectivity: Removal of internal barbed-wire fencing	Outcome achieved Internal barbed-wire fencing to be	Maintenance of external barbed wire fencing visibility tags	Maintenance of external barbed wire fencing visibility tags	Maintenance of external barbed wire fencing visibility tags	Maintenance of external barbed wire fencing visibility tags	Maintenance of external barbed wire fencing visibility tags	Maintenance of external barbed wire fencing visibility tags	Maintenance of external barbed wire fencing visibility tags	Maintenance of external barbed wire fencing visibility tags	Maintenance of external barbed wire fencing visibility tags

⁴ Offset Area Bushfire Management Plan developed in accordance with Queensland Herbarium’s Regional Ecosystem Description Database (REDD) fire management guidelines for the vegetation types that occur within the offset area

⁵ Any use of 1080 baits to be in accordance with 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.



TABLE 2.1: OFFSET SITE OUTCOMES SUMMARY TABLE

OUTCOME:	YEAR 1 (2021)	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10- YEAR 12 (2033)
<p>removed from within offset area (excluding perimeter barbed-wire fencing).</p> <p>Visibility tags fixed at 30cm intervals on the top strand of perimeter barbed-wire fencing.</p>										

Table 2.2 a reproduction of the offsets outcomes table created in collaboration with Department of Agriculture, Water and the Environment which formed the basis for the EPBC Act approval of the Meads offset.

TABLE 2.2: OFFSET SITE MANAGEMENT OVERVIEW YEAR 13 ONWARDS

OUTCOME	YEAR 13 ONWARDS
Offset area legally secured for conservation purposes for the duration of the impact (i.e. in perpetuity)	The offset site will ongoingly be managed under an Offset Area Management Plan (registered with the Queensland Government along with the offset site's status as an offset area (Category A Area) under the Vegetation Management Act 1999 (Qld). Accordingly, the offset area will be subject to ongoing land use prohibitions, namely clearing, forestry, grazing and cropping after the active management period. It is also noted that weed and pest management will ongoingly be required in accordance with landholder obligations of the Biosecurity Act 2014 (Qld).



Chapter 3: Conclusion

Adherence to this management plan will result in a demonstrable increase in koala and grey-headed flying-fox habitat quality within the offset area. Further, the data set that will be compiled via monitoring works throughout the active management period will form a technically rigorous platform to inform adaptation of the management actions presented herein such that management objectives may be realised.

In conclusion, this management plan is focussed on attaining defined management objectives within the offset area. This approach allows for an adaptive style of management within the offset area which manages the risk of non-conformance as a result of unforeseen events such as failure of a given action to perform as intended or force majeure happenings.



Chapter 4: Consent

4.1 Administering Authority

~~SIGNED by the Queensland Department of Natural Resources, Mines and Energy to indicate approval of the offset area management plan.~~

Name:

Signature:

Witness

Name:

Date:

..

10 March 2021 - The Queensland Department of Resources notes, parts of this Offset Area Management Plan meet the requirements for a management plan associated with the subject area being a declared area under Part 2, Division 4, Subdivision 2 of the Vegetation Management Act 1999.

4.2 Landholder

The landowner agrees:

1. Any non-compliance with the requirements of this offset area management plan shall constitute a breach of the terms and conditions of the legally binding mechanism entered into.
2. To notify the State in writing of an Event, or the likelihood of the occurrence of an Event. Event means any agreement or understanding entered into or accepted by and or circumstance permitted or suffered by the landholder which effects a change of ownership, control or use of the offset area, the exercise of power of sale under any Mortgage, the granting of a Mortgage, the appointment of a receiver, the death of a landholder or any other circumstance which may allow or permit a person, other than the Landholder to own, control or use the offset area. In notifying the State of an Event, the landholder will notify the State of the nature of the change, or potential change of ownership, control or use result from the Event, and the name and address of any person who may own, control or use the offset area as a result of the Event.
3. That if, at the time of execution of this offset area management plan, there exists a Property Map of Assessable Vegetation (PMAV) over the offset area or a part of it, the landholder hereby agrees, where the management plan area is identified as Category X on the PMAV, to the replacement of the PMAV by the State to reflect the offset area as Category A.
4. To take all necessary steps as may be required to accomplish the obligations contained in this offset area management plan.

The landowner acknowledges:

5. That before the State will agree to the release this offset area management plan the State must be satisfied that the objectives and activities contained in the offset area management plan have been achieved.

The landowner notes:

6. All reports, notices or requests for amendment in relation to this offset area management plan must be in writing and delivered to the administering authority at the following address:
DAWE
GPO Box 787
Canberra ACT 2601 Australia
Switchboard +61 2 6274 1111



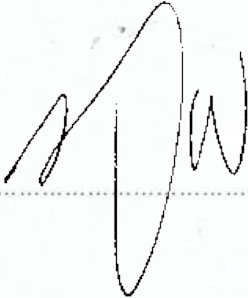
SIGNED by New Ground Conservation Pty Ltd, being the current owner of the abovementioned property to indicate that the terms of this offset area management plan including responsibilities under the offset area management plan, have been read, understood and accepted.

Director of New Ground Conservation Pty Ltd:

Signature: 
.....
.....

Date: 17/12/20
.....
..

Director of New Ground Conservation Pty Ltd:

Signature: 
.....
.....

Date: 17/12/2020
.....
..



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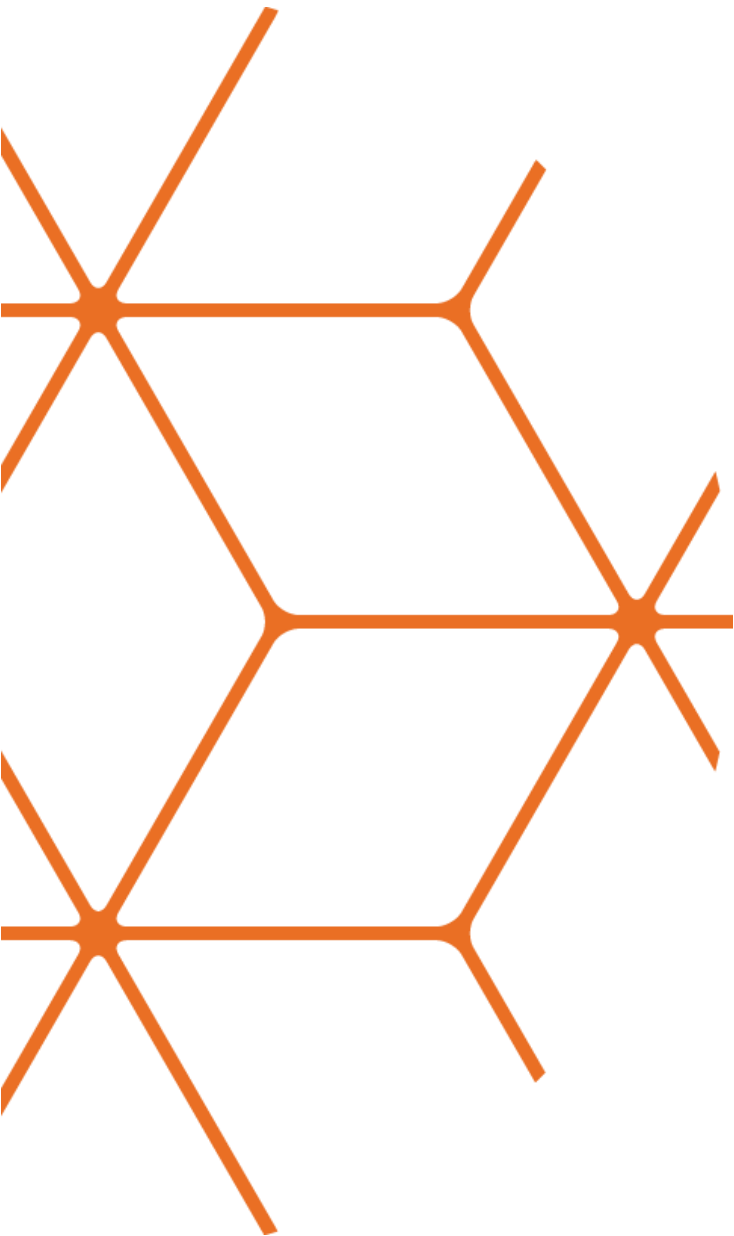
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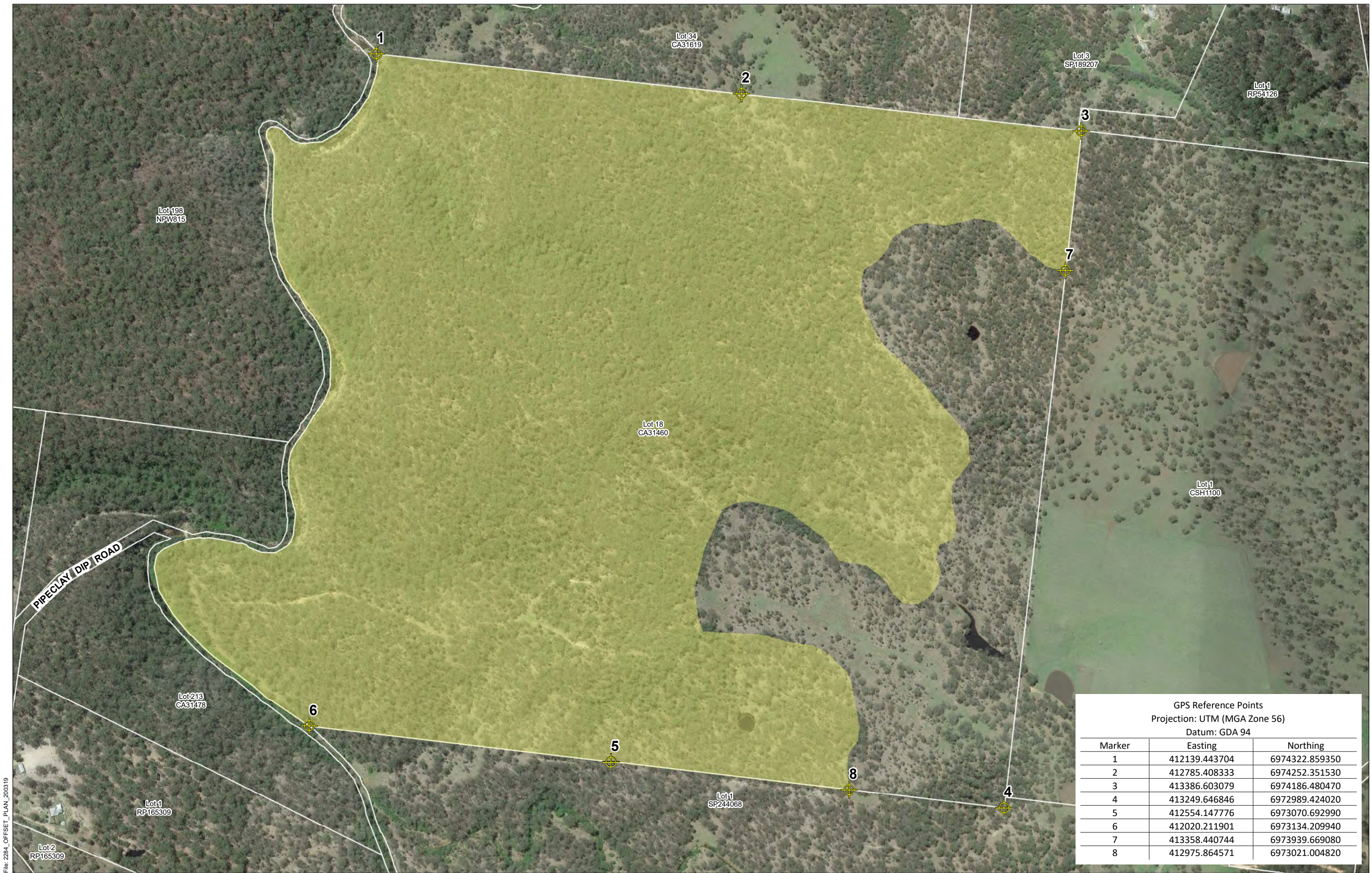
White, NA (1994). Habitat utilisation and population dynamics of the koala (*Phascolarctos cinereus*) in the Bremer river catchment, south-east Queensland. School of Biological Sciences, The University of Queensland.

Wild Dog (*Canis familiaris*) – Queensland Distribution 2013-2014 (2015). Qld Annual Pest Distribution Survey 2013-2014. Biosecurity Queensland, Department of Agriculture and Fisheries.

APPENDIX A

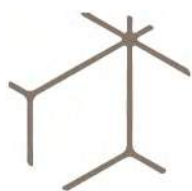
Offset Area Plan (with Offset Area boundary co-ordinates)



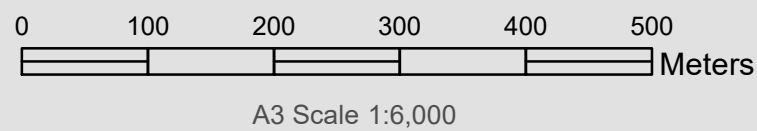


GPS Reference Points		
Projection: UTM (MGA Zone 56)		
Datum: GDA 94		
Marker	Easting	Northing
1	412139.443704	6974322.859350
2	412785.408333	6974252.351530
3	413386.603079	6974186.480470
4	413249.646846	6972989.424020
5	412554.147776	6973070.692990
6	412020.211901	6973134.209940
7	413358.440744	6973939.669080
8	412975.864571	6973021.004820

File: 2284_OFFSET_PLAN_200319



OFFSET AREA PLAN



- Reference Points
- Offset Area (132Ha)

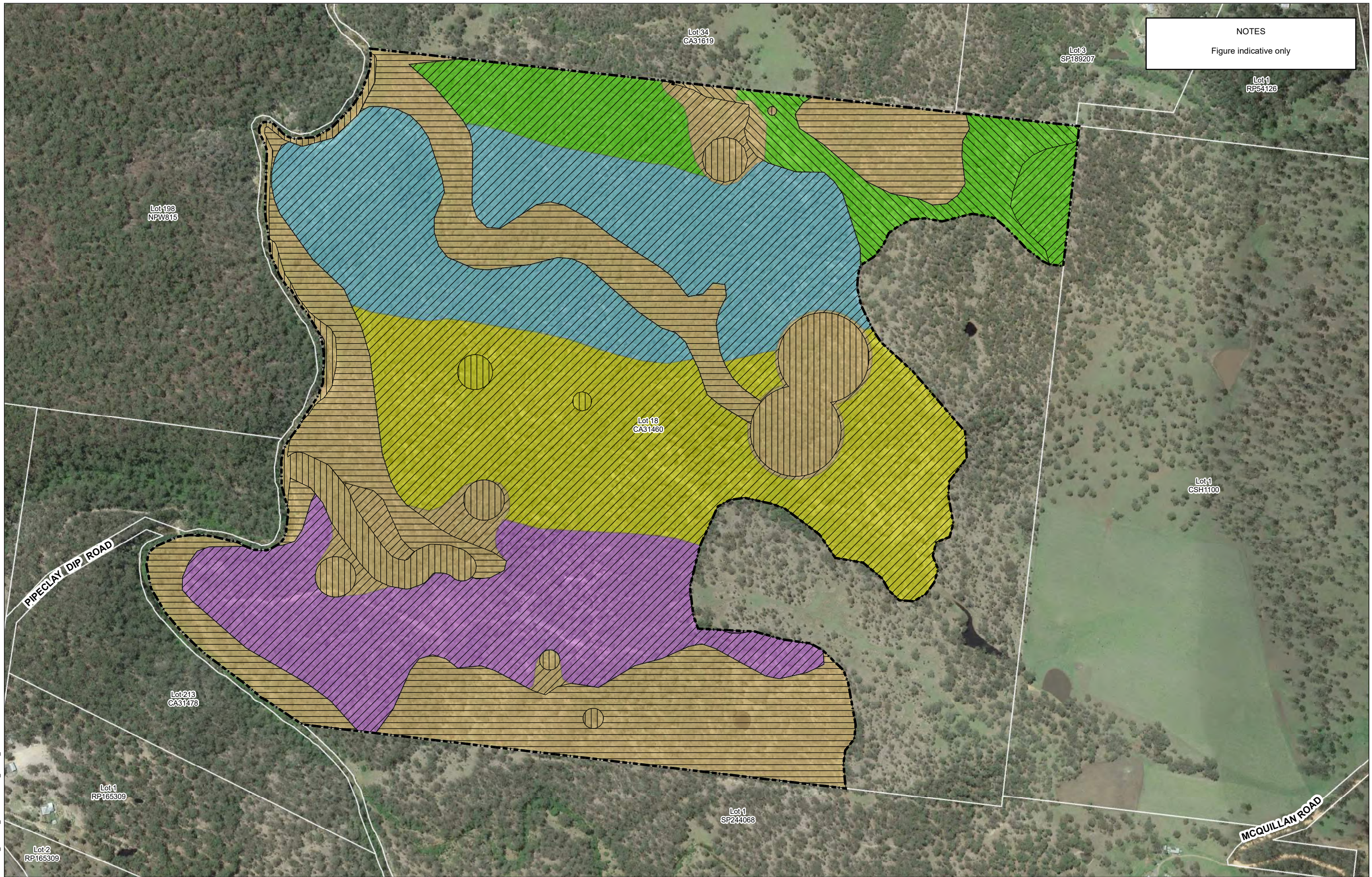
Sheet Number: 1
 Project: 2284
 Version: 0
 Date: 22/03/19
 Sources: Cadastral boundaries: QLD DCDB DNRM 2019
 Aerial Photo: Google Earth 11/1/2017

APPENDIX B

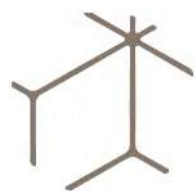
Offset Management Units Plan



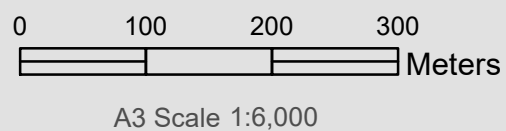
NOTES
Figure indicative only



File: 2284_OFFSET_MANAGEMENT_UNITS_200319



OFFSET MANAGEMENT UNITS PLAN



Weed Distribution		Management Mosaic	
	Offset Area (132Ha)		MM1 (45.0 Ha)
	Scattered to Dense, 26-75% cover		MM2 (19.8 Ha)
	Dense, 76-90% cover		MM3 (28.7 Ha)
	Impenetrable, >91% cover		MM4 (27.8 Ha)
	Scattered, <25% cover		MM5 (12.8 Ha)

Sheet Number: 1
Project: 2284
Version: 0
Date: 22/03/19
Sources: Cadastral boundaries: QLD DCDB DNRM 2019
Weed distribution data (New Ground 2005)
Aerial Photo: Google Earth 11/11/2017

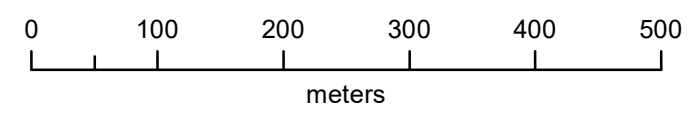


Declared Area Map

DAM 2020/014171

LOT on PLAN
18CA31460

Sheet 1 of 2



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

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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.



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:

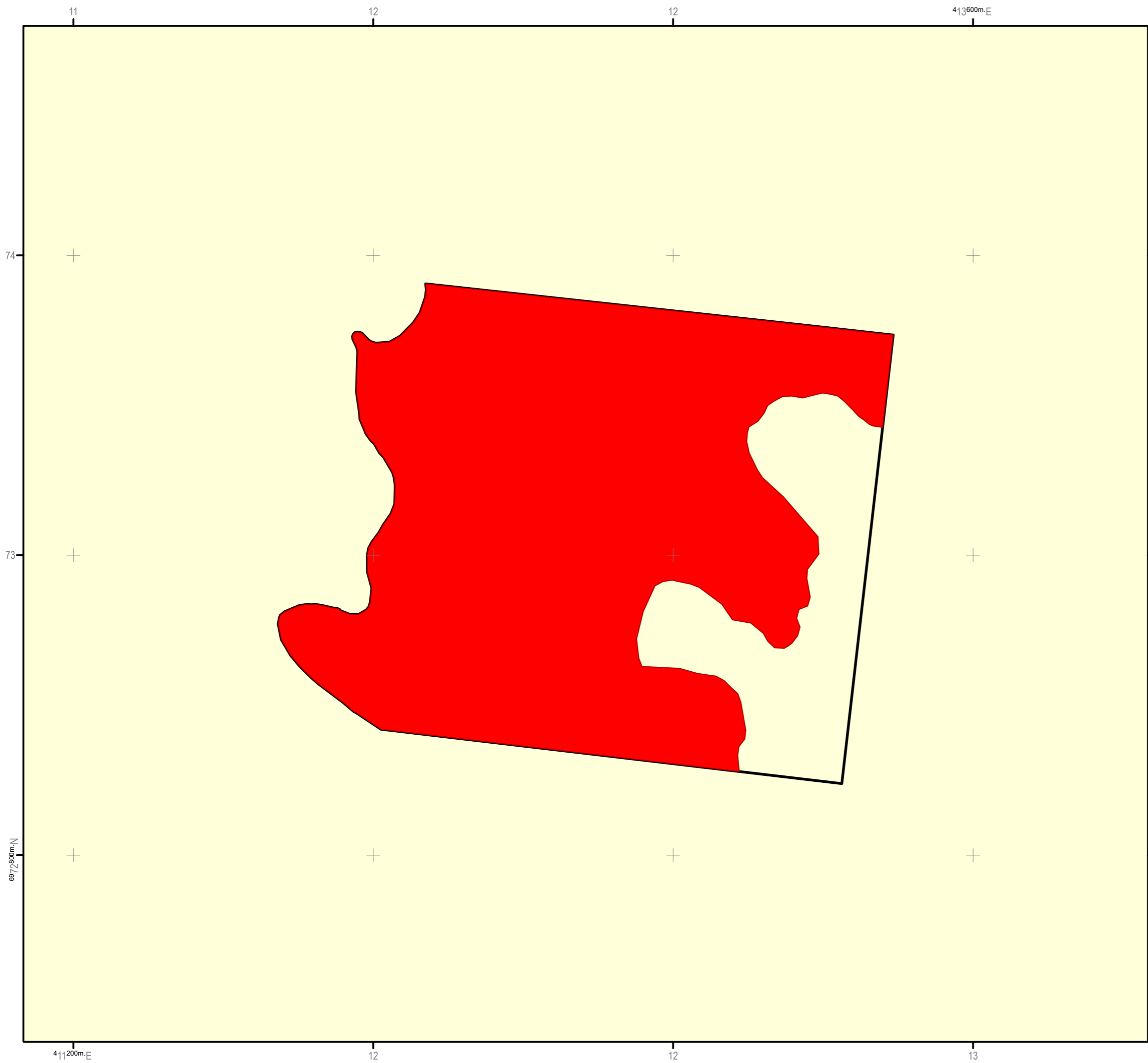
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Map Prepared by: LMO
Department of Resources
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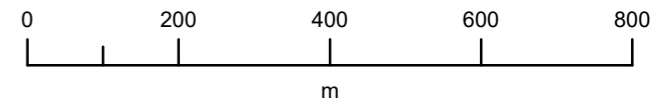
Map Preparation Date: 20/01/2021

This colour plan must be reproduced in colour.



Property Map of Assessable Vegetation
PMAV 2020/014172
 LOT on PLAN
 18CA31460

Sheet 1 of 1



Scale: 1:10000
 (original size A3)



LEGEND

- Subject Lot(s)
- Area to which the PMAV does not apply
- Vegetation Category Area**
- Category A area (see 2020/014171)

Notes:

Property boundaries provided by Department of Resources. The property boundaries on this plan are a spatial representation of the property boundaries. They are not the legal property boundaries and are subject to change as more accurate information becomes available. The PMAV does not move with changes to the property boundaries. Labelled Category B areas indicate a change in Regional Ecosystem classification as a result of detailed assessment.

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

This PMAV was made under Section 20B of the *Vegetation Management Act 1999* (VMA) as sections 20B(1)(a) and (b) of the VMA apply to the area. This PMAV replaces PMAV 2009/009495 for the subject area under Section 20D of the VMA.

Signed for the Chief Executive of the Department of Resources by:
 Name: Sandra Witheyman
 Title: Senior Natural Resource Management Officer

Signature:

Date: 12 March 2021

Map Prepared by: DGH
 Department of Resources
 PO Box 589, Dalby, Qld, 4405

INFORMATION NOTICE

Information Notice issued pursuant to section 20B (2) of the *Vegetation Management Act 1999* (VMA)
Property Map of Assessable Vegetation (PMAV) issued under section 20B (1) of the VMA

1. **PMAV reference:** 2020/014172
2. **Decision:** to make a PMAV under section 20B(1) of the VMA over part of land described as Lot 18 CA31460.

This decision can be internally reviewed if requested by an owner. The details on how to do this are contained in **Appendix 1**.
3. **Reasons for decision:**

An area of Lot 18 CA31460 has been declared (decision reference: 2020/014171) as an area of high nature conservation value in accordance with s19F of the VMA. The declared area application also detailed that the area to be declared is an offset area (ref EPBC 2017/7875).

In accordance with section 20B (1)(a) and 20B (1)(b) of VMA, the decision has been made to make a PMAV over the declared area which is an offset area.
4. **Date:** 12 March 2021

Appendix 1: Rights of Review of the Decision

If you do not agree with the decision to certify this PMAV, you may make an application for an internal review of the decision under Part 4 of the *Vegetation Management Act 1999* (VMA).

Internal Review information can be sent to: vegetation@resources.qld.gov.au

Should you need to lodge the application in person or via post please phone 135 834 to discuss where this can best occur.

Please refer to the following extracts from the VMA for:

- your rights of review
- the time period in which you have to apply for review; and
- how the rights of review are exercised under the VMA.

Extracts from the VMA:

Part 4 Reviews and legal proceedings

Division 1 Internal reviews by chief executive

62 Internal review process before external review

Every review of an original decision must be, in the first instance, by way of an application for an internal review of the decision.

63 How to apply for internal review

- (1) A person who is given, or is entitled to be given, an information notice about a decision made under this Act may apply for an internal review of the decision.
- (2) An application for internal review of a decision must be—
 - (a) in the approved form; and
 - (b) made to the chief executive; and
 - (c) supported by enough information to enable the chief executive to decide the application.
- (3) The application must be made within 20 business days after—
 - (a) the day the person is given the information notice about the decision; or
 - (b) if paragraph (a) does not apply—the day the person otherwise becomes aware of the decision.
- (4) The chief executive may extend the time for applying for the internal review.
- (5) The application does not stay the decision.

63A Review decision

- (1) The chief executive must, within 30 business days after receiving the application—
 - (a) review the decision (the original decision); and
 - (b) make a decision (the review decision) to—
 - (i) confirm the original decision; or
 - (ii) amend the original decision; or
 - (iii) substitute another decision for the original decision; and
 - (c) give the applicant notice (the review notice) of the review decision.
- (2) If the review decision is not the decision sought by the applicant, the review notice must comply with the QCAT Act, section 157(2).
- (3) However, subsection (2) does not apply if the review decision relates to an original decision under section 138(1)(b).

Division 1A External reviews by QCAT

63B Who may apply for external review

- (1) A person who is dissatisfied with a review decision may apply, as provided under the QCAT Act, to QCAT for a review of the review decision.
- (2) However, subsection (1) does not apply if the review decision relates to an original decision mentioned in section 63A(3).

Author: Susan Crowley
File/Ref number: 2020/014172:1863001
Unit: Vegetation Management Unit
Phone:07 4999 6962



Department of Resources

16 March 2021 Att: Mt Nelson Wills
New Ground Conservation Pty Ltd
PO Box 588
Mudgeerara QLD 4213

Dear Mr Wills

RE: Application to secure an exchange area on Lot 18 CA31460 - Toowoomba Regional Council (the property) - Exchange area legally secured.

We refer to your application dated [insert date received] to legally secure an exchange area on the property.

The Department of Resources (the department) is satisfied that the proposed exchange area meets the requirements of an exchange area under the *Vegetation Management Act 1999* (VMA). Accordingly, a Property Map of Assessable Vegetation (PMAV) has been made over the exchange area in accordance with section 20B of the VMA.

A copy of the PMAV and Information Notice is attached for your records.

Please note this PMAV ([2020/014172]) will be noted on the property title, and is binding on current and future owners.

In accordance with the accepted development vegetation clearing code (ADVCC), you are required to undertake management, monitoring and reporting on the progress of the outcomes for the exchange area. Furthermore, whilst the exchange area management plan is not required to be submitted to the the department, the ADVCC requires that you retain the management plan and provide a copy to the the department upon request.

If you wish to discuss these matters further, please contact Dave Hinz on telephone number 4531 8513 quoting the above reference number.

Yours sincerely

A handwritten signature in black ink that reads 'Susan Crowley'.

Susan Crowley
Natural Resource Officer

Level 1
44 Nelson Street
Mackay QLD 4740

PO Box 63
Mackay
4740 QLD

Telephone: 135 VEG (135 834)
Email: vegetation@resources.qld.gov.au
www.resources.qld.gov.au
ABN 59 020 847 551

Appendix D

New Ground Baseline Ecological Report 2021

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

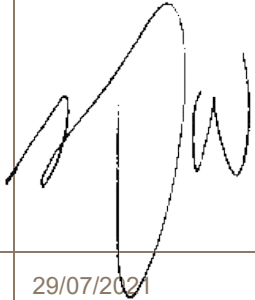


REPORT TITLE	BASELINE ECOLOGY REPORT
PROJECT	THE MEADS OFFSET SITE
CLIENT	LENLEASE COMMUNITIES (SPRINGFIELD) PTY LTD

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

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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 lucidum*) 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 suppress 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 lucidum*) (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 barbecued 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	<ul style="list-style-type: none"> » 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	<ul style="list-style-type: none"> » 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	<ul style="list-style-type: none"> » 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 hollow 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	<ul style="list-style-type: none"> » 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	<ul style="list-style-type: none"> » 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
	<ul style="list-style-type: none"> » 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	<ul style="list-style-type: none"> » 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	<ul style="list-style-type: none"> » 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	<ul style="list-style-type: none"> » 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	<ul style="list-style-type: none"> » 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	
<i>Angophora floribunda</i>	12.3.7													Flowering has been recorded in January, February and December (Euclid, 2021).
<i>Angophora subvelutina</i>	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).
<i>Angophora leiocarpa</i>	12.12.2; 12.9-10.17; 12.12.3													Flowering has been recorded in February, November and December. (Euclid, 2021)
<i>Corymbia citriodora</i>	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).
<i>Corymbia intermedia</i>	12.9-10.17													Flowering has been recorded in January, February, October, November and December. (Euclid)
<i>Eucalyptus acmenoides</i>	12.12.23; 12.9-10.17													Flowering has been recorded in April, July, August, September, October, November and December.
<i>Eucalyptus biturbinata</i> (syn. <i>E. punctuata</i>)	12.12.23													Flowering has been recorded in February, May and December (Euclid 2021).
<i>Eucalyptus carnea</i>	12.12.23; 12.9-10.17													Flowering has been recorded in April, September, October and November. Euclid
<i>Eucalyptus crebra</i>	12.8.14; 12.12.23; 12.12.3; 12.9-10.17													Flowering has been recorded all months except February (Euclid 2021).
<i>Eucalyptus eugenioides</i>	12.8.14													Flowering has been recorded in January, June, July, August, September, October and December (Euclid, 2021)
<i>Eucalyptus major</i>	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	
<i>Eucalyptus melliodora</i>	12.8.14													Flowering has been recorded in January, February, May, June, July, August, September, October, November and December (PlantNet, 2021).
<i>Eucalyptus moluccana</i>	12.8.14													Flowering has been recorded in January, February, March, April, May, June, August, October, November and December. (Euclid, 2021)
<i>Eucalyptus microcorys</i>	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).
<i>Eucalyptus pilularis</i>	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).
<i>Eucalyptus propinqua</i>	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).
<i>Eucalyptus robusta</i>	12.3.7													Flowering has been recorded in May, July August, September and October (Euclid, 2021).
<i>Eucalyptus siderophloia</i>	12.9-10.17													Flowering has been recorded in January, May, July, September, October, November and December (PlantNet, 2021).
<i>Eucalyptus tereticornis</i>	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).
<i>Eucalyptus tindaliae</i>	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	
<i>Lophostemon confertus</i>	12.9-10.14; 12.9-10.17; 12.12.23; 12.12.3													Flowering has been recorded from October – December (PlantNet, 2021)
<i>Melaleuca bracteata</i>	12.3.7													Flowering has been recorded in Spring (PlantNet, 2021)
<i>Melaleuca linariifolia</i>	12.3.7													Flowering has been recorded in Spring – Summer (PlantNet, 2021)
<i>Melaleuca trichostachya</i>	12.3.7													Flowering has been recorded in Summer (PlantNet, 2021)
<i>Melaleuca viminalis</i>	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 lucidum.*

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

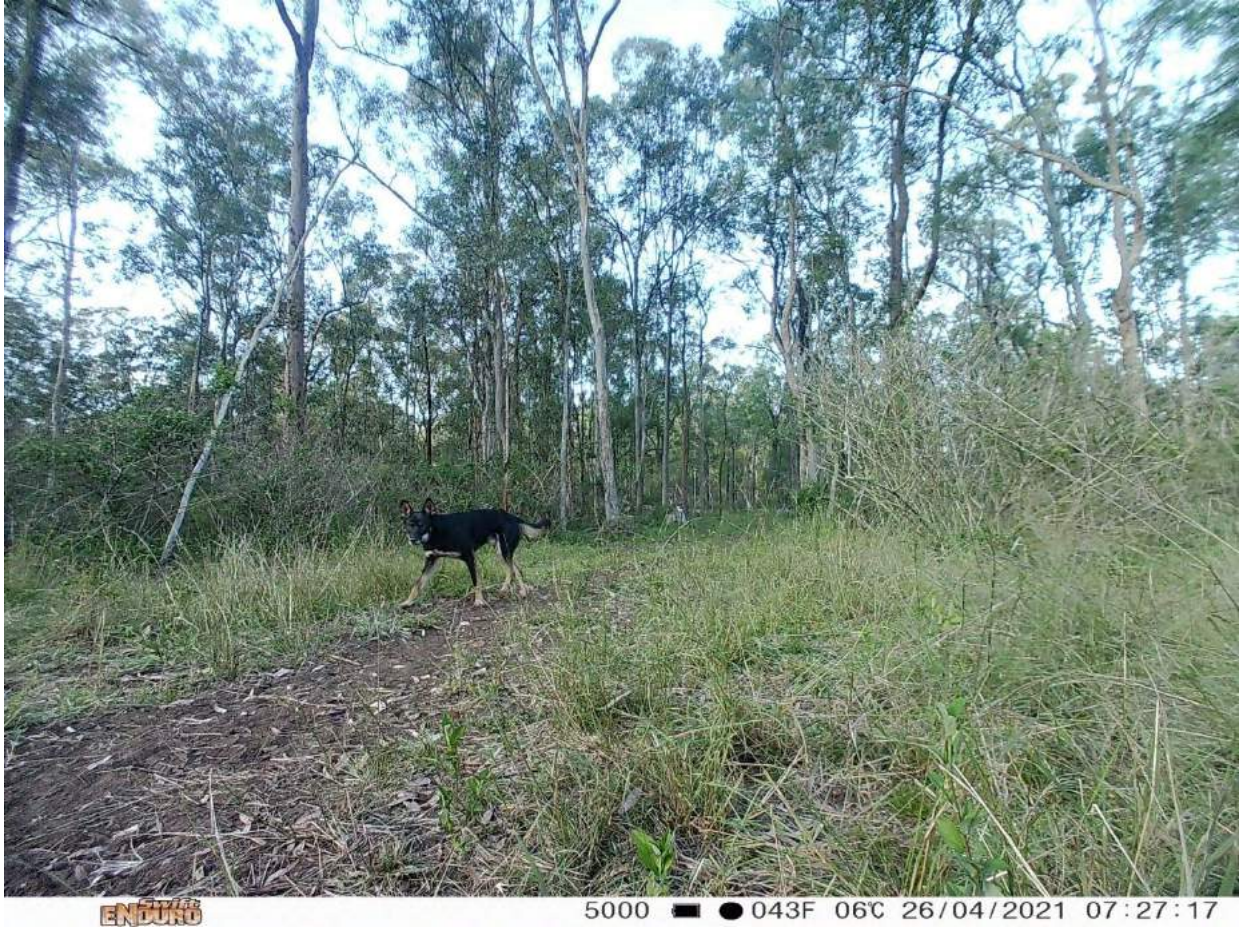


PLATE 2. WILD DOG RECORDED AT SITE C7

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 lucidum**). As noted in section 2.2.6, impenetrable thickets of *L.lucidum* 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.



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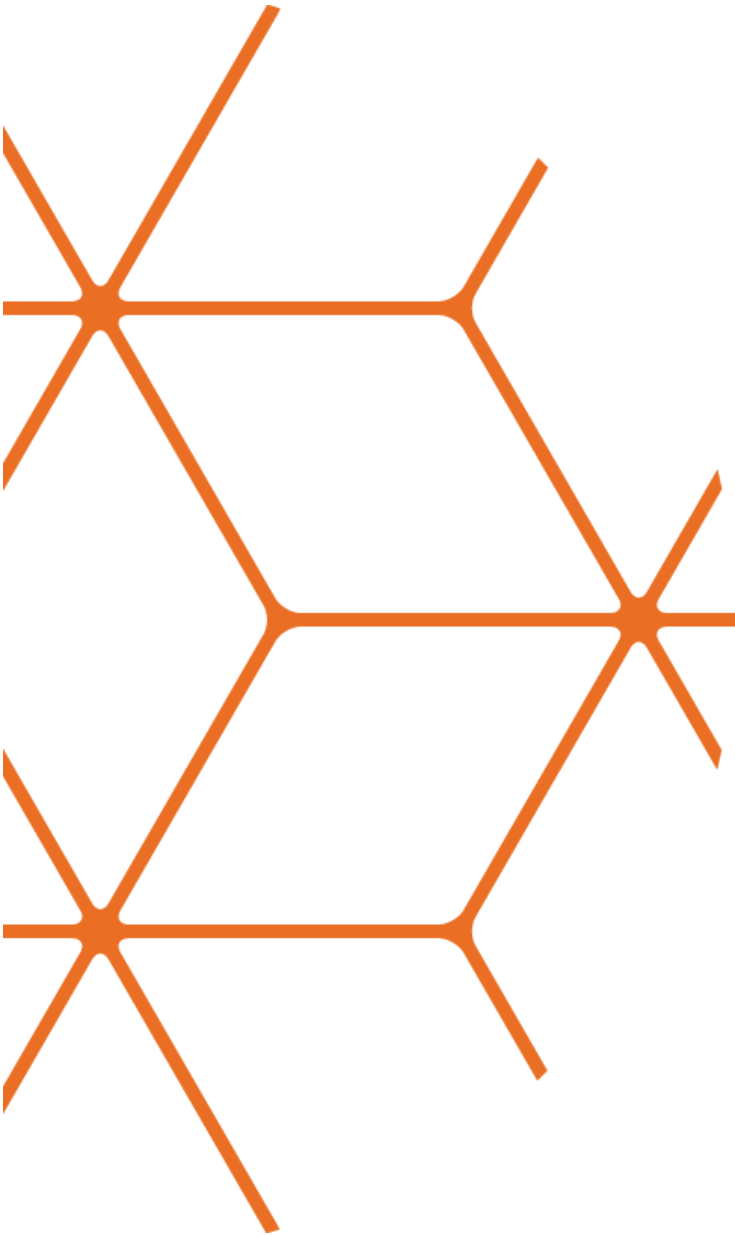
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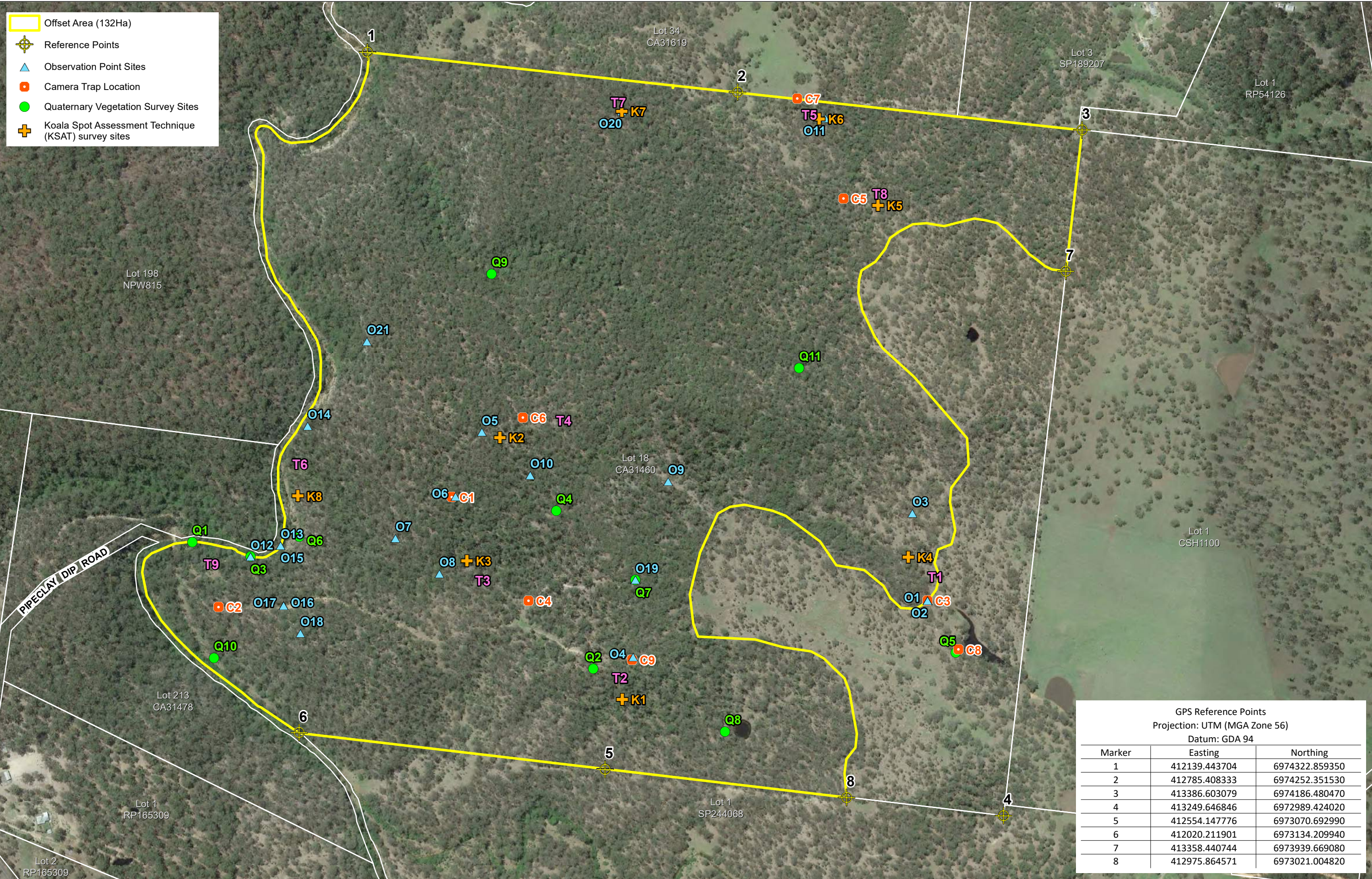
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APPENDIX A

Site Locality Plan





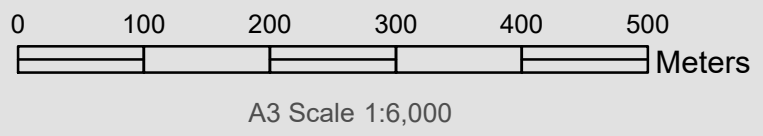
- Offset Area (132Ha)
- ⊕ Reference Points
- ▲ Observation Point Sites
- Camera Trap Location
- Quaternary Vegetation Survey Sites
- + Koala Spot Assessment Technique (KSAT) survey sites

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

File: 2215-Meads-Site-Localty-210729



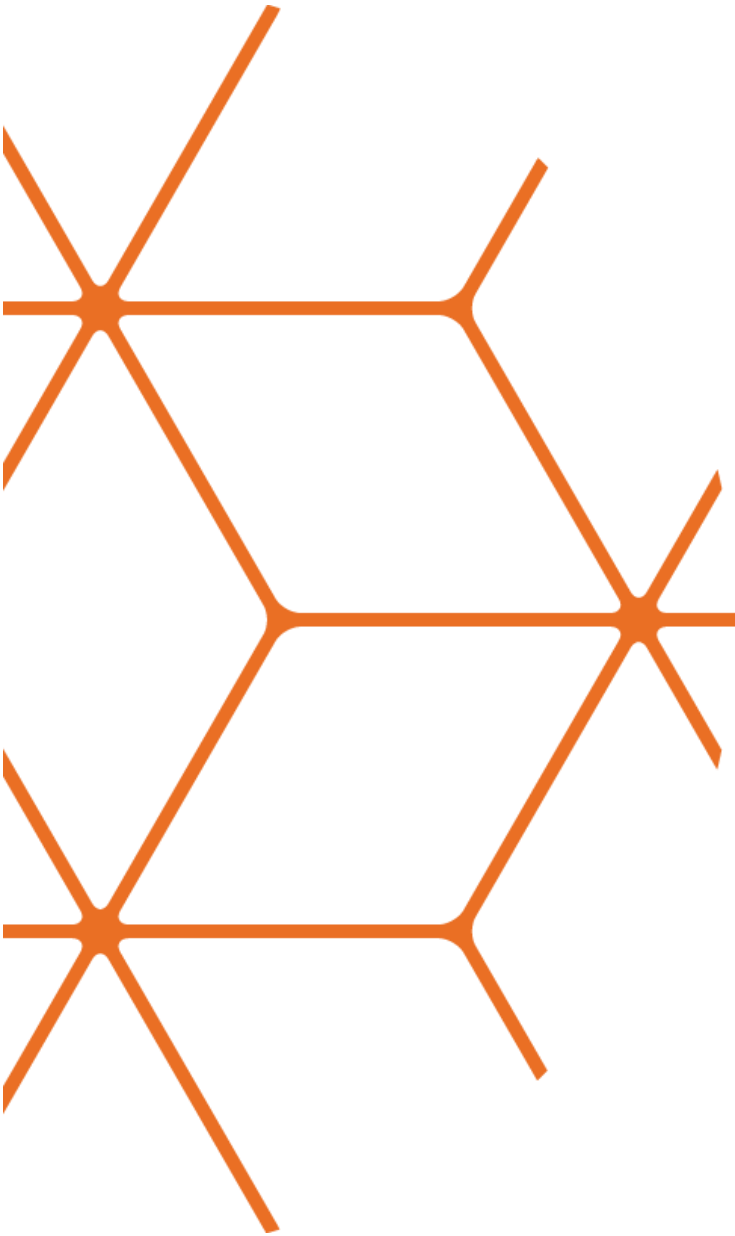
SITE LOCALITY PLAN - LOT 18CA31460



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

APPENDIX B

Approval Notice





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.

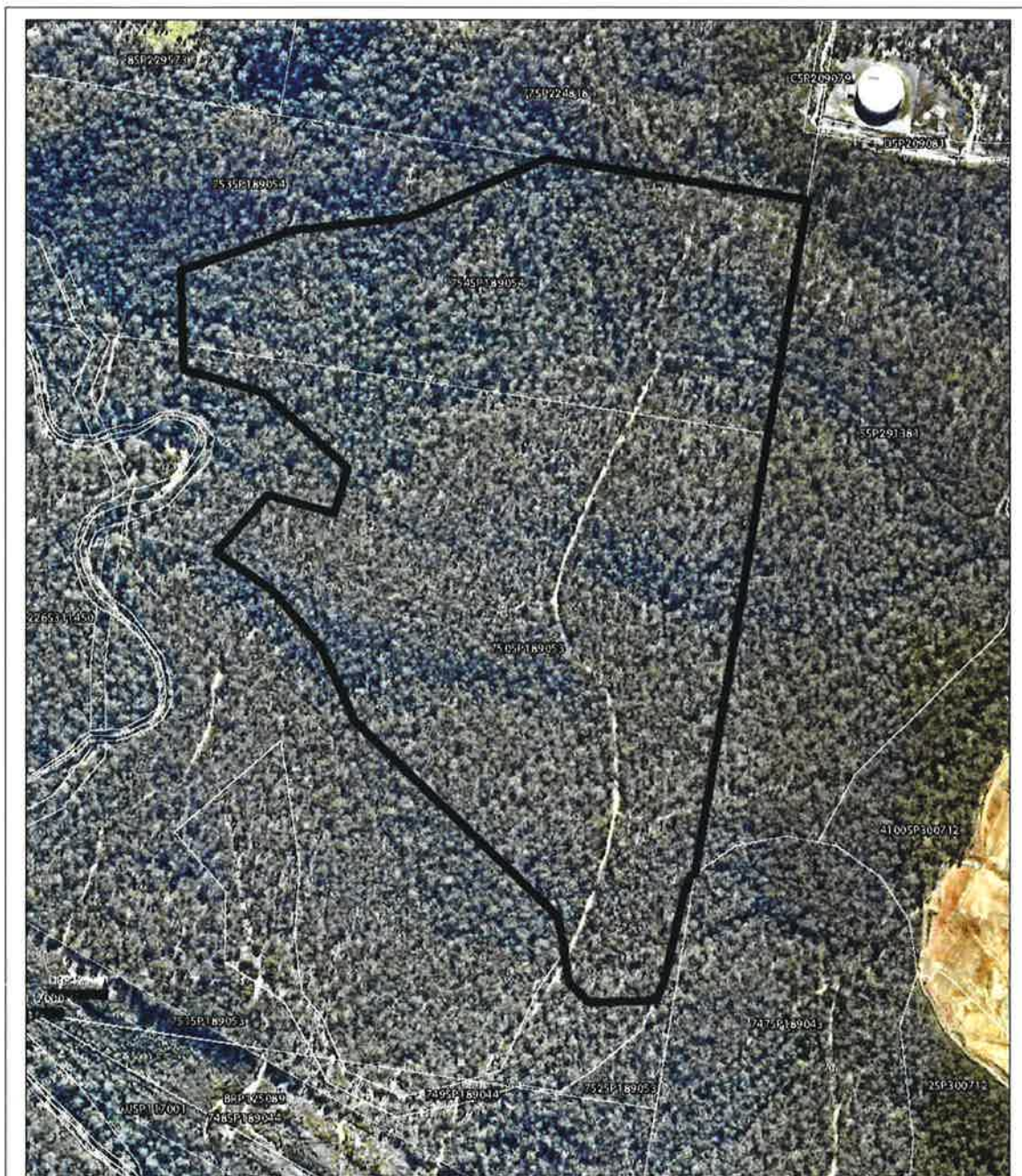
Year 4 means the period within 4 years from the date this of approval.





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

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

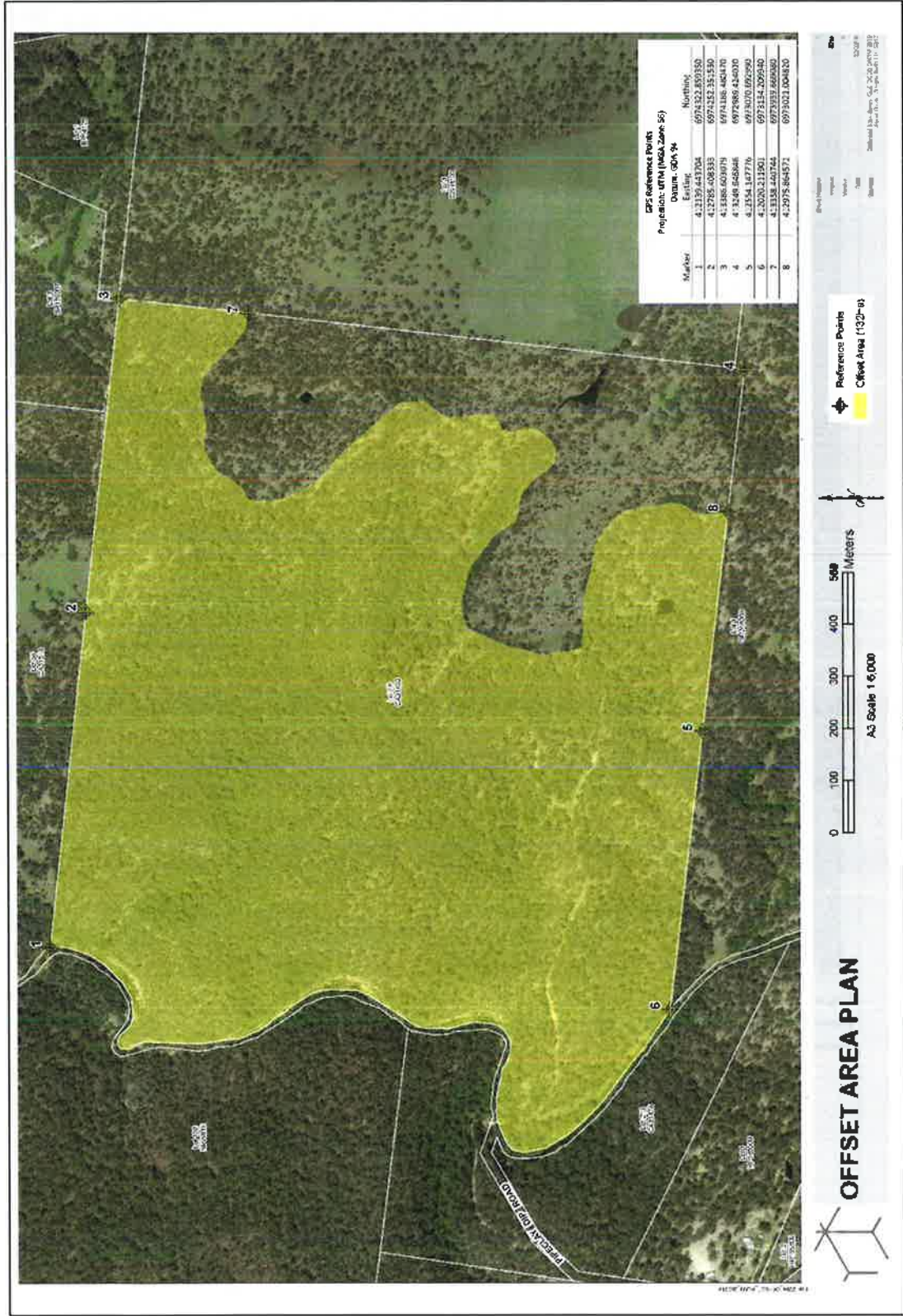
Map – Development area – aerial



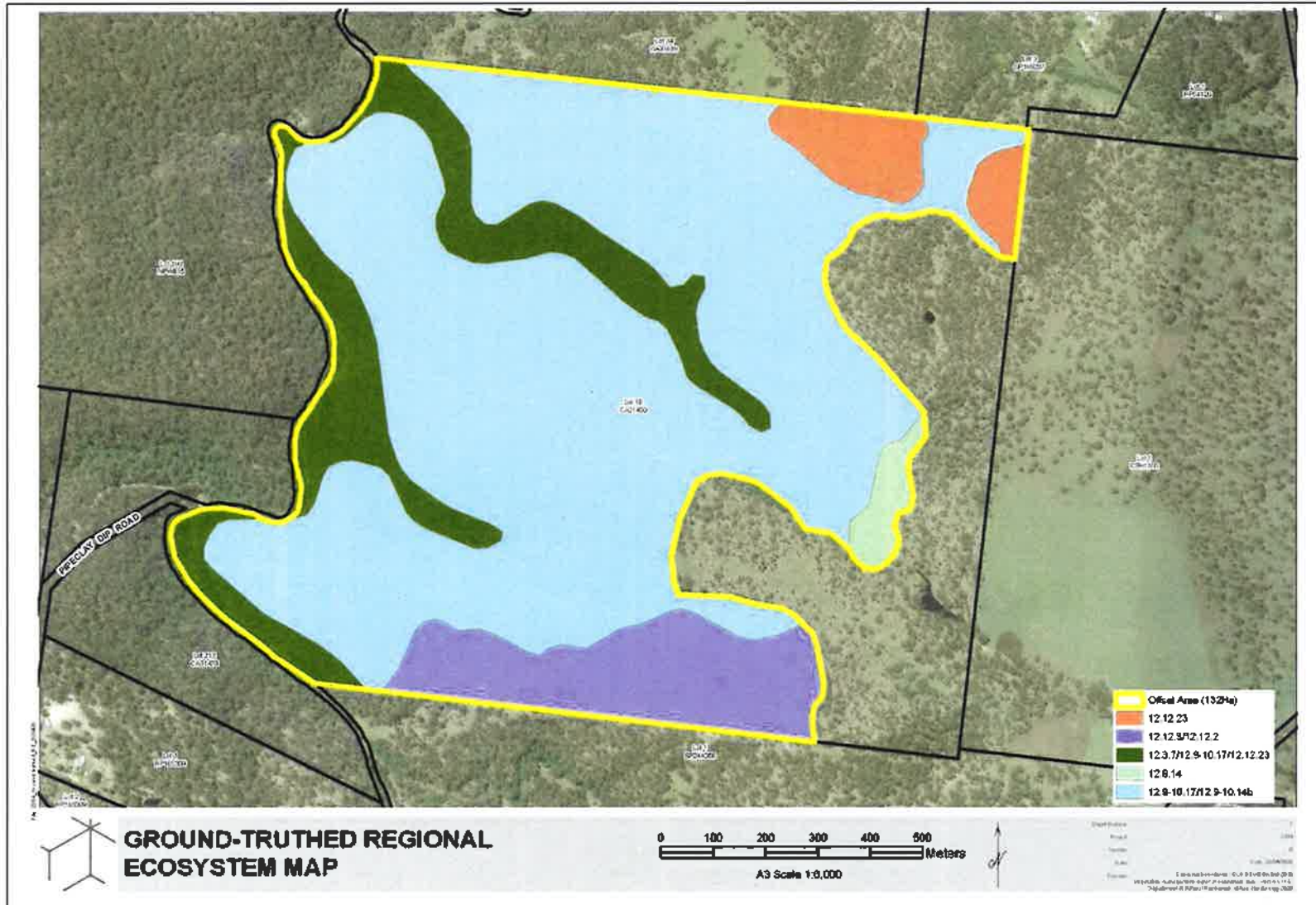
<p>Legend</p> <p> Referral area</p> <p> Qld DCCB</p>	<p>Woogaroo Heights Referral Area (Aerial)</p>	
	<p>File ref. 7927 E Figure 2 Site Aerial B Date 6/11/2019 Project Woogaroo Heights, Springfield</p> <p>0 50 100 200 300 m</p> <p>Scale (A4): 1:7,000 (GDA 1994 MGA Z56)</p> <p></p>	<p> saunders havill group</p> <p><small>THIS PLAN HAS BEEN PREPARED BY THE GROUP FOR THE USE OF THE SAUNDERS HAVILL GROUP AND DOES NOT REPRESENT THE GROUP'S LIABILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THIS DRAWING BY ANY THIRD PARTY.</small></p>

Layer Sources: ©CDB (DNRM 2013), Aerial) (Kearmap 2019)

Map – The Meads offset site – aerial

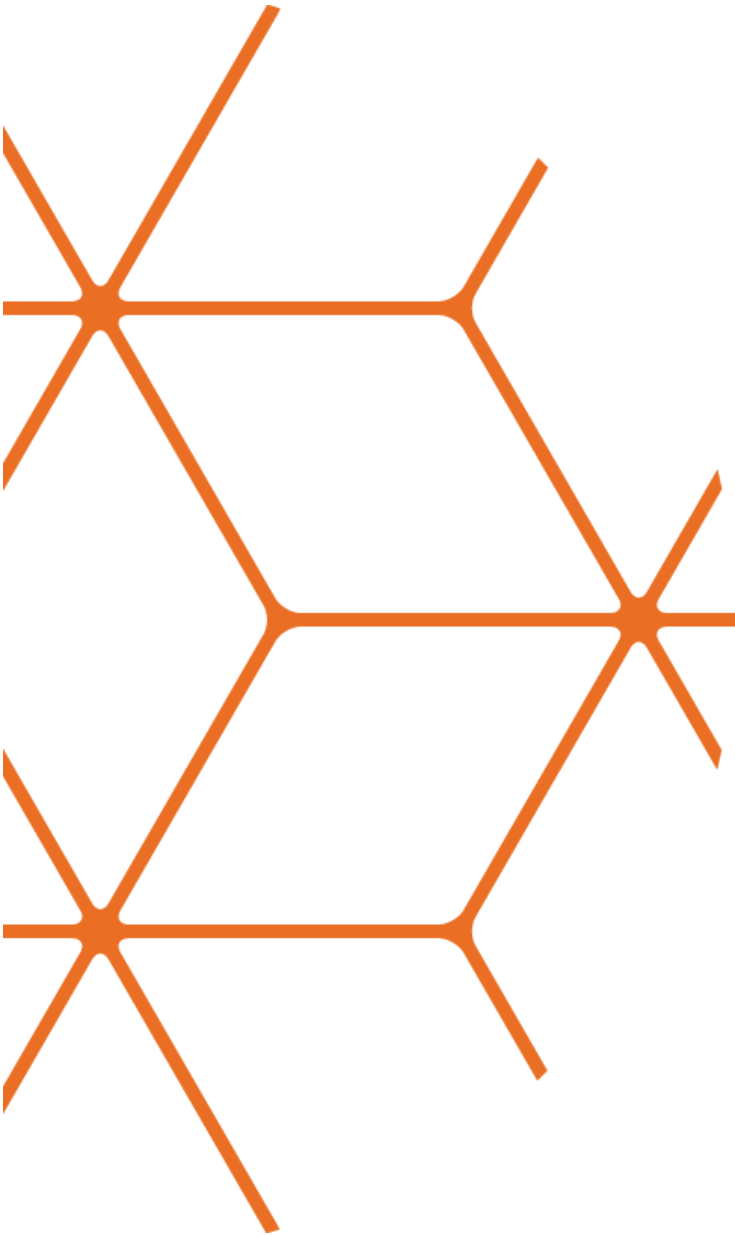


Map – The Meads offset site – Regional Ecosystems



APPENDIX C

Declared Area Map



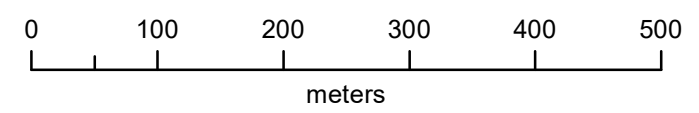


Declared Area Map

DAM 2020/014171

LOT on PLAN
18CA31460

Sheet 1 of 2



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

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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.



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:

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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

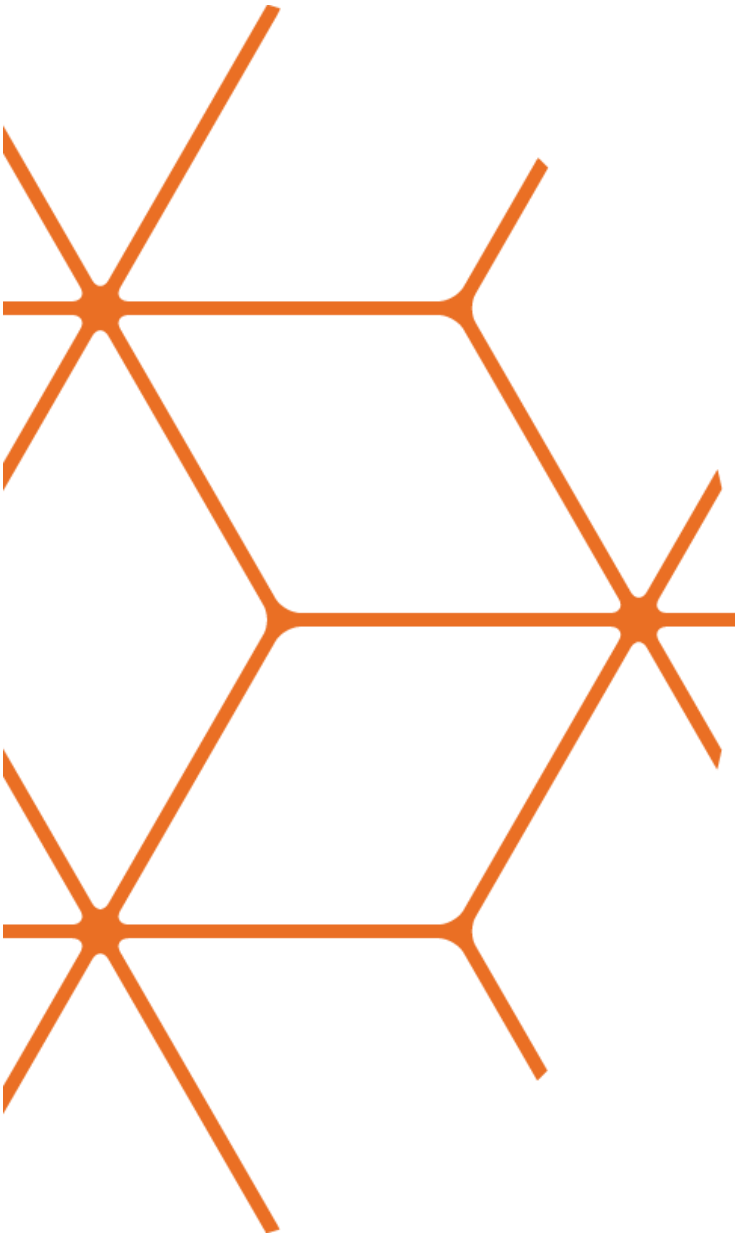
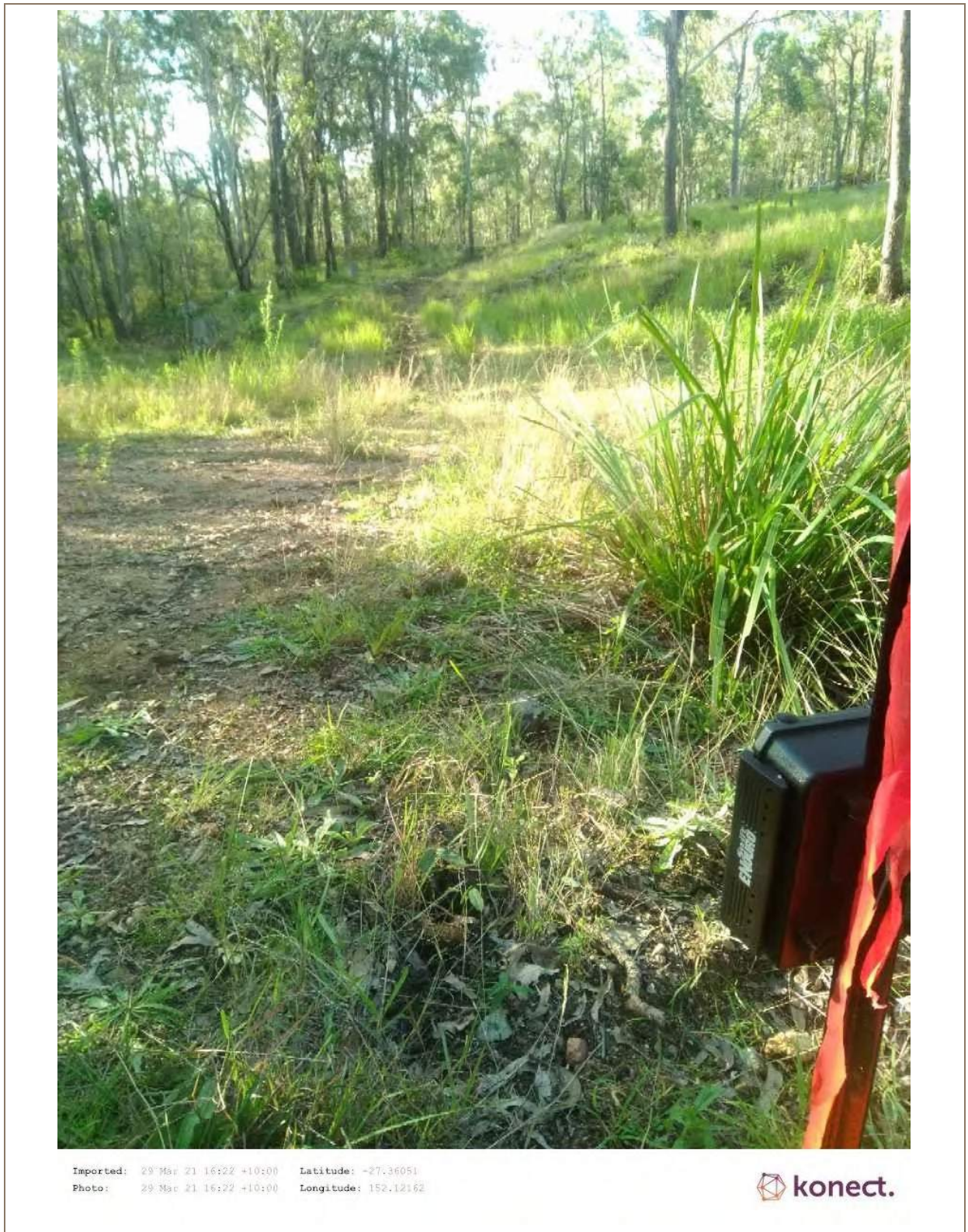




PHOTO NO. 1 – CAMERA TRAP AT SITE C1



Imported: 29 Mar 21 16:22 +10:00 Latitude: -27.36051
Photo: 29 Mar 21 16:22 +10:00 Longitude: 152.12162



PHOTO NO. 2 – CAMERA TRAP AT C3



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



Imported: 30 Mar 21 10:20 +10:00 Latitude: -27.36124
Photo: 30 Mar 21 10:20 +10:00 Longitude: 152.11662



PHOTO NO. 4 – SITE T2 AT 100M



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



Imported: 30 Mar 21 11:43 +10:00 Latitude: -27.35938
Photo: 30 Mar 21 11:43 +10:00 Longitude: 152.11302



PHOTO NO. 6 – T3 FROM 100M



Imported: 30 Mar 21 14:31 +10:00 Latitude: -27.35819
Photo: 30 Mar 21 14:31 +10:00 Longitude: 152.11455



PHOTO NO. 7 – T4 AT 100M



Imported: 30 Mar 21 16:10 +10:00 Latitude: -27.35255
Photo: 30 Mar 21 16:10 +10:00 Longitude: 152.12032



PHOTO NO. 8 – T5 AT 100M



Imported: 31 Mar 21 10:47 +10:00 Latitude: -27.35792
Photo: 31 Mar 21 10:47 +10:00 Longitude: 152.11046



PHOTO NO. 9 – T6 AT 50M LOOKING TO 0M



PHOTO NO. 10 – T6 AT 100M

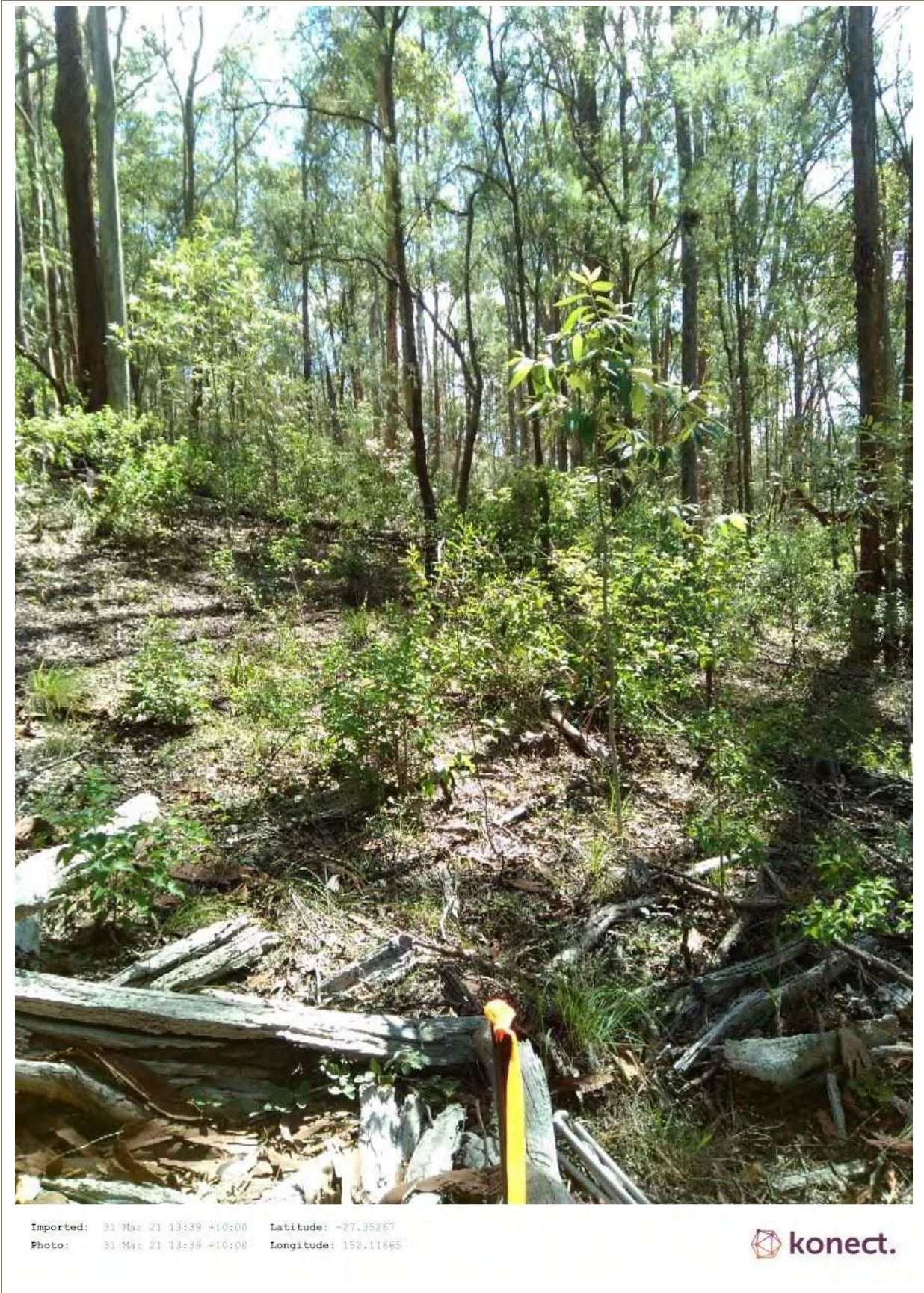


PHOTO NO. 11 – T7 AT 0M



Imported: 31 Mar 21 14:38 +10:00 Latitude: -27.35997
Photo: 31 Mar 21 14:38 +10:00 Longitude: 152.12160

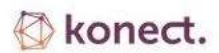


PHOTO NO. 12 – T8 FROM 100M



Imported: 31 Mar 21 08:33 +10:00 Latitude: -27.35929
Photo: 31 Mar 21 08:13 +10:00 Longitude: 152.10853



PHOTO NO. 13 – T9 INTO BROAD LEAVED PRIVET THICKET



Imported: 30 Mar 21 10:50 +10:00 Latitude: -27.36104
Photo: 30 Mar 21 10:50 +10:00 Longitude: 152.11633



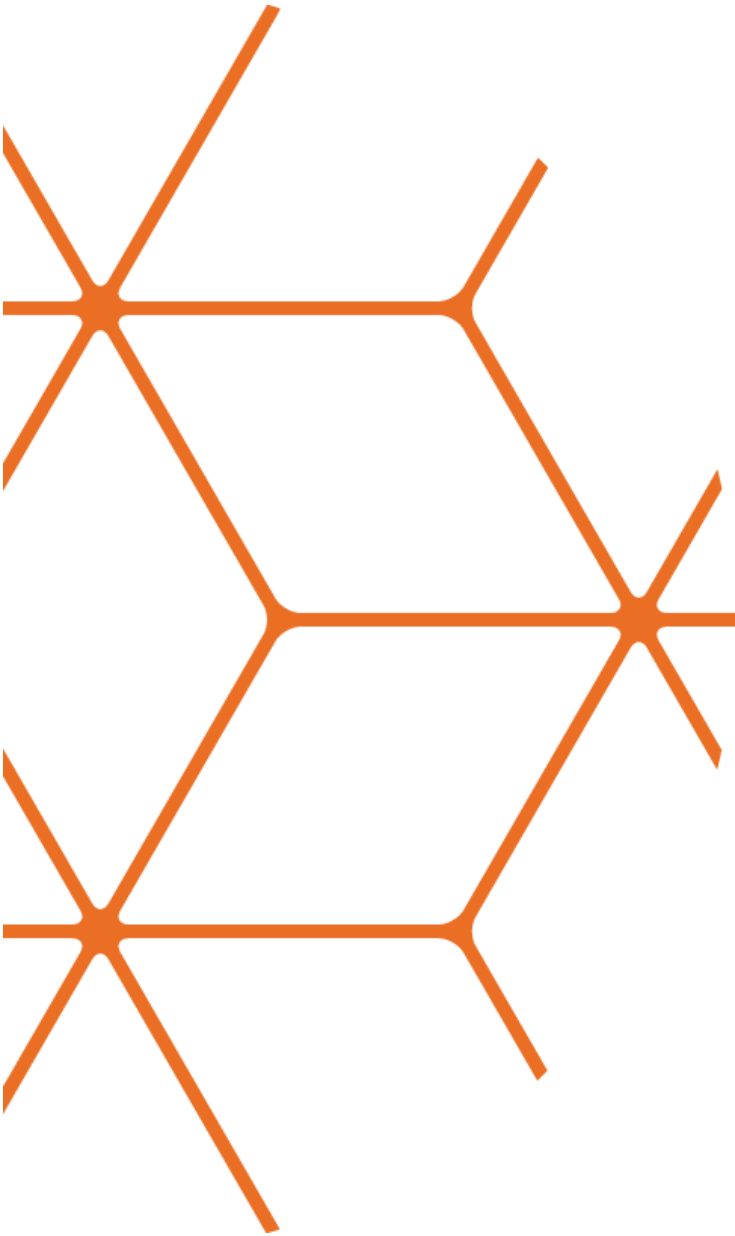
PHOTO NO. 14 – REPRESENTATIVE LANTANA CAMARA THICKET AT SITE 04

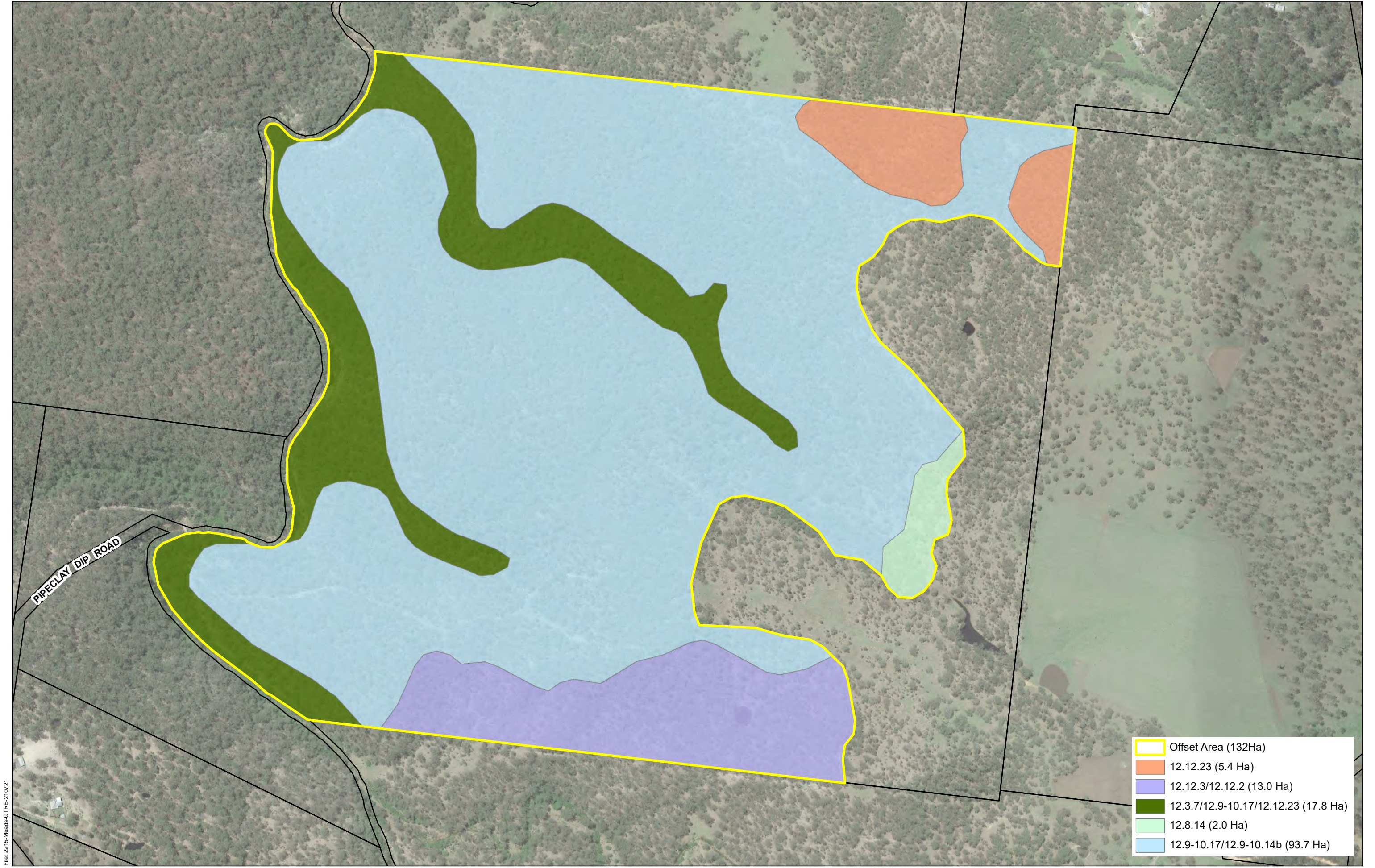


PHOTO 15 – REPRESENTATIVE SCAT AND SCRATCHES AT T4

APPENDIX E

Regional Ecosystem Map



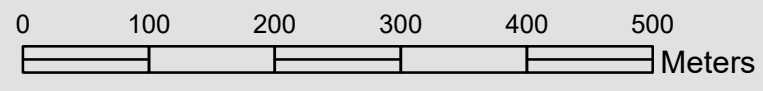


File: 2215-Meads-GTRE-210721

	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)



GROUND-TRUTHED REGIONAL ECOSYSTEM MAP



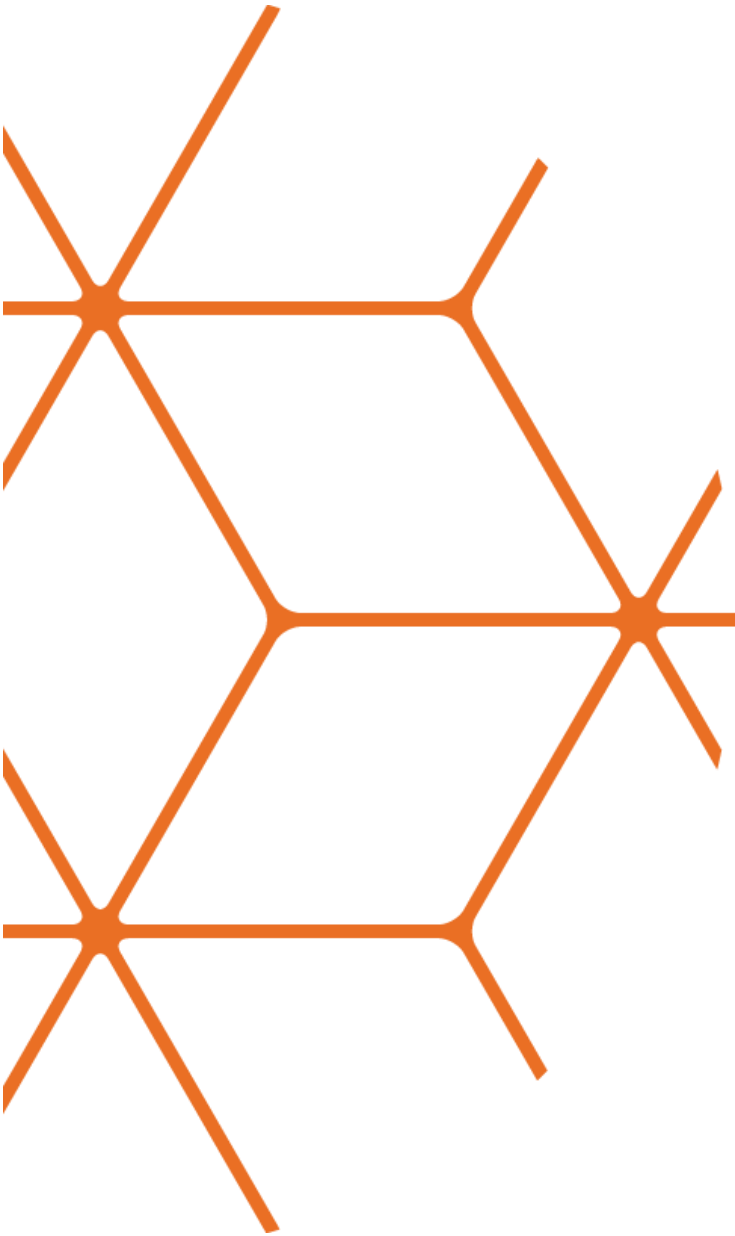
A3 Scale 1:6,000



Sheet Number:	1
Project:	2215
Version:	0
Date:	21/07/2021
Sources:	Cadastral boundaries: OLD 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	0m Mark	Zone	Easting	Northing
WGS 84	<input type="checkbox"/>	56	152.1216	-27.3596
GDA 94		56		
	50m Mark	Zone	Easting	Northing
	<input type="checkbox"/>	56		
Plot bearing			Recorders	BC

Site description and Location (including details of discrete polygons within the assessment unit)
 Eucalyptus eugenoides, 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	<i>Eucalyptus melliodora</i>	Common Name
Scientific Name	<i>Eucalyptus crebra</i>	Common Name
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name
Scientific Name	<i>Angophora subvelutina</i>	Common Name
Scientific Name	<i>Brachychiton populneus</i>	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	<i>Alphitonia excelsa</i>	Common Name
Scientific Name	<i>Allocasuarina torulosa</i>	Common Name
Scientific Name	<i>Acacia fimbriata</i>	Common Name
Scientific Name		Common Name
Scientific Name		Common Name
Scientific Name		Common Name
Scientific Name		Common Name
Scientific Name		Common Name

Grass species richness:

Total number of species	2	
Scientific Name	<i>Themeda triandra</i>	Common Name
Scientific Name	<i>Imperata cylindrica</i>	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	<i>Breynia oblongifolia</i>	Common Name	
Scientific Name	<i>Gahnia aspera</i>	Common Name	
Scientific Name	<i>Solanum stelligerum</i>	Common Name	
Scientific Name	<i>Dianella caerulea</i>	Common Name	
Scientific Name	<i>Hardenbergia violacea</i>	Common Name	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	
Scientific Name		Common Name	

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

Total percentage cover within plot	19.00%		
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Bidens pilosa</i>	Common Name	
Scientific Name	<i>Solanum nigrum</i>	Common Name	
Scientific Name	<i>Senna pendula</i>	Common Name	
Scientific Name	<i>Opuntia tomentosa</i>	Common Name	
Scientific Name	<i>Conyza sumatrensis</i>	Common Name	
Scientific Name	<i>Gomphocarpus physocarpus</i>	Common Name	
Scientific Name	<i>Hypochaeris radicata</i>	Common Name	
Scientific Name	<i>Ligustrum lucidum</i>	Common Name	
Scientific Name		Common Name	

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

Total Length of Coarse 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	<i>Phascogalea cinerea</i>	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
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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
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ii) Standard Assessment (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Meads	Date	30/03/21
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Assessment Unit: 2	Assessment Unit Area (ha) 10	RE 12.12.2	Bioregion Number Southeast Queensland
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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	<input type="checkbox"/>	S6	152.1156	-27.3612
GDA 94	<input type="checkbox"/>	Zone	Easting	Northing
	50m Mark			
	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. tindalliae, 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	<i>Eucalyptus pilularis</i>	Common Name
Scientific Name	<i>E. microcorys</i>	Common Name
Scientific Name	<i>E. propinqua</i>	Common Name
Scientific Name	<i>Angophora leiocarpa</i>	Common Name
Scientific Name	<i>Corymbia citriodora</i>	Common Name
Scientific Name	<i>E. tereticornis</i>	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	<i>Alphitonia excelsa</i>	Common Name
Scientific Name	<i>Allocasuarina torulosa</i>	Common Name
Scientific Name	<i>Brachychiton populneus</i>	Common Name
Scientific Name	<i>Acacia longissima</i>	Common Name
Scientific Name	<i>A. melanoxylon</i>	Common Name
Scientific Name	<i>E. pilularis</i>	Common Name
Scientific Name		Common Name
Scientific Name		Common Name
Scientific Name		Common Name
Scientific Name		Common Name

Grass species richness:

Total number of species	2	
Scientific Name	<i>Themeda australis</i>	Common Name
Scientific Name	<i>Imperata cylindrica</i>	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	<i>Bursaria spinosa</i>	Common Name
Scientific Name	<i>Breynia oblongifolia</i>	Common Name
Scientific Name		Common Name
Scientific Name		Common Name
Scientific Name		Common Name
Scientific Name		Common Name

Scientific Name	<i>Goodenia rotundifolia</i>	Common Name	
Scientific Name	<i>Desmodium rhytidophyllum</i>	Common Name	
Scientific Name	<i>Persoonia sericea</i>	Common Name	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	
Scientific Name	<i>Pomax umbellata</i>	Common Name	

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

Total percentage cover within plot		14.50%	
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Ligustrum lucidum</i>	Common Name	
Scientific Name	<i>Opuntia stricta</i>	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 Coarse 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
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Number of ecologically dominant layer species regenerating:	17
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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	<i>Phascogalea cinerea</i>	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
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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	0m Mark	Zone	Easting	Northing
WGS 84	<input type="checkbox"/>	S6	152.1131	-27.3594
GDA 94	<input type="checkbox"/>	Zone	Easting	Northing
	50m Mark			
	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. (BVGIM: 8b)

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

Tree species richness:			
Total number of species			6
Scientific Name	<i>Eucalyptus pilularis</i>	Common Name	
Scientific Name	<i>Trema tomentosa</i>	Common Name	
Scientific Name	<i>E. microcorys</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Allocasuarina torulosa</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	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	<i>Allocasuarina torulosa</i>	Common Name	
Scientific Name	<i>L.confertus</i>	Common Name	
Scientific Name	<i>Trema tomentosa</i>	Common Name	
Scientific Name	<i>E.pilularis</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species			2
Scientific Name	<i>Imperata cylindrica</i>	Common Name	
Scientific Name	<i>Themeda australis</i>	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	<i>Solanum stelligerum</i>	Common Name	
Scientific Name	<i>Desmodium rhytidophyllum</i>	Common Name	

Scientific Name	<i>Gahnia aspera</i>	Common Name	
Scientific Name	<i>Lomandra multiflora</i>	Common Name	
Scientific Name	<i>Hardenbergia violaceae</i>	Common Name	
Scientific Name	<i>Lepidosperma laterale</i>	Common Name	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	

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

Total percentage cover within plot		75.50%	
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Ligustrum lucidum</i>	Common Name	
Scientific Name	<i>Opuntia sp.</i>	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 Coarse 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)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	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	Phascogale 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
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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
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ii) Standard Assessment (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Meads	Date	30/3/21
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Assessment Unit: 4	Assessment Unit Area (ha) 35	RE 12.9-10.17	Bioregion Number Southeast Queensland
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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 GDA 94		S6	152.1146	-27.3575
	50m Mark	Zone	Easting	Northing

Plot bearing Recordors

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	<i>Eucalyptus microcorys</i>	Common Name	
Scientific Name	<i>E. major</i>	Common Name	
Scientific Name	<i>E. propinqua</i>	Common Name	
Scientific Name	<i>E. tindaliae</i>	Common Name	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	
Scientific Name	<i>E. tereticornis</i>	Common Name	
Scientific Name	<i>Angophora leiocarpa</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species			6
Scientific Name	<i>Allocasuarina littoralis</i>	Common Name	
Scientific Name	<i>A. leiocarpa</i>	Common Name	
Scientific Name	<i>L.confertus</i>	Common Name	
Scientific Name	<i>Acacia melanoxylon</i>	Common Name	
Scientific Name	<i>Breyenia oblongifolia</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species			4
Scientific Name	<i>Themeda australis</i>	Common Name	
Scientific Name	<i>Entolasia stricta</i>	Common Name	
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	
Scientific Name	<i>Imperata cylindrica</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species			11
Scientific Name	<i>Breyenia oblongifolia</i>	Common Name	Lepidosperma laterale
Scientific Name	<i>Solanum stelligerum</i>	Common Name	Senecio sp
Scientific Name	<i>Gahnia aspera</i>	Common Name	Pomax umbellata
Scientific Name	<i>Hardenbergia violaceae</i>	Common Name	Persoonia sp.

Scientific Name	<i>Desmodium rhytidophyllum</i>	Common Name	
Scientific Name	<i>Persoonia sericea</i>	Common Name	
Scientific Name	<i>Smilax australis</i>	Common Name	

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

Total percentage cover within plot		27.00%	
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Passiflora suberosa</i>	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 Coarse 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)

Native perennial grass cover	Quadrat 1 5.00%	Quadrat 2 5.00%	Quadrat 3 40.00%	Quadrat 4 5.00%	Quadrat 5 5.00%	Average 12.00%
Organic Litter	Quadrat 1 95.00%	Quadrat 2 90.00%	Quadrat 3 80.00%	Quadrat 4 90.00%	Quadrat 5 80.00%	Average 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	Phascogale 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
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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	0m Mark	Zone	Easting	Northing
WGS 84			152.1146	-27.3525
GDA 94	50m Mark	Zone	Easting	Northing
	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. eugenoides. 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	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	
Scientific Name	<i>E. crebra</i>	Common Name	
Scientific Name	<i>E. propinqua</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Allocasuarina torulosa</i>	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	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name	<i>L.confertus</i>	Common Name	
Scientific Name	<i>A.torulosa</i>	Common Name	
Scientific Name	<i>E. crebra</i>	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	<i>Themeda australis</i>	Common Name	
Scientific Name	<i>Imperata cylindrica</i>	Common Name	
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species			8
Scientific Name	<i>Breyenia oblongifolia</i>	Common Name	Dianella caerulea
Scientific Name	<i>Gahnia aspera</i>	Common Name	
Scientific Name	<i>Persoonia sp</i>	Common Name	
Scientific Name	<i>Desmodium rhytophyllum</i>	Common Name	
Scientific Name	<i>Solanum stelligerum</i>	Common Name	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	
Scientific Name	<i>Alchornea ilicifolia</i>	Common Name	

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

Total percentage cover within plot		36.50%
Scientific Name	<i>Lantana camara</i>	Common Name
Scientific Name	<i>Ligustrum lucidum</i>	Common Name
Scientific Name	<i>Opuntia tomentosa</i>	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):		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
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Number of ecologically dominant layer species regenerating:	33
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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
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ii) Standard Assessment (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Meads	Date	31/03/21
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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	0m Mark	Zone	Easting	Northing
WGS 84	<input type="checkbox"/>	S6	152.1104	-27.3584
GDA 94	<input type="checkbox"/>	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	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Eucalyptus major</i>	Common Name	
Scientific Name	<i>Eucalyptus biturbinata</i>	Common Name	
Scientific Name	<i>Eucalyptus carnea</i>	Common Name	
Scientific Name	<i>Eucalyptus acmenoides</i>	Common Name	
Scientific Name	<i>Allocasuarina littoralis</i>	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	<i>Allocasuarina littoralis</i>	Common Name	
Scientific Name	<i>Acacia sp.</i>	Common Name	
Scientific Name	<i>Trema tomentosa</i>	Common Name	
Scientific Name	<i>E.tereticornis</i>	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	<i>Themeda australis</i>	Common Name	
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	
Scientific Name	<i>Panicum sp.</i>	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	<i>Pomax umbellata</i>	Common Name	
Scientific Name	<i>Gahnia aspera</i>	Common Name	
Scientific Name	<i>Trema tomentosa</i>	Common Name	

Scientific Name	<i>Lomandra longifolia</i>	Common Name	
Scientific Name	<i>Dianella caerulea</i>	Common Name	
Scientific Name	<i>Smilax australis</i>	Common Name	
Scientific Name		Common Name	

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

Total percentage cover within plot		61.50%
Scientific Name	<i>Lantana camara</i>	Common Name
Scientific Name	<i>L. montevidensis</i>	Common Name
Scientific Name	<i>Ligustrum lucidum</i>	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 Coarse 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 0.00%	Quadrat 2 0.00%	Quadrat 3 5.00%	Quadrat 4 20.00%	Quadrat 5 30.00%	Average 11.00%
Organic Litter	Quadrat 1 80.00%	Quadrat 2 80.00%	Quadrat 3 85.00%	Quadrat 4 70.00%	Quadrat 5 10.00%	Average 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	Phascogalea 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
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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
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ii) Standard Assessment (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Meads	Date	31/3/21
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Assessment Unit: 7	Assessment Unit Area (ha) 35	RE 12.9-10.17	Bioregion Number Southeast Queensland
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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	<input type="checkbox"/>	S6	152.1168	-27.3526
GDA 94	<input type="checkbox"/>	Zone	Easting	Northing
	50m Mark			

Plot bearing Recordors

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. proplinqua. 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	<i>Corymbia citriodora</i>	Common Name	
Scientific Name	<i>Angophora leiocarpa</i>	Common Name	
Scientific Name	<i>Eucalyptus tindaliae</i>	Common Name	
Scientific Name	<i>E. carnea</i>	Common Name	
Scientific Name	<i>E. acmenodes</i>	Common Name	
Scientific Name	<i>E. siderophloia</i>	Common Name	
Scientific Name	<i>E. microcorys</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species			3
Scientific Name	<i>Allocasuarina littoralis</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species			2
Scientific Name	<i>Themeda australis</i>	Common Name	
Scientific Name	<i>Cymbopogon refractus</i>	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	<i>Persoonia sericea</i>	Common Name	Desmodium rhytidophyllum
Scientific Name	<i>Lepidosperma laterale</i>	Common Name	
Scientific Name	<i>Goodenia rotundifolia</i>	Common Name	
Scientific Name	<i>Breyenia oblongifolia</i>	Common Name	

Scientific Name	<i>Pomax umbellata</i>	Common Name	
Scientific Name	<i>Gahnia aspera</i>	Common Name	
Scientific Name	<i>Smilax australis</i>	Common Name	

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

Total percentage cover within plot		18.50%	
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Opuntia stricta</i>	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 Coarse 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
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Number of ecologically dominant layer species regenerating:	13
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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	Phascogale 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
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ii) Standard Assessment (COMPLETE REMAINDER OF FORM)

Part C - Site Data

Property	Meads	Date	31/3/21
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Assessment Unit: 8	Assessment Unit Area (ha) 10	RE 12.12.3	Bioregion Number Southeast Queensland
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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		S6	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. eugenoides*. 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	<i>Corymbia citrodora</i>	Common Name	
Scientific Name	<i>Angophora leiocarpa</i>	Common Name	
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>E. crebra</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>E. propinqua</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name	<i>Allocasuarina littoralis</i>	Common Name	
Scientific Name	<i>A. torulosa</i>	Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species			5
Scientific Name	<i>L.confertus</i>	Common Name	
Scientific Name	<i>A. excelsa</i>	Common Name	
Scientific Name	<i>A.littoralis</i>	Common Name	
Scientific Name	<i>A.torulosa</i>	Common Name	
Scientific Name	<i>Acacia sp.</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species			2
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	
Scientific Name	<i>Themeda australis</i>	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	<i>Solanum nigrum</i>	Common Name	<i>Alchornea illicifolia</i>
Scientific Name	<i>Desmodium rhytaphyllum</i>	Common Name	<i>Brachychyton populnus</i>
Scientific Name	<i>Breyenia oblongifolia</i>	Common Name	<i>Senecio sp.</i>
Scientific Name	<i>Hargenbergia violaceae</i>	Common Name	<i>Acacia sp.</i>

Scientific Name	<i>Persoonia sericea</i>	Common Name	Dianella caerulea
Scientific Name	<i>A. excelsa</i>	Common Name	
Scientific Name	<i>Cyprus sp.</i>	Common Name	

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

Total percentage cover within plot		21.50%	
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Bidens pilosa</i>	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 Coarse 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)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	10.00%	40.00%	40.00%	40.00%	25.00%	31.00%
Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	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	Phascogalea 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: 9	Assessment Unit Area (ha) 10	RE 12.3.7	Bioregion Number 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	<input type="checkbox"/>	S6	152.1085	-27.3592
GDA 94	<input type="checkbox"/>	Zone	Easting	Northing
	50m Mark			
	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	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Casuarina cunninghamiana</i>	Common Name	
Scientific Name	<i>E. robusta</i>	Common Name	
Scientific Name	<i>Melaleuca viminalis</i>	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	

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	<i>Ligustrum lucidum</i>	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	
Scientific Name		Common Name	

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

Total Length of Coarse 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	Phascogale 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
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

Requirement	Assessment Unit Number									
	1	2	3	4	5	6	7	8	9	10
Area (ha)	2	10	15	35	5	10	35	10	10	0
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	Southeast Queensland	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	Score	3	5	3	5	3	3	5	5	3	
		- Trees	Score	3	3	5	3	3	3	3	3	2.5	
		- Shrubs	Score	3	3	3	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	Score	5	5	5	5	5	5	5	5	5	
		- Canopy layer	Score	3	3	3	3	3	5	5	5	3	
		- Sub-Canopy Layer	Score										
		- Emergent Layer	Average Score	4	4	4	4	4	5	5	5	4	
4. Tree canopy cover	Score	5	5	5	5	5	5	5	5	2			
- Canopy layer	Score	5	5	5	5	5	5	2	5	0			
- Sub-Canopy Layer	Score												
- Emergent Layer	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			

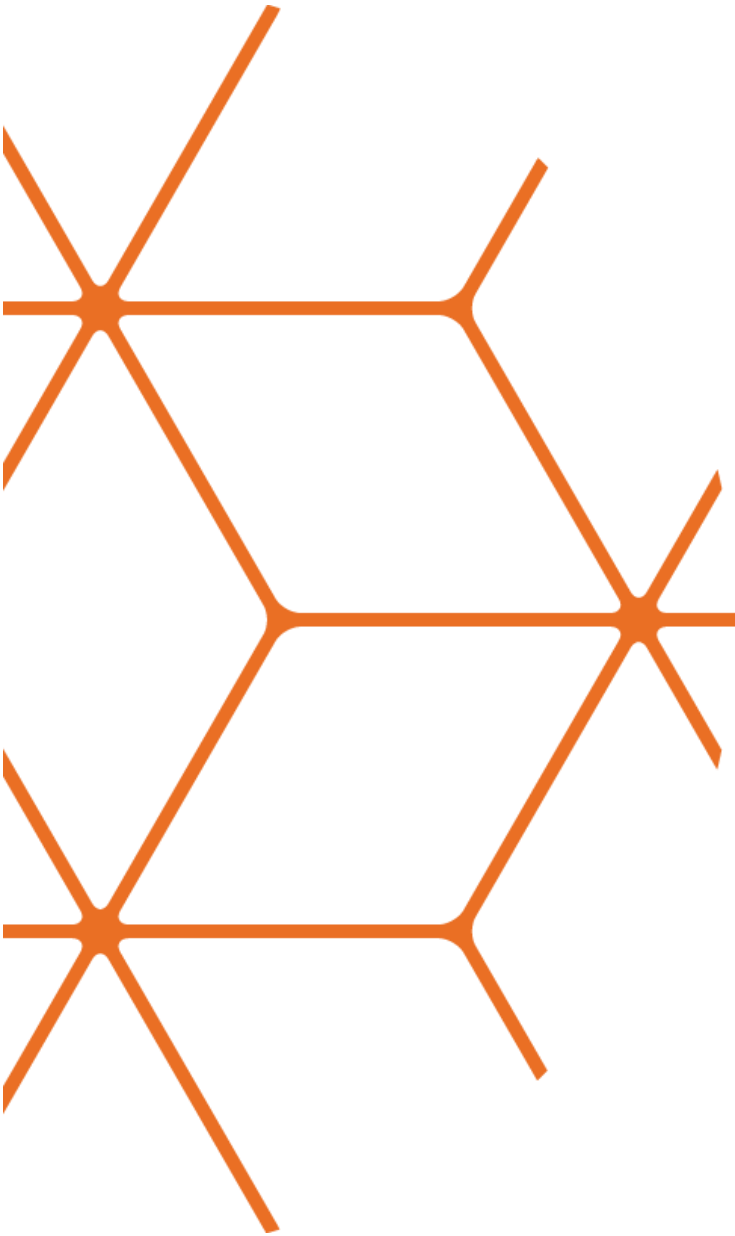
2	Site Context Attributes	11. Size of patch (fragmented)	Score	10	2	10	10	10	10	10	2	2	
		12. Connectedness (fragmented)	Score	5	5	5	5	5	5	5	5	5	
		13. Context (fragmented)	Score	5	5	5	5	5	5	5	0	5	
		14. Distance from water (intact)	Score	0	0	0	0	0	0	0	0	0	
		15. Ecological corridors	Score	6	6	6	6	6	6	6	6	6	

3	Species Habitat Index	16. Threats to species	Score	15	15	7	7	7	7	7	7		
		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	

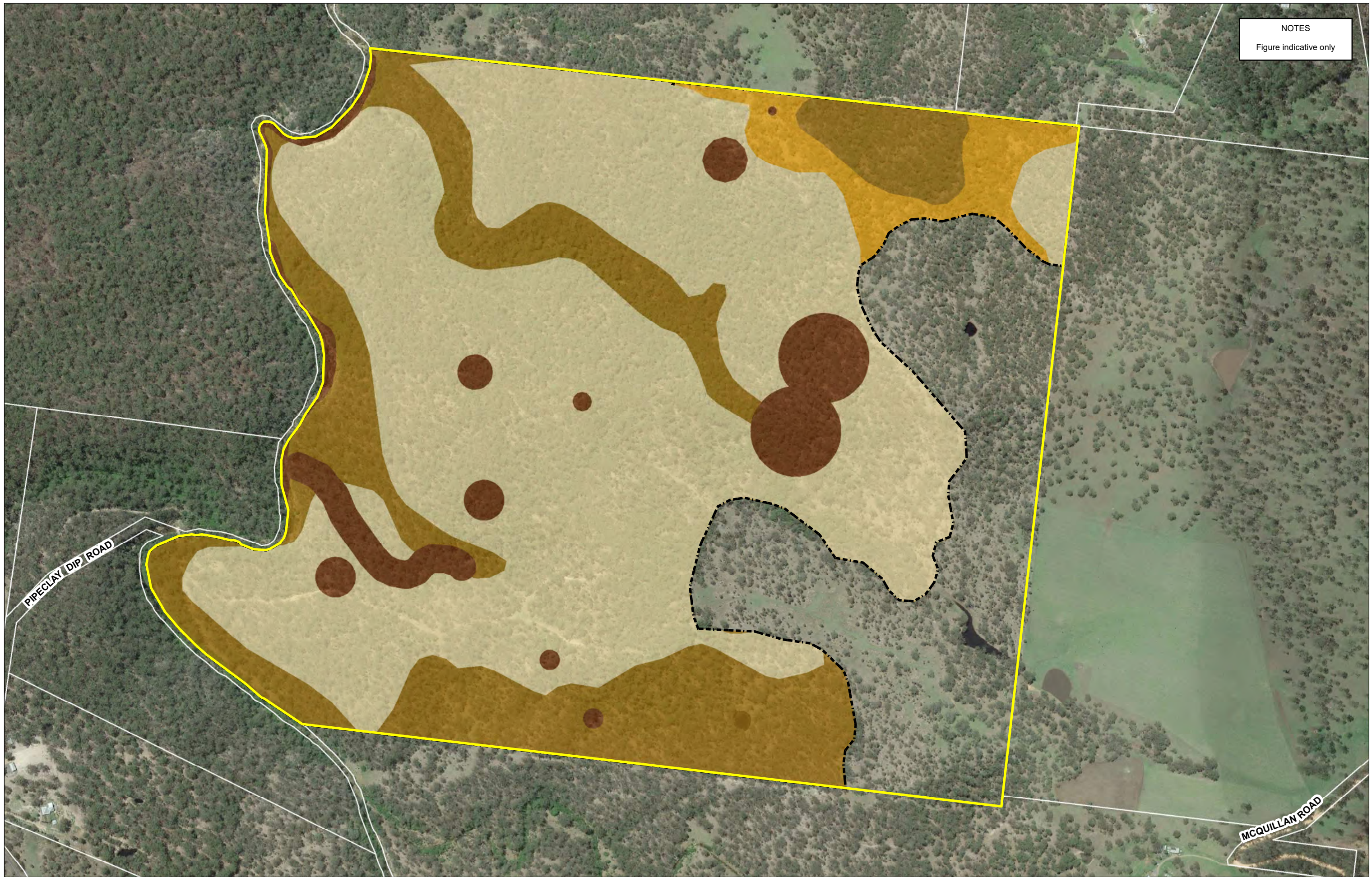
Habitat Quality Score (measured)	119.00	114.00	101.00	118.00	114.00	117.00	112.50	107.00	57.50	
Habitat Quality Score (max)	176.00	176.00	176.00	176.00	176.00	176.00	176.00	176.00	176.00	
Assessment Unit Area (ha)	2.00	10.00	15.00	35.00	5.00	10.00	35.00	10.00	10.00	0.00
Assessment Unit Habitat Quality 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



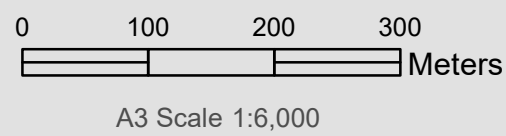
NOTES
Figure indicative only



File: 2215-Meads-Weed-Distribution-210721



WEED DISTRIBUTION (COVER) PLAN



Subject Site	Scattered to Dense, 26-75% cover (5.6 Ha)
Offset Area (132Ha)	Dense, 76-90% cover (32.6 Ha)
Weed Distribution	Impenetrable, >91% cover (8.9 Ha)
Scattered, <25% cover (84.8 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)

Appendix E

Woogaroo Heights Environmental Pre-start Checklist

Woogaroo Heights

Environmental Pre-Start Checklist

Project Area: Woogaroo Heights		Date: 1 February 2022			
Contractor: Shadforth		Construction Stage/ Activity:			
Date work is to start: 7 February 2022		Involving the clearing within the ultimate BEW approval area. The Works Extent is shown in Attachment 1.			
Date work is to cease (estimate): 2 March 2022					
		Compliance			
#	Control Measure	Yes	No	N/A	Comments
1	Is the works extent within the EPBC approved clearing area?	✓			Refer Attachment 2 for the works extent in relation to EPBC approved clearing area.
2	Are clearing extents marked out and fenced? (N.B. Fencing is required as per ICC permits unless instructed otherwise by Council, Fauna Spotter or Environmental Coordinator)	✓			Fencing extents were set out by the project surveyor on 24 January 2022.
3	Has the fencing of clearing extents demarcation been inspected by the Environmental Coordinator?	✓			Demarcation check conducted on 27 January 2022. Refer Attachment 3.
4	Has sign off been provided by the Environmental Coordinator for demarcation areas?	✓			Refer Attachment 3 for sign off by the Environmental Coordinator.
5	Has certification for pre-clearance flora been provided? (N.B. Exemptions/permits for protected plants under the NCA must be obtained by DES where works occur in a High Risk Area). Please provide date and reference.	✓			See Attachment 4. V18 DES Reference: APP0075497, obtained 13 May 2021.
6	Have pre-clearance checks surveys for <i>Coleus habrophyllus</i> been completed over the clearing area?	✓			Completed by SHG on several occasions: 1. 21,22, 23 April 2021, and 2. 27 January 2022. See Attachment 5 for sign off by the Environmental Coordinator.
7	If <i>Coleus habrophyllus</i> 'no-go' zones have been identified within the clearing area, have these been demarcated, fenced, signed and inspected by the Environmental Coordinator and Contractor?			✓	<i>Coleus habrophyllus</i> was not recorded within the works extent. See Attachment 5.
8	If works involve clearing within a Fisheries mapped waterway for waterway barrier works, are the works compliant with applicable accepted development codes and / or permits?			✓	No works are proposed for mapped waterway for waterway barrier works.
9	If works involve clearing within a watercourse defined under the <i>Water Act 2000</i> , are the works compliant with applicable exemptions and / or permits?			✓	No works are in a watercourse under the <i>Water Act 2000</i> .

Woogaroo Heights

Environmental Pre-Start Checklist

10	Has the appointed DES permitted Fauna Spotter completed pre-clearance surveys and reports within 2 weeks of clearing?	✓			A Pre-Clearance was completed by QFC on 24 and 25 January 2022. See Attachment 6 for the Fauna Spotter Catcher pre-clearance survey and Wildlife Protection & Management Plan (WPMP).
11	If the appointed Fauna Spotter identified any sensitive areas for consideration in clearing methods, have these been addressed?	✓			See Attachment 6 for the Fauna Spotter Catcher WPMP.
12	If a sick or injured animal, specifically a koala, is identified during clearing, are appropriate controls in place to ensure the animal can seek medical attention if required?	✓			See Attachment 7 for the Fauna Spotter Catcher Wildlife and Habitat Impact Mitigation Plan (WHIMP) including acknowledgement of <i>Procedure for the management of sick Koalas encountered during works</i> .
13	Have all contractors, subcontractors and associated personnel been instructed on environmental procedures and controls?	✓			Environmental Awareness Acknowledgement Notice, signed by Shadforth (October 2021). See Attachment 8.
14	Has a Council pre-start been completed?	✓			The ICC pre-lodgement was completed on 25 August 2021 (as confirmed by Northrop).

NOTE: if the answer to any question above is NO then the clearing activity will not proceed.

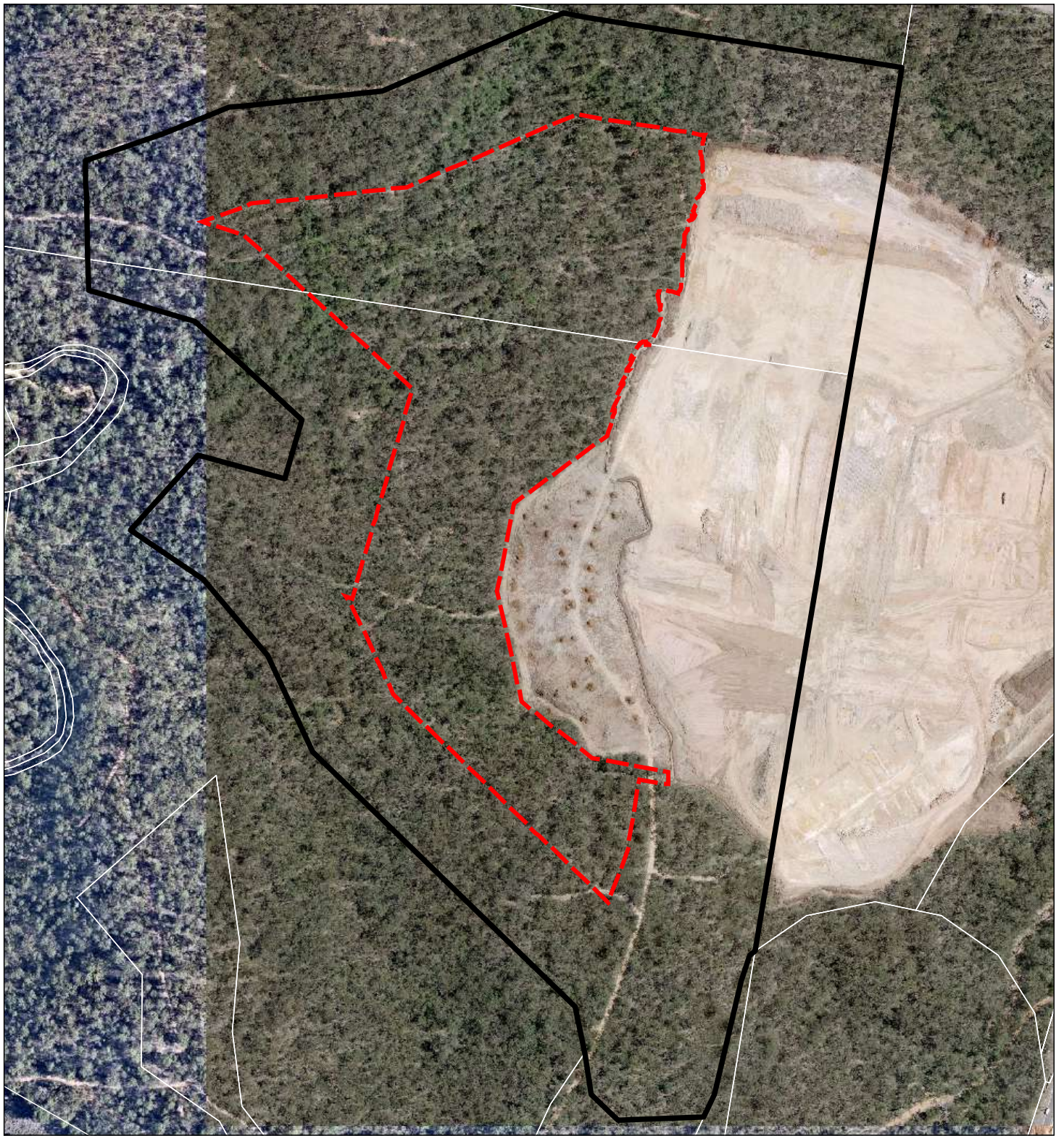
- Attachment 1 — Works Extent
- Attachment 2 — EPBC Referral Extent Confirmation
- Attachment 3 — Environmental Coordinator Demarcation Flagging Sign-off
- Attachment 4 — DES Exempt Clearing Protected Plants Notification
- Attachment 5 — *Coleus habrophyllus* survey and sign-off by Environmental Coordinator
- Attachment 6 — Pre-clearance survey and Wildlife Protection & Management Plan (WPMP) prepared by Fauna Spotter Catcher
- Attachment 7 — Wildlife and Habitat Impact Mitigation Plan (WHIMP) prepared by Fauna Spotter Catcher
- Attachment 8 — Contractor Environmental Awareness Acknowledgement Notice
- Attachment 9 — Pre-start completion confirmation

Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 1

Works Extent



Legend




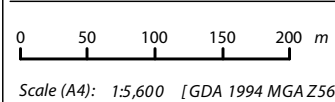
-  Woogaroo Heights
-  Qld DCDB
-  Vegetation clearing area

Figure 1

Woogaroo Heights Works Extent

File ref. 7927 WVAR2 Figure 1 Works Extent A
Date 1/02/2022
Project Woogaroo Heights - Op-works



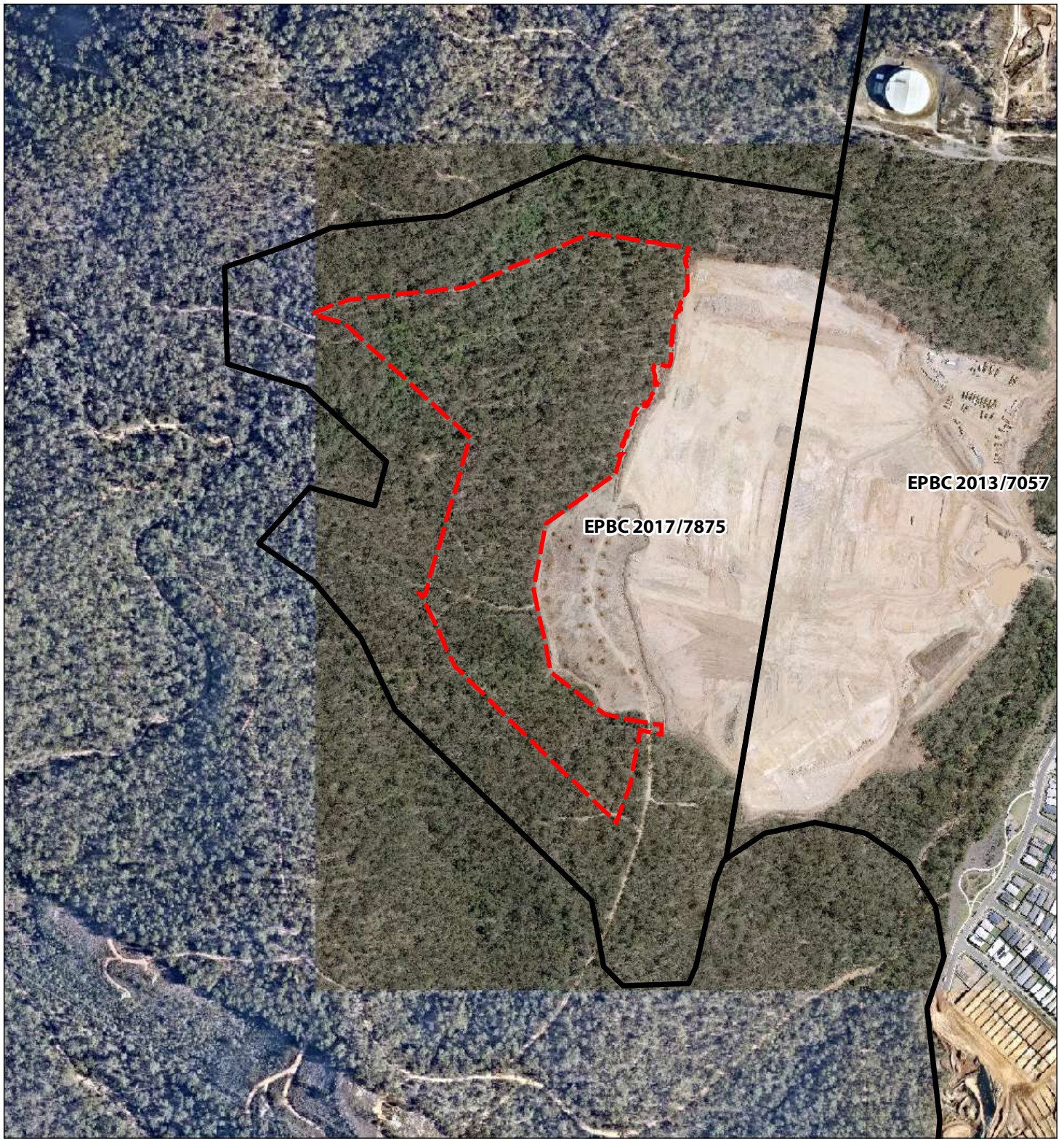
THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT SAUNDERS HAVILL GROUP. THE CLIENT SAUNDERS HAVILL GROUP CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWINGS BY ANY THIRD PARTY.

Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 2

EPBC Referral Extent Confirmation



Legend



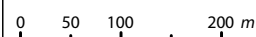
-  Woogaroo Heights
-  Vegetation clearing area

Figure 2

*Woogaroo Heights
Project Referral Area*

File ref. 7927 WVAR2 Figure 2 EPBC Referral A
Date 1/02/2022
Project Woogaroo Heights - Op-works



Scale (A4): 1:7,500 [GDA 1994 MGA Z56]



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Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 3

Environmental Coordinator Demarcation Flagging Sign-off

Our ref: 7927

2 February 2022

Attention: Ian Murray
Lendlease Communities (Australia) Limited
Via email: Ian.Murray@lendlease.com

Dear Ian

RE: WOOGAROO HEIGHTS: DEMARCATION OF CLEARING EXTENTS

The Environmental Management Division of Saunders Havill Group was engaged by Lendlease Communities to carry out an inspection of flagging for demarcation fencing for the Woogaroo Heights works extent (refer **Attachment 1** for approved works area).

Flagging of the works area was undertaken by the site contractor, Shadforth, in conjunction with the appointed surveyor, on 24 January 2022. Two Ecologists from Saunders Havill Group reviewed the demarcated area on 27 January 2022 to ensure the flagged extent was in accordance with relevant Commonwealth and Council permit requirements.

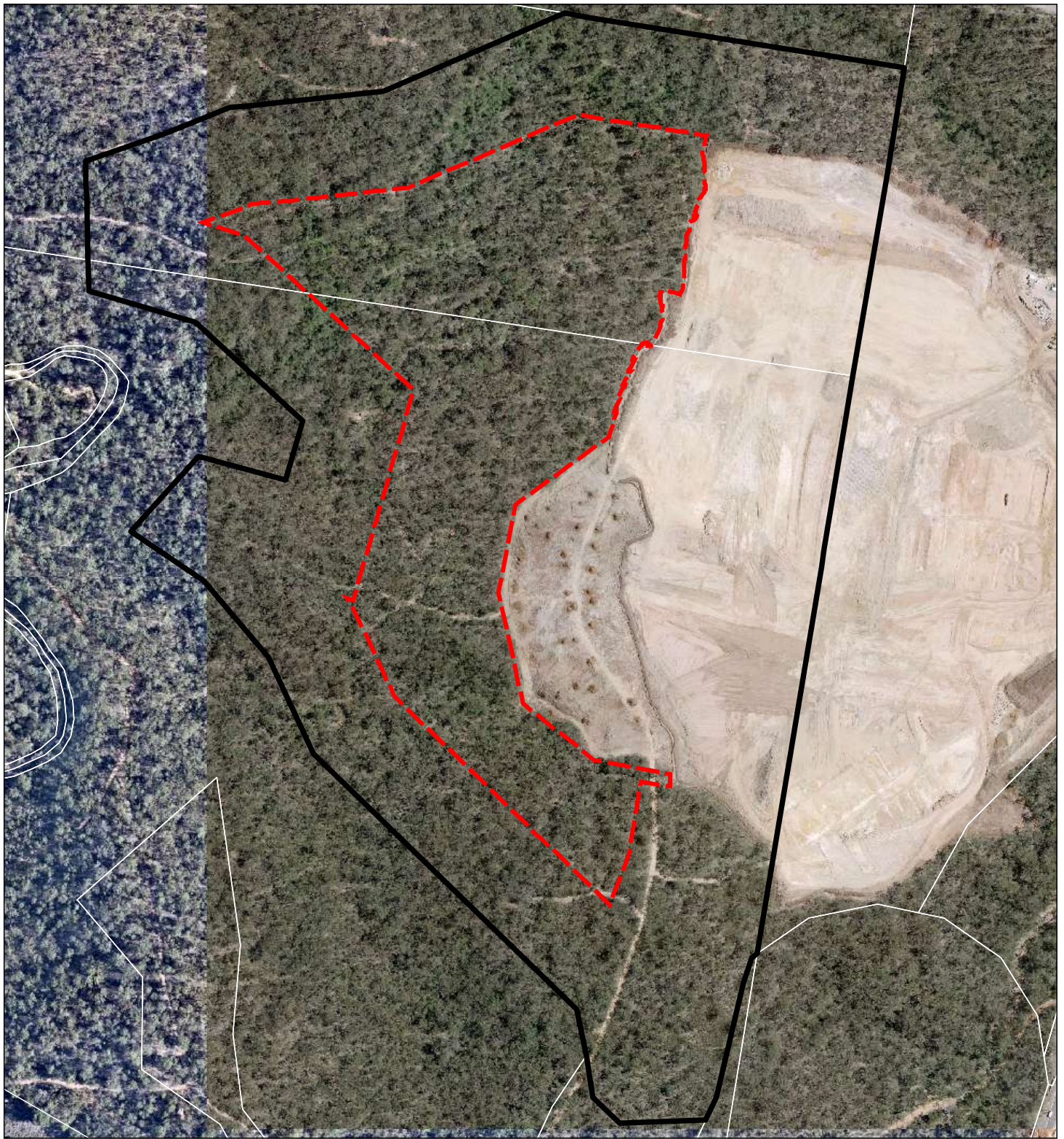
The GPS track log of the inspection extent is provided as **Attachment 2**. The post-inspection notifications are provided as **Attachment 3** to be kept for your records.

Yours sincerely



Murray Saunders
Director - Saunders Havill Group

Attachment 1 – Approved works area



Legend




-  Woogaroo Heights
-  Qld DCDB
-  Vegetation clearing area

Figure 1

Woogaroo Heights Works Extent

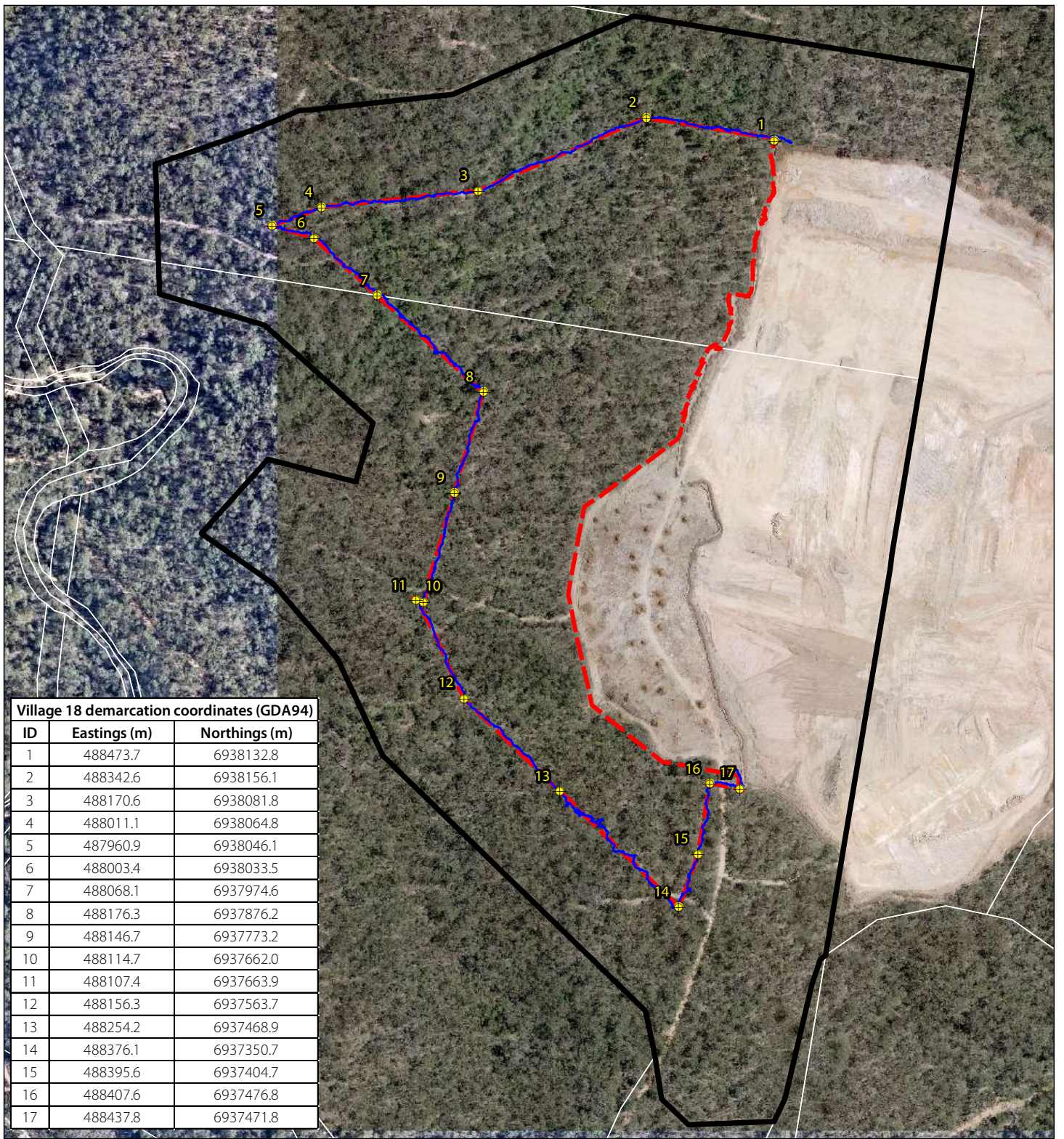
File ref. 7927 WVAR2 Figure 1 Works Extent A
Date 1/02/2022
Project Woogaroo Heights - Op-works

0 50 100 150 200 m
 Scale (A4): 1:5,600 [GDA 1994 MGA Z56]



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Attachment 2 – Clearing Demarcation Plan



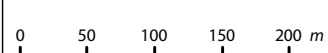
Legend

- Woogaroo Heights
- Qld DCDB
- Vegetation clearing area
- Fence GDA94 coordinates
- Fence check demarcation (GPS log)

Plan 1

Woogaroo Heights Vegetation
Clearing Demarcation

File ref. 7927 WVAR2 01 Demarcation A
Date 1/02/2022
Project Woogaroo Heights - Op-works



Scale (A4): 1:5,600 [GDA 1994 MGA Z56]



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Attachment 3 – Demarcation Flagging Inspection Notification

Area Inspected:	Woogaroo Heights
Location:	Centenary Highway, Spring Mountain (Lot 750 on SP189053 and Lot 754 on SP189054)
Date of Inspection:	27 January 2022
Appointed Contractor:	Shadforth Construction Manager — Tony Hooper
Environmental Representative:	Saunders Havill Group – Jonny Pickvance and Lisa Fry
Environmental features:	Nil

Photos of flagged clearing extent



Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 4

DES Exempt Clearing Protected Plants Notification

Acknowledgement

Saunders Havill Group Pty Ltd
9 Thompson St
BOWEN HILLS
QLD 4006
Australia

Where clearing is to be conducted:
LOT 750/SP189053
LOT 754/SP189054

DES Reference: APP0075497

Dear Saunders Havill Group Pty Ltd,

Thank you for submitting a flora survey report related to clearing native plants under a protected plant clearing exemption.

Please retain this acknowledgement as receipt of your flora survey report submitted under the requirements of "Code of Practice For The Take or Use of a Protected Plant Under An Exemption" which confirms your compliance with Section 48 of Nature Conservation (Plants) Regulation 2020. Please note this acknowledgement is not a clearing permit.

For clearing related to this flora survey report to be exempt under the relevant regulations the clearing must commence within 12 months after the relevant flora survey was conducted and must be completed within 3 years after the relevant flora survey was conducted.

It is strongly recommended that for audit purposes you keep this email and acknowledgement of receipt together with the relevant flora survey trigger map, flora survey report and any other documentation relating to the clearing in question.

Please visit www.ehp.qld.gov.au for information about available online services.

Enquiries:

Email: wildlife@des.qld.gov.au
Postal Address: PO Box 102, Toowoomba, QLD, 4350



Flora Survey Report

Springfield Rise (Village 18)
London Avenue, Spring Mountain

Prepared for Lendlease Communities (Springfield) Pty Ltd

13 May 2021

Job No. 7522 E

Document Control

Document: Flora Survey Report for Springfield Rise, Village 18, London Avenue, Spring Mountain, prepared by Saunders Havill Group for Lendlease Communities (Springfield) Pty Ltd.

Document Issue

Issue	Date	Prepared By	Checked By
A	13/05/2021	LT	JB / DH

Prepared by

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ABN 24 144 972 949

www.saundershavill.com

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1. Introduction

Saunders Havill Group was engaged by Lendlease Communities (Springfield) Pty Ltd to prepare this Flora Survey Report to re-assess if threatened flora were present within development and 100 m buffer areas associated with Village 18 of the Springfield Rise Estate, London Avenue, Spring Mountain. The development is located within a mapped 'High Risk' area under the *Nature Conservation Act 1992* (NCA) which indicates there may be flora protected under the *Nature Conservation (Plants) Regulation 2020* at this location. Ipswich City Council (ICC) is the local government stakeholder and the development was approved under the Ipswich Planning Scheme with conditions.

Since 2014, the Queensland Government has implemented a risk-based approach to the regulation of protected plants under the NCA. The regulatory framework captures activities that pose a high risk to plant biodiversity, and regulatory, educational and compliance effort are consequently focused on high risk activities. Under the framework, when a non-exempt clearing activity is proposed within a 'High Risk' area, the proponent of that activity is required to complete a flora survey prior to the commencement of clearing.

The main objective of the flora survey is to locate any extinct, extinct in the wild, critically endangered, endangered, vulnerable or near threatened plants (threatened plants or near threatened plants) that may be present within the impact area. This action is especially important for determining the degree of assessment required for a particular clearing activity. For example, if the survey establishes that threatened plants or near threatened plants are not present within the impact area, the proposed clearing will be exempt and, following notification to the Queensland Government department administering the NCA, a clearing permit will not be required for the work to proceed. Alternatively, if threatened plants or near threatened plants are identified, and clearing is considered to impact on the threatened plants or near threatened plants (*i.e.*, clearing directly impacts or occurs within 100 m) then an application for a *Clearing Permit (Protected Plants)* is required.

Contextually, the site is located approximately 250 m north of Centenary Highway and 1.3 km south of Cunningham Highway. The site is located between existing high density residential development and the Centenary Highway forming an isolated pocket of vegetation (refer **Figure 1**). The flora survey area is mapped under the *Vegetation Management Act 1999* (VMA) containing both remnant and non-remnant vegetation.

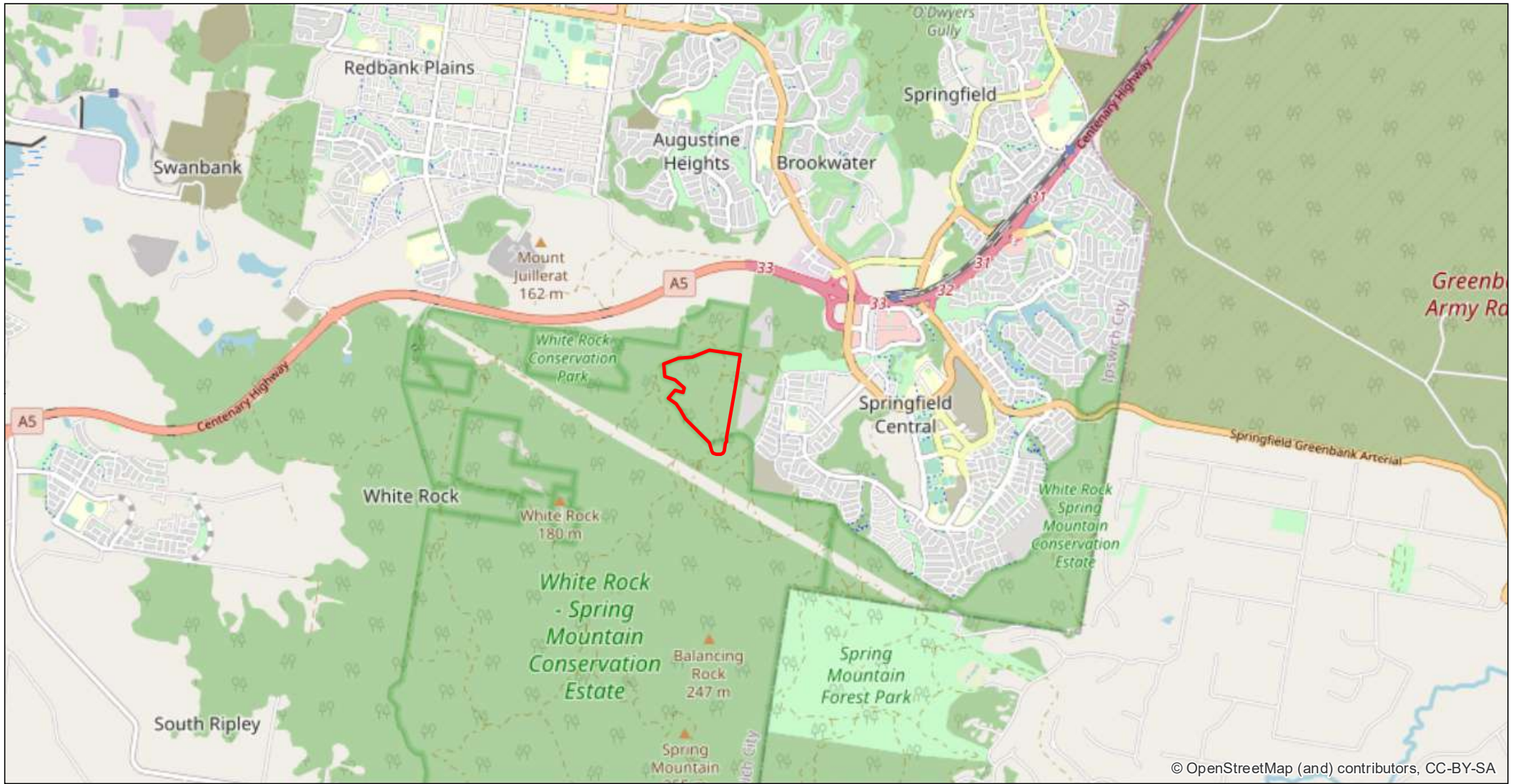
The flora survey detailed in this report was conducted where clearing is proposed or may occur within areas mapped as 'High Risk' under the Protected Plants Flora Survey Trigger Map (refer **Figure 2**), and in accordance with the *Flora Survey Guidelines – Protected Plants* (Department of Environment and Science (DES) 2020).

1.1. Property summary

Key site details are provided in **Table 1**.

Table 1: Property summary

Address	London Avenue, Spring Mountain
Lot/plan	<p>Impact Area: Part Lot 754 on SP189054 Part Lot 750 on SP189053</p> <p>Buffer: Part Lot 5 on SP291381 Part Lot 77 on SP224818 Part Lot 226 on S311450 Part Lot 747 on SP189043 Part Lot 751 on SP189053 Part Lot 752 on SP189053 Part Lot 753 on SP189054</p>
Local government area	Ipswich City Council
Planning scheme	<i>Ipswich Planning Scheme 2006</i>
Area classification / zone	Residential Low Density and Recreation
Existing land use	Vacant land
Approved land use	Residential development



© OpenStreetMap (and) contributors, CC-BY-SA

Legend


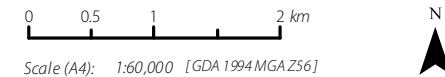
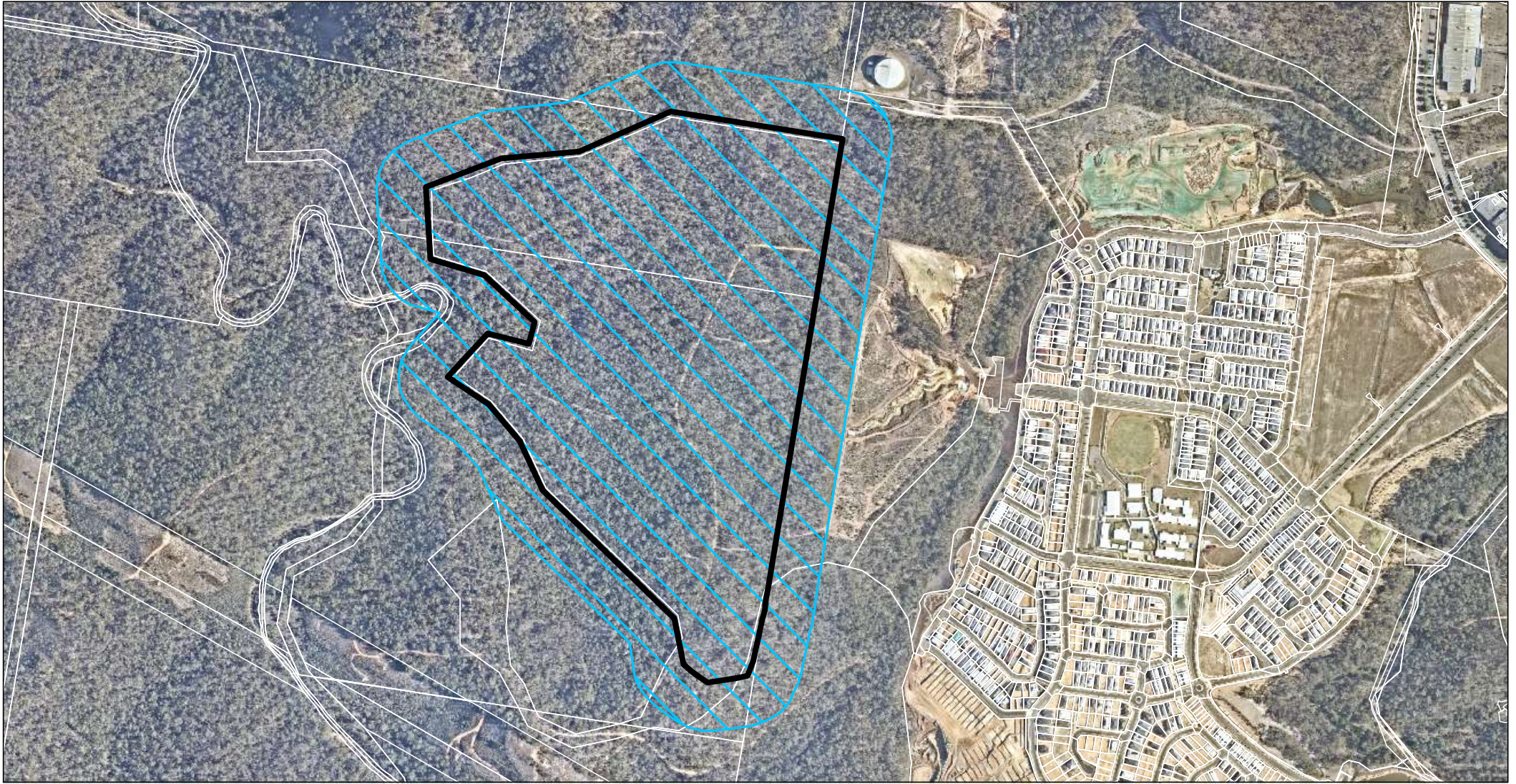
 Village 18 Impact Area

Figure 1 Site Locality



File ref. 7522 E Figure 1 NCA_v18 Site Locality A
Date 13/05/2021
Project Village 17 Springfield Rise

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Legend




-  Qld DCDB
-  Village 18 Impact Area
-  Vegetated 100m NCA buffer

Figure 2 Impact Area and Buffer

0 50 100 200 300 400 m

Scale (A4): 1:11,000 [GDA 1994 MGA Z56]



File ref. 7522 E Figure 2 NCA_v18 Impact Area and Buffer A

Date 14/05/2021

Project Village 17 Springfield Rise

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1.2. Suitably qualified person details

David Havill is a person suitably qualified (tertiary qualifications and field-based experience) to undertake flora surveys for the stated purpose, and completed the flora surveys described in this report. Refer to **Appendix A** for the suitably qualified person's curriculum vitae.

I, David Havill certify that (a) I have adhered to all statutory requirements and flora survey guideline requirements, and (b) the flora survey report is an accurate and full account of the flora survey.

Signature: 

Date: 13/05/2021

2. Desktop assessment

2.1. Nature Conservation Act 1992

The *Nature Conservation Act 1992* (NCA) classifies and protects significant areas (Protected Areas) and protects threatened plant and animal species. The *Nature Conservation (Plants) Regulation 2020* (NCPR) lists plant species presumed extinct, critically endangered, endangered, vulnerable, near threatened, least concern, international or prohibited.

The Queensland Government has implemented a regulatory framework that captures activities that pose a high risk to plant biodiversity. Under the framework, when a non-exempt clearing activity is proposed within a 'High Risk' area, the proponent of that activity is required to complete a flora survey prior to commencement of clearing. The Protected Plants Flora Survey Trigger Map shows 'High Risk' areas for protected plants and is used to help determine flora survey and clearing permit requirements for a particular location.

The Protected Plants Flora Survey Trigger Map confirms that clearing within the subject site is categorised as 'High Risk' and therefore subject to flora survey requirements prior to clearing (refer **Figure 3**).

Prior to flora surveys, the schedules of the NCPR were considered in this report using a Wildlife Online Database Search with a 5 km radius from the site. Five (5) flora species listed under the NCPR was identified as having the potential to occur on-site and are presented in **Table 2**.

Refer to **Appendix B** for full search results.

Table 2: Wildlife Online search results – flora

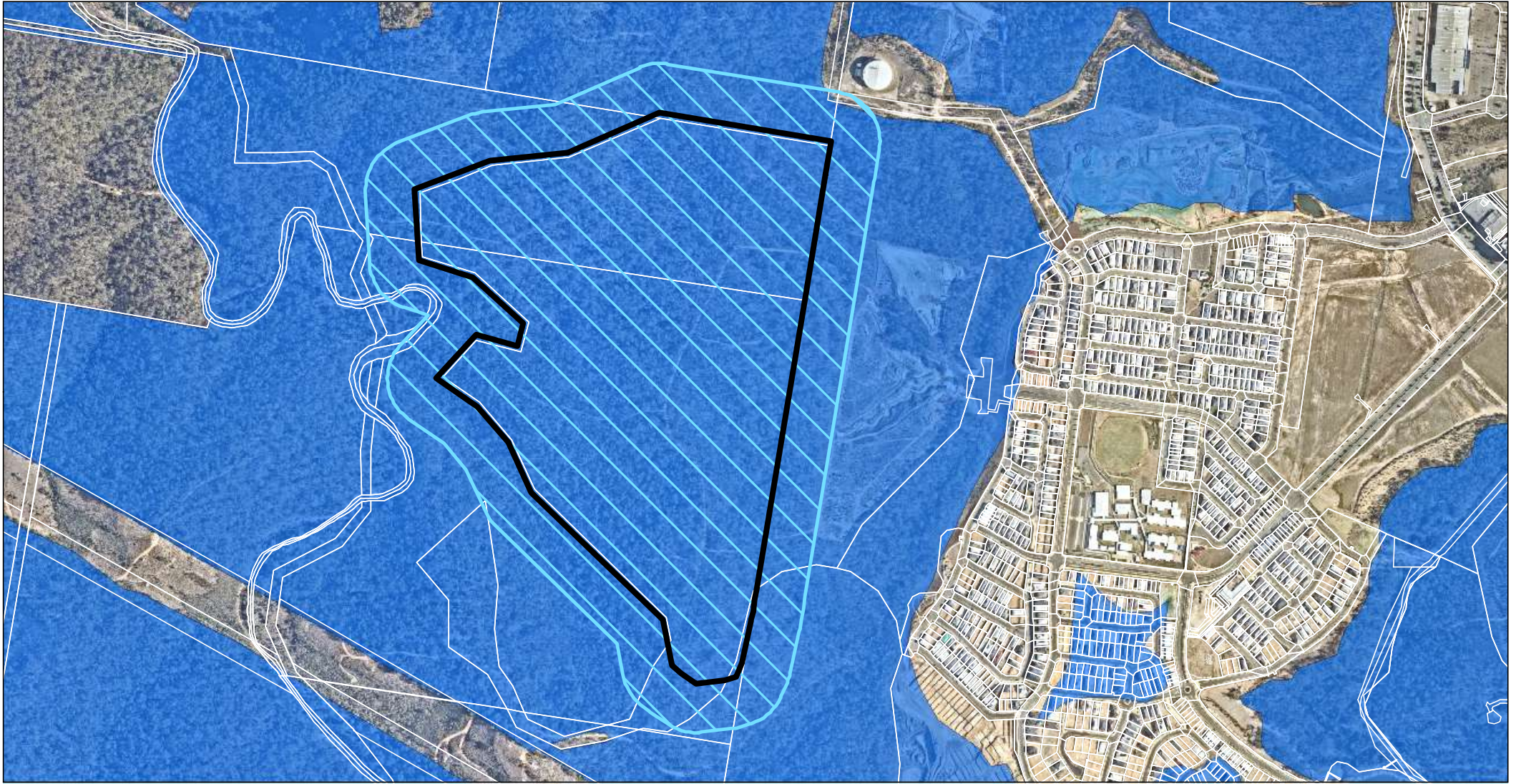
Scientific name	Common name	NCA status
<i>Coleus habrophyllus</i>		Endangered
<i>Eucalyptus curtisii</i>	Plunkett mallee	Near Threatened
<i>Marsdenia coronata</i>	Slender milkvine	Vulnerable
<i>Melaleuca irbyana</i>	Swamp Tea-tree	Endangered
<i>Rhodamnia maideniana</i>	Smooth scrub turpentine	Critically Endangered

Interrogation of the Biomaps and Wildnet Online extract identified the following relating to sightings of these flora species:

- *Coleus habrophyllus* – Recent sightings within 2 km of the study area.
- *Eucalyptus curtisii* (Plunkett mallee) – No recent sightings within 2 km of the study area
- *Marsdenia coronata* (Slender milkvine) - No recent sightings within 2 km of the study area
- *Melaleuca irbyana* (Swamp Tea-tree) – No recent sightings within 2 km of the study area.

■ Flora Survey Report

- *Rhodamnia maideniana* (Smooth scrub turpentine) - No recent sightings within 2 km of the study area



Legend





-  Village 18 Impact Area
-  Qld DCDB
-  NCA Protected Plants
-  Vegetated 100m NCA buffer

Figure 3 NCA Protected Plants

0 50 100 200 300 400 m

Scale (A4): 1:11,000 [GDA 1994 MGA Z56]



File ref. 7522 E Figure 3 NCA_v18 NCA A

Date 14/05/2021

Project Village 17 Springfield Rise

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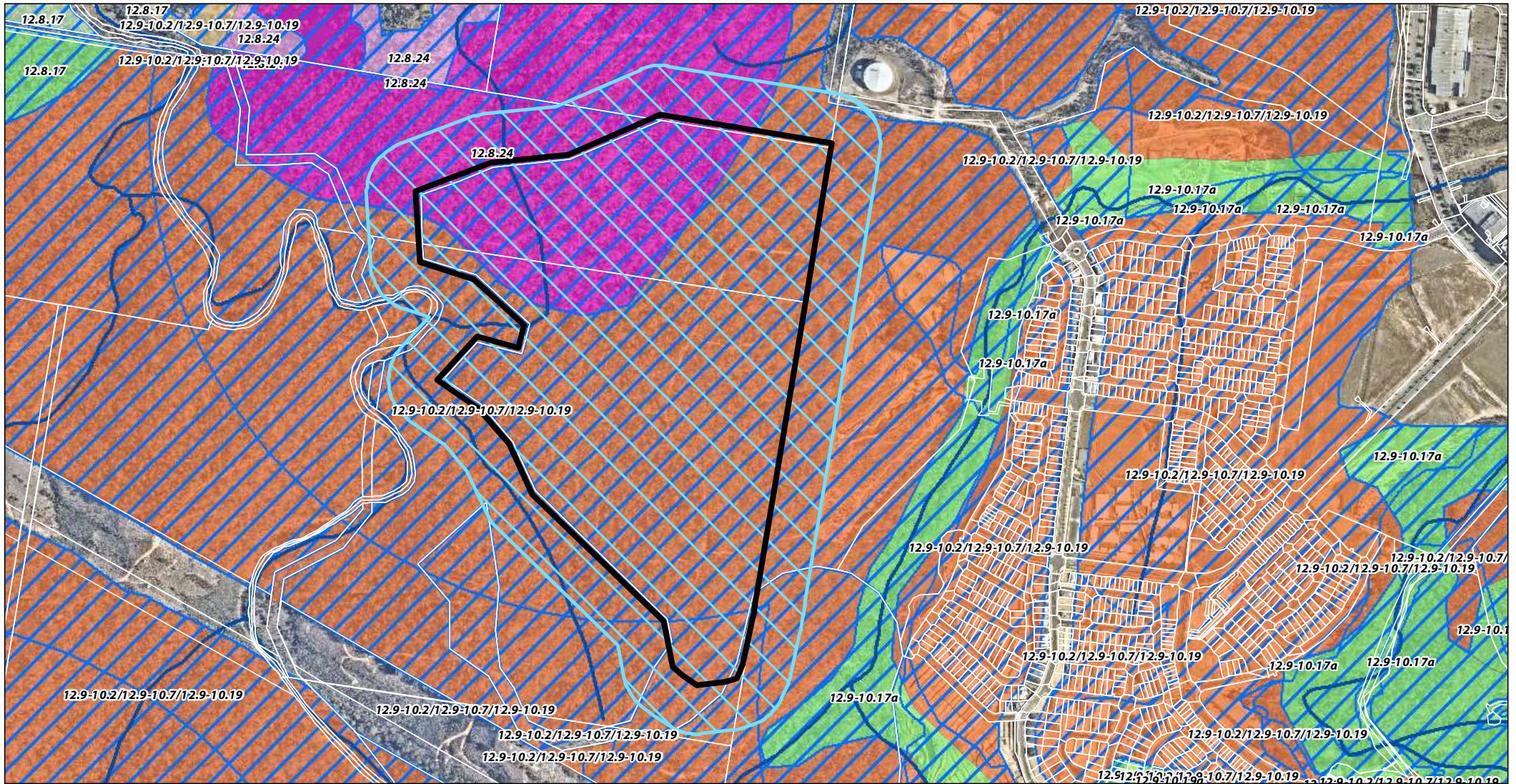
2.2. Habitat types

The study area is mapped entirely as Category B (remnant) vegetation. A review of aerial imagery alongside regional ecosystem mapping (contemporary and preclear) indicated one habitat type present across the area of clearing and buffer area—eucalypt open forest/woodland. This habitat type comprises of Endangered RE12.8.24 and Of Concern composite RE12.9-10.2/12.9-10.7/12.9-10.19 (65/20/15) (refer **Table 3** and **Figure 4**).

Highly modified environments were noted within the impact area and within the buffer attributable to existing infrastructure and adjacent residential development associated with the Springfield Rise estate. A minimum of four (4) meanders were required in accordance with the *Flora Survey Guidelines – Protected Plants* (DES 2020) for the resulting impact area of approximately 83.9 ha (refer **Figure 5**).

Table 3: Regional Ecosystem Description

RE	VMA	Description
12.8.24	Endangered	<i>Corymbia citriodora subsp. variegata</i> , <i>Eucalyptus crebra</i> +/- <i>E. moluccana</i> open forest. Occurs on Cainozoic igneous rocks especially lower slopes of rhyolite and trachyte hills.
12.9-10.2	Least Concern	<i>Corymbia citriodora subsp. variegata</i> +/- <i>Eucalyptus crebra</i> open forest on sedimentary rocks
12.9-10.7	Of Concern	<i>Eucalyptus crebra</i> +/- <i>E. tereticornis</i> , <i>Corymbia tessellaris</i> , <i>Angophora spp.</i> and <i>E. melanophloia</i> woodland on sedimentary rocks
12.9-10.19	Least Concern	<i>Eucalyptus fibrosa subsp. fibrosa</i> woodland on sedimentary rocks

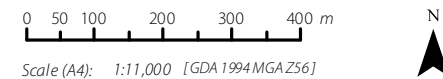


Legend

- | | | |
|---------------------------|---|--|
| Qld DCDB | Regional Ecosystems mapping | Category C area containing endangered regional ecosystems |
| Village 18 Impact Area | Category A or B area containing endangered regional ecosystems | Category C area containing of concern regional ecosystems |
| Vegetated 100m NCA buffer | Category A or B area containing of concern regional ecosystems | Category C area that is a least concern regional ecosystem |
| VM Watercourses | Category A or B area that is a least concern regional ecosystem | |
| VM Essential Habitat | | |
| VM Wetland | | |

Figure 4 Regulated Vegetation Supporting Map

File ref. 7522 E Figure 4 NCA_v18 RVSM A
Date 14/05/2021
Project Village 17 Springfield Rise



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2.3. Survey timing and limitations

The flora survey was completed on 21 and 22 of April 2021 (autumn). The survey timing is considered appropriate for the flora identified during the desktop assessment (refer to **Table 2**), as the flora species are either woody or non-woody with definitive key characteristics beyond the flower, fruit and seed attributes. **Table 4** provides further detail on the flora species identified during the desktop assessment, their defining characteristics and specific survey timing (if applicable).

Table 4: Threatened or Near Threatened Flora Species Profiles

Scientific Name	Common Name	Woody (W) / Non-woody (NW)	Flower	Fruit/seed	Other key characteristics
<i>Coleus habrophyllus</i>		W	Yes - Inflorescences are terminal spikes to 20 cm long, with clusters (verticillasters) of 10–12, light purple, two-lipped flowers, 7–8.8 mm long.	-	<i>Coleus habrophyllus</i> is a woody, square-stemmed herb growing up to 40 cm tall with scented foliage. Soft, hairy leaves to 7cm long are opposite and toothed with a velvety feel.
<i>Eucalyptus curtisii</i>	Plunkett mallee	W	Yes- White flowers are borne in large corymbose panicles. Individual flowers are 2 cm across and appear in spring and early summer.	Yes - Fruits are bell-shaped 1 by 0.8 cm, and often wrinkled or ribbed when dry, and usually have five or six internal chambers, Seeds are yellow brown and linear with a terminal scar	Plunkett Mallee grows from 2 to 7 metres in height and has smooth grey bark that peels in long strips.
<i>Marsdenia coronata</i>	Slender milkvine	W	Yes - Flowering in summer with 4 mm, five-petalled pale yellow or greenish-yellow flowers.	Yes - Fruit pods to 5 cm ripen summer to winter, splitting to reveal dark seeds with long silky hairs.	<i>Marsdenia coronata</i> is a herbaceous vine, with white latex. The roots are tuberous.

Scientific Name	Common Name	Woody (W) / Non-woody (NW)	Flower	Fruit/seed	Other key characteristics
<i>Melaleuca irbyana</i>	Swamp Tea-tree	W	Yes – 20 mm white flower spikes during spring and summer.	Yes – Small woody seed capsules to 3 mm.	Shrub or tree to 8 – 10 m, bark papery. Stem-clasping, 5 mm leaves spirally arranged.
<i>Rhodamnia maideniana</i>	Smooth scrub turpentine	W	Yes - Small white flowers appear in late spring or early summer.	Yes- The fruit is a black berry, around 10 mm in diameter.	Bushy shrub growing up to 3 m tall. Hairless leaves are clearly three veined with a prominent drip tip, 5 to 10 cm long, 2 to 4.5 cm wide.

NB: information is referenced from the following: Leiper, G, Glazebrook, J, Cox, D and Rathie, K 2014, *Mangroves to Mountains (Revised Edition): A field guide to the native plants of south-east Queensland*, Society for Growing Australian Plants (Queensland Region) Inc.

3. Flora survey

3.1. Project impact area

A majority of the site is mapped as a High Risk area on the Protected Plants Flora Survey Trigger Map (refer **Figure 3**). The impact area, which is identified as the clearing area and the buffer area excluding obvious *highly modified environments*, is shown on **Figure 2**. Additional highly modified environments were identified by the suitably qualified person while completing the survey.

3.2. Survey extent and limitations

The spatial details of the transect survey extents are listed in **Table 5** and illustrated in **Figure 5**. Surveys excluded *highly modified environments* including the existing cleared areas within Village 18 and surrounding urban development (e.g., houses, bitumen road) within the buffer area. Thus, four (4) meanders were undertaken across the impact area and 100 m buffer.

Table 5: Transect coordinates

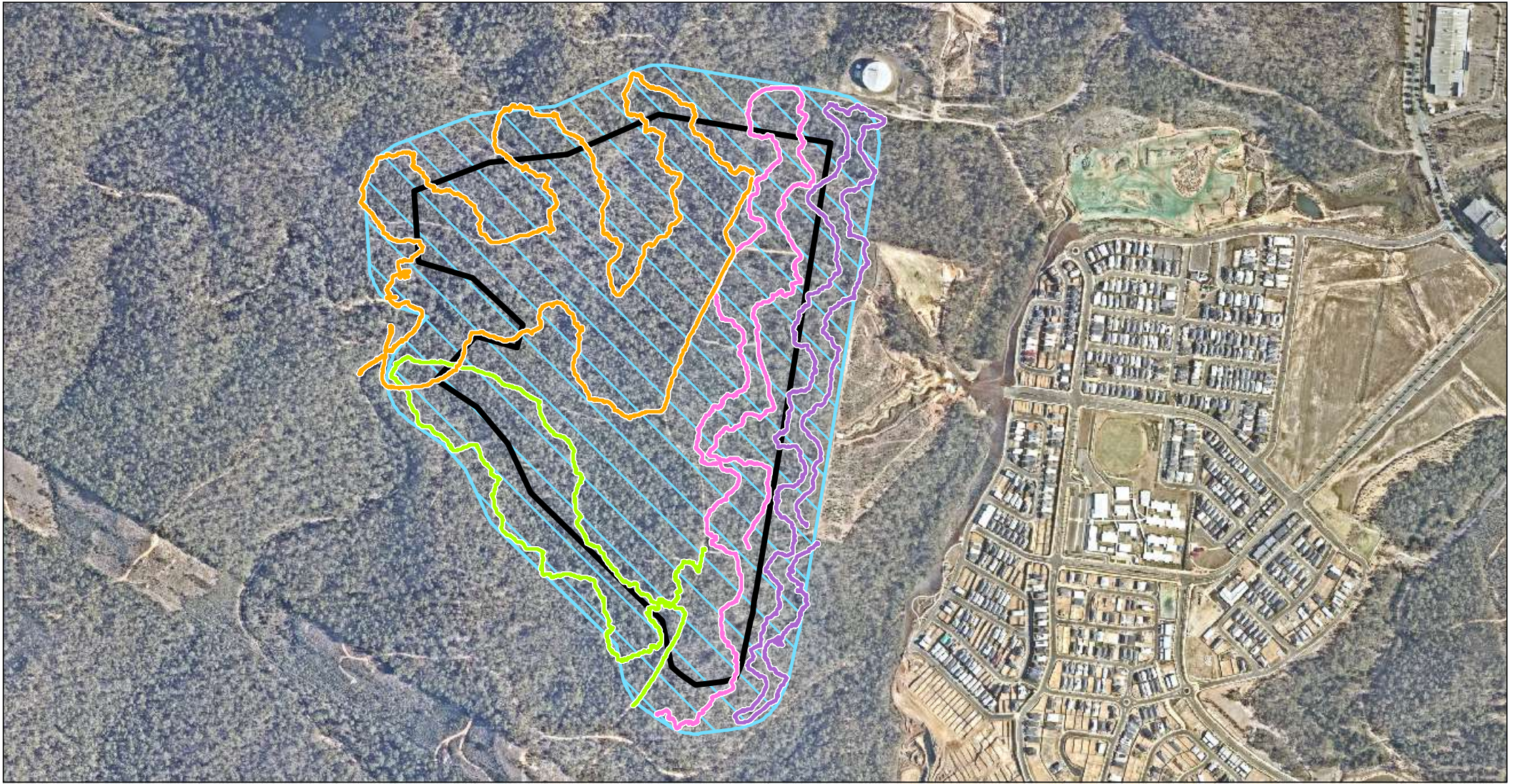
Transect	Start (longitude)	Start (latitude)	Finish (longitude)	Finish (latitude)
2	152.88485°	-27.68760°	152.88470°	-27.68727°
3	152.88107°	-27.69055°	152.88243°	-27.68766°
4	152.88352°	-27.68765°	152.88157°	-27.69070°
6	152.88357°	-27.68080°	152.88356°	-27.68089°

3.3. Flora survey methodology

The impact area was surveyed using the preferred timed meander survey technique as per the *Flora Survey Guidelines – Protected Plants* by two (2) Ecologists from Saunders Havill Group, including Senior Ecologist David Havill (the suitably qualified person) (refer to **Appendix A** for Curricula Vitae).

The surveys were carried out as follows:

1. The impact area was traversed by foot by project Ecologist (refer **Figure 5**).
2. The start and finish times of each meander were recorded.
3. The tracklog of the project Ecologists' transects were recorded using a handheld GPS unit accurate to < 1 m.
4. All unique plant species encountered during each meander within each habitat type were recorded.
5. The site and surrounds were photographed, and any relevant observations were recorded.



Legend







-  Village 18 Impact Area
-  Vegetated 100m NCA buffer
-  NCA Meander 3
-  NCA meander 2
-  NCA Meander 4
-  NCA Meander 6

Figure 5 NCA Survey Results

0 50 100 200 300 400 m
 Scale (A4): 1:11,000 [GDA 1994 MGA Z56]



File ref. 7522 E Figure 5 NCA_v18 NCA Survey Results A
Date 14/05/2021
Project Village 17 Springfield Rise



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4. Flora survey results

The preferred timed meander survey did not encounter threatened or near threatened species protected under the NCA within the impact area (refer **Figure 5**). Based on the survey effort it is stated with a high level of confidence that threatened or near threatened species will not be cleared or impacted by the proposed works.

A total of 166 unique flora species were identified throughout the survey (refer **Appendix C**). A total transect length of 17,921 m (approximately 17.9 km) was searched for threatened and near threatened flora species by two (2) Ecologists using the meander survey method. Four (4) meander surveys were completed in accordance with the flora survey guidelines (refer **Figure 5**).

Table 6 summarises the time period details of the timed meanders. A description of the transect areas and respective species with associated photographs is provided in the following subsections.

Table 6: Meander survey summary

Site	Date	Start time (hr:min)	Finish time (hr:min)	Duration (hr:min)	Distance (m)	No. Flora species
2	21.04.2021	11:20	14:00	2:40	4,629 m	99
3	22.04.2021	08:35	10:30	0:55	3,122 m	87
4	22.04.2021	10:40	12:45	2:05	3,969 m	88
6	23.04.2021	09:45	12:40	2:55	6,201m	107

4.1. Meander survey — transect 2

Transect 2 was located within the buffer, east of the impact area within Of Concern composite RE RE12.9-10.2/12.9-10.7/12.9-10.19 on 21 April 2021. It is noted that a small portion of this transect traverses mapped Category X (non-remnant) vegetation towards the north associated with existing infrastructure. This transect covered approximately 4,629 m and recorded ninety-nine (99) flora species.

Transect 2 area is characterised by steep slopes and rocky outcrops (refer **Photo Set 1**). Topography ranges from approximately 70 m ASL to 110 m ASL, with the highest elevations located nearest White Rock Spring Mountain Conservation Estate to the south and west of the transect area. Additionally, a large den site was located within the furthest most southern portion of the transect area, within the impact area (refer **Photo 1**).

The canopy layer within is dominated species composition more representative of Of Concern RE12.9-10.7 and Least Concern RE12.9-10.19, particularly RE12.9-10.19a. Canopy species include *Angophora leiocarpa* (Smooth-barked Apple), *Corymbia citriodora* (Spotted Gum), *Corymbia henryi* (Large-leaved Spotted Gum), *Corymbia tessellaris* (Moreton Bay Ash), *Eucalyptus carnea* (Broad-leaved White Mahogany), *Eucalyptus fibrosa* (Broad-leaved Red Ironbark), *Eucalyptus major* (Grey Gum) and *Eucalyptus siderophloia* (Grey Ironbark) (refer

Photo Set 2). Vegetation within this transect was considered more likely to represent these mapped regional ecosystems given the absence of key species including *Eucalyptus crebra* (Narrow-leaved Ironbark).

The sub-canopy and shrub layers are intact within mapped Category B (remnant) vegetation areas, however slightly disturbed near clearing boundaries. Species identified included *Acacia disparrima* (Hickory Wattle), *Acacia fimbriata* (Brisbane Wattle), *Allocasuarina littoralis* (Black She Oak), *Alphitonia excelsa* (Soap Tree), *Breynia oblongifolia* (Coffee Bush), *Callistris gracilis* (Rottnest Island Pine), *Dodonaea viscosa* (Hop Bush) and *Xanthorrhoea johnsonii* (Forest Grass Tree).

Although largely undisturbed, the introduced species were recorded predominantly within the ground layer of transect 2. Species identified included *Bidens pilosa* (Cobbler's Pegs), *Gomphocarpus physocarpus* (Cotton Balloon Bush), *Lantana montevidensis* (Creeping Lantana), *Megathyrsus maximus* (Guinea Grass), *Oxalis corniculata* (Creeping Oxalis) and *Passiflora suberosa* (Corky Passion Vine) (refer **Photo Set 3**). These species were largely recorded between the remnant vegetation and existing cleared area interface.

No threatened or near threatened flora species were recorded throughout this transect, refer **Table 7** for transect details.



Photo Set 1: Transect 2 area characterised by steep slopes and rocky outcrops.



Photo 1: Den site located within southern portion of the Transect 2.



Photo Set 2: Typical vegetation within Transect 2 area.



Photo Set 3: Remnant vegetation edges and disturbed areas.

Table 7: Transect 2 – flora species observed

Time	Species	Common Name	
11:20am START	<i>Corymbia trachyphloia</i>	Brown Bloodwood	
	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	
	<i>Acacia leiocalyx</i>	Early Flowering Black Wattle	
	<i>Xanthorrhoea johnsonii</i>	Forest Grass Tree	
	<i>Cymbopogon refractus</i>	Barbed Wire Grass	
	<i>Lophostemon confertus</i>	Brush Box	
	<i>Ottochloa gracillima</i>	Graceful Grass	
	<i>Angophora woodsiana</i>	Rough-barked Apple	
	<i>Aristida vagans</i>	Threeawn Speargrass	
	<i>Poa labillardierei</i>	Common Tussock Grass	
	<i>Corymbia citriodora</i>	Spotted Gum	
	11:25am	<i>Themeda triandra</i>	Kangaroo Grass
<i>Imperata cylindrica</i>		Blady Grass	
<i>Eragrostis brownii</i>		Brown's Lovegrass	
<i>Wahlenbergia stricta</i>		Australian Bluebell	
<i>Daviesia villifera</i>		Daviesia	
<i>Pomax umbellata</i>		Pomax	
<i>Lepidosperma laterale</i>		Variable Swordsedge	
<i>Corymbia intermedia</i>		Pink Bloodwood	
<i>Acacia disparrima</i>		Hickory Wattle	
<i>Melichrus procumbens</i>		Jam Tarts	
<i>Angophora leiocarpa</i>		Smooth-barked Apple	
<i>Pultenaea flexilis</i>		Graceful Bush Pea	
<i>Panicum decompositum</i>		Native Millet	
11:30am		<i>Cheilanthes distans</i>	Bristle Cloak Fern
		<i>Dodonaea viscosa</i>	Hop Bush
11:35am	<i>Alphitonia excelsa</i>	Soap Tree	
	<i>Asplenium australasicum</i>	Bird's Nest Fern	
	<i>Oxalis corniculata</i>	Creeping Oxalis	
	<i>Phyllanthus virgatus</i>	Creeping Phyllanthus	
	<i>Melinis repens</i>	Red Natal Grass	
	<i>Nephrolepis exaltata</i>	Fishbone Fern	
	<i>Commelina benghalensis</i>	Wandering Jew	
11:40am	<i>Plectranthus parviflorus</i>	Cockspur Flower	
	<i>Passiflora suberosa</i>	Corky Passion Vine	

Time	Species	Common Name
	<i>Desmodium intortum</i>	Greenleaf Desmodium
	<i>Jacksonia scoparia</i>	Dogwood
	<i>Acacia fimbriata</i>	Brisbane Wattle
	<i>Eucalyptus microcorys</i>	Tallowwood
	<i>Eucalyptus major</i>	Grey Gum
	<i>Cassytha pubescens</i>	Devil's Twine
	<i>Eucalyptus siderophloia</i>	Grey Ironbark
	<i>Aristida calycina</i>	Dark Wiregrass
	<i>Prunus spinosa</i>	Black Thorn
	<i>Eustrephus latifolius</i>	Wombat Berry
11:45am	<i>Dichondra repens</i>	Kidney Weed
	<i>Lomandra multiflora</i>	Many Flowered Mat Rush
11:50am	<i>Breynia oblongifolia</i>	Coffee Bush
12:00pm	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark
	<i>Corymbia henryi</i>	Large-leaved Spotted Gum
	<i>Lomandra longifolia</i>	Long-leaved Matrush
12:10pm	<i>Petalostigma pubescens</i>	Quinine Bush
	<i>Chrysocephalum apiculatum</i>	Yellow Buttons
	<i>Glycine microphylla</i>	Small-leaf Glycine
	<i>Hybanthus stellarioides</i>	Spade Flower
	<i>Lantana camara</i>	Lantana
12:25pm	<i>Lobelia purpurascens</i>	White Root
	<i>Pteridium esculentum</i>	Bracken Fern
12:30pm	<i>Boronia rosmarinifolia</i>	Forest Rose
12:35pm	<i>Allocasuarina littoralis</i>	Black She-oak
	<i>Dianella caerulea</i>	Blue Flax Lily
	<i>Callitris gracilis</i>	Rottnest Island Pine
12:40pm	<i>Heteropogon contortus</i>	Black Speargrass
	<i>Lantana montevidensis</i>	Creeping Lantana
	<i>Eucalyptus tereticornis</i>	Forest Red Gum
	<i>Corymbia tessellaris</i>	Moreton Bay Ash
	<i>Desmodium uncinatum</i>	Silver-leaf Desmodium
	<i>Epacris longiflora</i>	Fuchsia Heath
	<i>Eucalyptus seeana</i>	Narrow-leaved Red Gum
13:05	<i>Eremophila debilis</i>	Winter Apple
	<i>Smilax australis</i>	Barbed-wire Vine

Time	Species	Common Name
	<i>Megathyrsus maximus</i>	Guinea Grass
	<i>Gahnia aspera</i>	Saw Sedge
	<i>Cayratia clematidea</i>	Slender Grape Vine
	<i>Westringia fruticosa</i>	Coastal Rosemary
13:15	<i>Pultenaea villosa</i>	Hair Pea Bush
	<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush
	<i>Bidens pilosa</i>	Cobbler's Pegs
13:20	<i>Macroptilium lathyroides</i>	Phasey Bean
	<i>Capillipedium parviflorum</i>	Scented Top Grass
	<i>Sporobolus pyramidalis</i>	Giant Rat's Tail Grass
	<i>Baccharis halimifolia</i>	Groundsel
	<i>Tradescantia spathacea</i>	Sitaria
	<i>Chloris gayana</i>	Rhodes Grass
	<i>Urochloa decumbens</i>	Signal Grass
	<i>Bothriochloa decipiens</i>	Pitted Blue Grass
	<i>Tipuana tipu</i>	Tipuana
	<i>Pennisetum pureum</i>	Elephant Grass
	<i>Tagetes minuta</i>	Southern Cone Marigold
13:25	<i>Alternanthera brasiliana</i>	Purple Joyweed
13:30	<i>Cryptocarya sp</i>	Laurel
	<i>Polystichum proliferum</i>	Mother Shield Fern
13:45	<i>Pimelea linifolia</i>	Rice Flower
	<i>Lophostemon suaveolens</i>	Swamp Box
	<i>Grewia latifolia</i>	Dog's Balls
	<i>Stephania japonica</i>	Tape Vine
13:50	<i>Hibbertia vestita</i>	Hairy Guinea Flower
14:00 END		

4.2. Meander survey — transect 3

Transect 3 was undertaken across the south-eastern portion of the impact area on 22 April 2021. This NCA meander covered approximately 3,122m of mapped Category B (remnant) comprised completely of Of Concern composite RE12.9-10.2/12.9-10.7/12.9-10.19 (65/20/15). Eighty-seven (87) flora species were recorded throughout this transect.

This transect is within the Village 18 impact area east of the existing cleared areas within Village 17 and developed urban areas to the east. As such, disturbances were largely associated with existing tracks and boundaries (refer **Photo Set 4**).

One (1) mapped waterway (Stream Order 1) runs in a north-west direction through Transect 3 area converging with another mapped waterway (Stream Order 2) just north of Transect 3. Topography ranged from approximately 120m ASL to 60m ASL sloping in a north-west direction.

Species recorded within the canopy were consistent with mapped RE12.9-10.17 and included *Eucalyptus carnea* (Broad-leaved White Mahogany), *Eucalyptus major* (Flooded Gum), *Eucalyptus siderophloia* (Grey Ironbark) and *Corymbia citriodora* (Spotted Gum). Other scattered canopy species included *Eucalyptus Crebra* (Narrow-leaved Ironbark), *Eucalyptus tereticornis* (Forest Red Gum), *Angophora leiocarpa* (Smooth-Barked Apple), *Lophostemon confertus* (Brush box) and *Lophostemon saueolens* (Swamp Box) representative of Of Concern RE12.9-10.7 and Least Concern RE 12.9-10.19.

The sub-canopy and shrub layers remain intact. Species recorded were identified as *Acacia disparrima* (Hickory Wattle), *Acacia fimbriata* (Brisbane Wattle), *Acacia leiocalyx* (Early Flowering Black Wattle), *Alphitonia excelsa* (Soap Tree) and *Allocasuarina littoralis* (Black She Oak).

The introduced species recorded were generally associated with disturbed edges and the ground cover, including *Ageratum houstonianum* (Blue Billygoat Weed), *Conzuya sumatrensis* (Tall Fleabane), *Lantana camara* (Lantana), *Lantana montevidensis* (Creeping Lantana), *Megathyrsus maximus* (Guinea Grass), *Melinis repens* (Red Natal Grass), *Oxalis corniculata* (Creeping Oxalis) and *Passiflora suberosa* (Corky Passion Vine).

No threatened or near threatened flora species were recorded throughout this transect, refer **Table 8** for transect details.



Photo Set 4: Disturbed areas along edges and existing access tracks.



Photo Set 5: Steep slopes within Transect 3 area.



Photo Set 6: Typical vegetation within Transect 3 area dominated by RE12.9-10.17.

Table 8: Transect 3 – flora species observed

Time	Species	Common Name
8:35	<i>Corymbia citriodora</i>	Spotted Gum
	<i>Acacia leiocalyx</i>	Early Flowering Black Wattle
	<i>Acacia disparrima</i>	Hickory Wattle
	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany
	<i>Alphitonia excelsa</i>	Soap Tree
	<i>Aristida vagans</i>	Threeawn Speargrass
	<i>Melinis repens</i>	Red Natal Grass
	<i>Poa labillardierei</i>	Common Tussock Grass
	<i>Heteropogon contortus</i>	Black Speargrass
	<i>Gahnia aspera</i>	Saw Sedge

Time	Species	Common Name
	<i>Petalostigma pubescens</i>	Quinine Bush
	<i>Jacksonia scoparia</i>	Dogwood
8:40	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark
	<i>Ottochloa gracillima</i>	Graceful Grass
	<i>Corymbia trachyphloia</i>	Brown Bloodwood
	<i>Eragrostis brownii</i>	Brown's Lovegrass
	<i>Oxalis corniculata</i>	Creeping Oxalis
	<i>Aristida calycina</i>	Dark Wiregrass
	<i>Lantana camara</i>	Lantana
8:45	<i>Boronia rosmarinifolia</i>	Forest Rose
	<i>Breynia oblongifolia</i>	Coffee Bush
	<i>Eucalyptus major</i>	Grey Gum
	<i>Lomandra multiflora</i>	Many Flowered Mat Rush
	<i>Epacris longiflora</i>	Fuchsia Heath
	<i>Phyllanthus virgatus</i>	Creeping Phyllanthus
	<i>Xanthorrhoea johnsonii</i>	Forest Grass Tree
	<i>Imperata cylindrica</i>	Blady Grass
	<i>Corymbia intermedia</i>	Pink Bloodwood
	<i>Megathyrsus maximus</i>	Guinea Grass
	<i>Phyllanthus virgatus</i>	Creeping Phyllanthus
	<i>Eucalyptus siderophloia</i>	Grey Ironbark
	<i>Cheilanthes distans</i>	Bristle Cloak Fern
	<i>Chrysocephalum apiculatum</i>	Yellow Buttons
	<i>Cymbopogon refractus</i>	Barbed Wire Grass
8:50	<i>Lepidosperma laterale</i>	Variable Swordsegde
	<i>Passiflora suberosa</i>	Corky Passion Vine
	<i>Angophora leiocarpa</i>	Smooth-barked Apple
	<i>Allocasuarina littoralis</i>	Black She-oak
	<i>Melichrus procumbens</i>	Jam Tarts
8:45	<i>Lophostemon confertus</i>	Brush Box
	<i>Dianella caerulea</i>	Blue Flax Lily
	<i>Solanum aviculare</i>	Kangaroo Apple

Time	Species	Common Name
	<i>Plectranthus parviflorus</i>	Common Plectranthus
9:00	<i>Eustrephus latifolius</i>	Wombat Berry
	<i>Neonotonia wightii</i>	Green Glycine
	<i>Lobelia purpurascens</i>	White Root
	<i>Themeda triandra</i>	Kangaroo Grass
9:05	<i>Conyza sumatrensis</i>	Tall Fleabane
	<i>Goodenia rotundifolia</i>	Star Goodenia
	<i>Pteridium esculentum</i>	Bracken Fern
	<i>Parsonsia straminea</i>	Monkey Rope
	<i>Acacia fimbriata</i>	Brisbane Wattle
9:15	<i>Lophostemon suaveolens</i>	Swamp Box
	<i>Cassytha pubescens</i>	Devil's Twine
	<i>Lomandra longifolia</i>	Long-leaved Matrush
9:20	<i>Ficus coronata</i>	Sandpaper Fig
	<i>Capillipedium parviflorum</i>	Scented Top Grass
9:25	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark
	<i>Wahlenbergia stricta</i>	Australian Bluebell
	<i>Eucalyptus tereticornis</i>	Forest Red Gum
	<i>Ficus rubiginosa</i>	Rock Fig
9:30	<i>Lantana montevidensis</i>	Creeping Lantana
	<i>Desmodium uncinatum</i>	Silver-leaf Desmodium
	<i>Lotus corniculatus</i>	Bird's-foot Trefoil
	<i>Ochna serrulata</i>	Ochna
	<i>Pultenaea flexilis</i>	Graceful Bush Pea
	<i>Corymbia henryi</i>	Large-leaved Spotted Gum
9:35	<i>Panicum decompositum</i>	Native Millet
	<i>Amyema quandang</i>	Grey Mistletoe
9:40	<i>Polystichum proliferum</i>	Mother Shield Fern
	<i>Ageratum houstonianum</i>	Blue Billygoat Weed
	<i>Corymbia tessellaris</i>	Moreton Bay Ash
	<i>Cayratia clematidea</i>	Slender Grape Vine
9:45	<i>Glycine microphylla</i>	Small-leaf Glycine

Time	Species	Common Name
9:50	<i>Cyperus polystachyos</i>	Bunchy Sedge
9:55	<i>Smilax australis</i>	Barbed-wire Vine
	<i>Schinus terebinthifolius</i>	Broadleaf Pepper Tree
	<i>Bidens pilosa</i>	Cobbler's Pegs
	<i>Paspalum mandiocanum</i>	Broad-leaved Paspalum
	<i>Dodonaea viscosa</i>	Hop Bush
	<i>Callitris gracilis</i>	Rottneest Island Pine
10:05	<i>Synedrella nodiflora</i>	Cinderella Weed
	<i>Pomax umbellata</i>	Pomax
10:10	<i>Opuntia tomentosa</i>	Velvet Tree Pear
10:15	<i>Banksia integrifolia</i>	Coastal Banksia
	<i>Pimelea linifolia</i>	Rice Flower
10:30 END		

4.3. Meander survey — transect 4

Transect 4 was undertaken within the buffer area west of the impact area and Transect 2 on 22 April 2021. This transect traversed predominantly Of Concern composite RE RE12.9-10.2/12.9-10.7/12.9-10.19. A small portion of Endangered RE12.8.24 is located within the furthest north portion of the transect area and is located outside of the impact area. Transect 2 covered approximately 3,969 m and recorded eighty-eight (88) flora species.

Transect 3 area is characterised by steep slopes and rocky outcrops (refer **Photo Set 7**). Topography ranges from approximately 90 ASL to 120m ASL, with the highest elevations located nearest White Rock Spring Mountain Conservation Estate to the south and west of the transect area.

As noted above, Transect 4 area is dominated by the same regional ecosystem mapping as Transect 2 and as such the canopy layer within is dominated species composition more representative of Of Concern RE12.9-10.7 and Least Concern RE12.9-10.19, particularly RE12.9-10.19a. Canopy species include *Angophora leiocarpa* (Smooth-barked Apple), *Corymbia citriodora* (Spotted Gum), *Corymbia henryi* (Large-leaved Spotted Gum), *Corymbia tessellaris* (Moreton Bay Ash), *Eucalyptus carnea* (Broad-leaved White Mahogany), *Eucalyptus fibrosa* (Broad-leaved Red Ironbark), *Eucalyptus major* (Grey Gum) and *Eucalyptus siderophloia* (Grey Ironbark) (refer **Photo Set 7**). Vegetation within this transect was considered more likely to represent these mapped regional ecosystems given the absence of key species including *Eucalyptus crebra* (Narrow-leaved Ironbark).

Although sparse, the sub-canopy and shrub layers are intact as the entire transect is mapped Category B (remnant) vegetation. Species identified included *Acacia disparrima* (Hickory Wattle), *Acacia fimbriata* (Brisbane Wattle), *Allocasuarina littoralis* (Black She Oak), *Alphitonia excelsa* (Soap Tree), *Breynia oblongifolia*

(Coffee Bush), *Callistris gracilis* (Rottneest Island Pine), *Dodonaea viscosa* (Hop Bush) and *Xanthorrhoea johnsonii* (Forest Grass Tree).

Although largely undisturbed, the introduced species were recorded predominantly within the ground layer of transect 2. Species identified included *Ageratum houstonianum* (Blue Billygoat Weed), *Lantana camara* (Lantana), *Lantana montevidensis* (Creeping Lantana), *Megathyrsus maximus* (Guinea Grass), *Oxalis corniculata* (Creeping Oxalis) and *Passiflora suberosa* (Corky Passion Vine) (refer **Photo Set 5**).

Nil threatened or near threatened flora species were recorded throughout this transect, refer **Table 7** for transect details.



Photo Set 7: Transect 3 characterised by steep slopes and rocky outcrops.



Photo Set 8: Typical vegetation within Transect 4.



Photo Set 9: Introduced species observed within Transect 4.

Table 9: Transect 4 – flora species observed

Time	Species	Common Name
10:40am Start	<i>Corymbia trachyphloia</i>	Brown Bloodwood
	<i>Acacia leiocalyx</i>	Early Flowering Black Wattle
	<i>Hibbertia vestita</i>	Hairy Guinea Flower
	<i>Lomandra multiflora</i>	Many Flowered Mat Rush
	<i>Xanthorrhoea johnsonii</i>	Forest Grass Tree
	<i>Poa labillardierei</i>	Common Tussock Grass
	<i>Jacksonia scoparia</i>	Dogwood
	<i>Acacia disparrima</i>	Hickory Wattle
	<i>Angophora leiocarpa</i>	Smooth-barked Apple
	<i>Lepidosperma laterale</i>	Variable Swordsedge
	<i>Cymbopogon refractus</i>	Barbed Wire Grass
	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany
	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark
	<i>Corymbia intermedia</i>	Pink Bloodwood
	<i>Epacris longiflora</i>	Fuchsia Heath
	<i>Aristida vagans</i>	Threeawn Speargrass
	<i>Imperata cylindrica</i>	Blady Grass
	<i>Sporobolus caroli</i>	Fairy Grass
	<i>Dianella caerulea</i>	Blue Flax Lily
10:45am	<i>Corymbia henryi</i>	Large-leaved Spotted Gum

Time	Species	Common Name
	<i>Aristida calycina</i>	Dark Wiregrass
	<i>Themeda triandra</i>	Kangaroo Grass
		Darwinia / Homoranthus
10:50am	<i>Cheilanthes distans</i>	Bristle Cloak Fern
	<i>Phyllanthus virgatus</i>	Creeping Phyllanthus
	<i>Oxalis corniculata</i>	Creeping Oxalis
	<i>Alphitonia excelsa</i>	Soap Tree
	<i>Allocasuarina littoralis</i>	Black She-oak
	<i>Melichrus procumbens</i>	Jam Tarts
	<i>Corymbia citriodora</i>	Spotted Gum
	<i>Passiflora suberosa</i>	Corky Passion Vine
10:55am	<i>Lobelia purpurascens</i>	White Root
	<i>Eucalyptus major</i>	Grey Gum
	<i>Eucalyptus siderophloia</i>	Grey Ironbark
	<i>Conyza sumatrensis</i>	Tall Fleabane
	<i>Gahnia aspera</i>	Saw Sedge
11:00am	<i>Persoonia cornifolia</i>	Geebung
	<i>Heteropogon contortus</i>	Black Speargrass
	<i>Boronia rosmarinifolia</i>	Forest Rose
	<i>Megathyrsus maximus</i>	Guinea Grass
	<i>Chrysocephalum apiculatum</i>	Yellow Buttons
11:05am	<i>Callitris gracilis</i>	Rottneest Island Pine
	<i>Plectranthus parviflorus</i>	Cockspur Flower
	<i>Melinis repens</i>	Red Natal Grass
	<i>Pimelea linifolia</i>	Rice Flower
11:10am	<i>Desmodium intortum</i>	Greenleaf Desmodium
	<i>Lophostemon confertus</i>	Brush Box
	<i>Glycine microphylla</i>	Small-leaf Glycine
11:15am	<i>Cassytha pubescens</i>	Devil's Twine
	<i>Lantana camara</i>	Lantana
	<i>Eucalyptus seeana</i>	Narrow-leaved Red Gum
	<i>Lantana montevidensis</i>	Creeping Lantana

Time	Species	Common Name
	<i>Breynia oblongifolia</i>	Coffee Bush
	<i>Wahlenbergia stricta</i>	Australian Bluebell
	<i>Ageratum houstonianum</i>	Blue Billygoat Weed
	<i>Eustrephus latifolius</i>	Wombat Berry
11:20am	<i>Eragrostis curvula</i>	African Lovegrass
	<i>Eucalyptus cloeziana</i>	Gympie Messmate
	<i>Crotalaria montana</i>	Fuzzy Rattlepod
11:30am	<i>Eragrostis brownii</i>	Brown's Lovegrass
	<i>Opuntia tomentosa</i>	Velvet Tree Pear
11:35am	<i>Petalostigma pubescens</i>	Quinine Bush
	<i>Commelina benghalensis</i>	Wandering Jew
	<i>Dodonaea viscosa</i>	Hop Bush
11:40am	<i>Acacia fimbriata</i>	Brisbane Wattle
	<i>Cyperus polystachyos</i>	Bunchy Sedge
11:45am	<i>Tephrosia glomeruliflora</i>	Pink Tephrosia
11:50am	<i>Glossocardia bidens</i>	Native Cobbler's Pegs
	<i>Pultenaea flexilis</i>	Graceful Bush Pea
11:55am	<i>Sida acuta</i>	Common Wireweed
	<i>Westringia fruticosa</i>	Coastal Rosemary
	<i>Parsonsia straminea</i>	Monkey Rope
	<i>Goodenia rotundifolia</i>	Star Goodenia
	<i>Hardenbergia violacea</i>	Native Sarsaparilla
12:00pm	<i>Capillipedium parviflorum</i>	Scented Top Grass
	<i>Urochloa decumbens</i>	Signal Grass
	<i>Chloris gayana</i>	Rhodes Grass
	<i>Daviesia villifera</i>	Daviesia
12:05pm	<i>Smilax australis</i>	Barbed-wire Vine
	<i>Cryptocarya sp</i>	Laurel
12:15pm	<i>Eucalyptus pilularis</i>	Blackbutt
	<i>Pteridium esculentum</i>	Bracken Fern
	<i>Sida cordifolia</i>	Flannel Weed
	<i>Heliotropium amplexicaule</i>	Blue Heliotrope

Time	Species	Common Name
	<i>Lophostemon suaveolens</i>	Swamp Box
	<i>Eucalyptus tereticornis</i>	Forest Red Gum
	<i>Stephania japonica</i>	Tape Vine
12:20pm	<i>Corymbia tessellaris</i>	Moreton Bay Ash
12:45pm END		

4.4. Meander survey — transect 6

Transect 6 was undertaken across the north-east portion of the impact area 23 April 2021. This NCA meander covered approximately 6,201m of mapped Category B (remnant) vegetation including Endangered RE12.8.24 and Of Concern composite RE12.9-10.2/12.9-10.7/12.9-10.19 (65/20/15). One-hundred and seven (107) flora species were recorded throughout this transect. Transect 6 is dominated by Endangered composite 12.8.24.

This transect is located within the Village 18 impact area, east of Village 17 and existing developed urban areas. As such, disturbances are minimal and only associated with existing access tracks (refer **Photo Set 10**).

Two (2) mapped waterways (Stream Order 1 and Stream Order 3), discussed in Transect 3 converge within the western portion of Transect 6 area forming Woogaroo Creek (refer **Photo 2**). Woogaroo Creek continues north and converges with another mapped Waterway (Stream Order 1). Topography ranges from approximately 60 m ASL associated with Woogaroo Creek to highest point at approximately 130m ASL towards the north.

Although Transect 6 area is predominantly mapped as endangered RE12.8.24, key canopy species including *Eucalyptus crebra* and *Eucalyptus moluccana* were not recorded throughout the transect. Canopy species were considered to evenly represent the regional ecosystems within composite Of Concern RE12.9-10.2/12.9-10.7/12.9-10.19. Canopy species included *Angophora leiocarpa* (Smooth-barked Apple), *Angophora subvelutina* (Broad-leaved Apple), *Angophora woodsiana* (Rough-barked Apple), *Corymbia citriodora* (Spotted Gum), *Corymbia henryi* (Large-leaved Spotted Gum), *Corymbia tessellaris* (Moreton Bay Ash), *Eucalyptus acmenoides* (White Mahogany), *Eucalyptus carnea* (Broad-leaved White Mahogany), *Eucalyptus fibrosa* (Broad-leaved Red Ironbark), *Eucalyptus grandis* (Flooded Gum), *Eucalyptus major* (Grey Gum), *Eucalyptus moluccana* (Gum-topped Box), *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus saligna* (Sydney Blue Gum), *Eucalyptus siderophloia* (Grey Ironbark) (refer **Photo Set 11**).

The sub-canopy and shrub layers remain intact as the transect area is mapped Category B (remnant) vegetation. Species identified included *Acacia disparrima* (Hickory Wattle), *Acacia fimbriata* (Brisbane Wattle), *Acacia leiocalyx* (Early Flowering Black Wattle), *Allocasuarina littoralis* (Black She Oak), *Allocasuarina torulosa* (Forest She Oak), *Alphitonia excelsa* (Soap Tree), *Breynia oblongifolia* (Coffee Bush), *Dodonaea viscosa* (Hop Bush) and *Xanthorrhoea johnsonii* (Forest Grass Tree).

Although largely undisturbed, introduced species were recorded, though predominantly within the ground and shrub layers of Transect 6. Species identified included *Ageratum houstonianum* (Blue Billygoat Weed),

Bidens pilosa (Cobbler's Pegs), *Desmodium intortum* (Greenleaf Desmodium), *Gomphocarpus physocarpus* (Balloon Cotton Bush), *Koelreuteria elegans* (Golden Raintree), *Lantana camara* (Lantana), *Lantana montevidensis* (Creeping Lantana), *Megathyrsus maximus* (Guinea Grass), *Nephrolepis cordifolia* (Fishbone Fern), *Opuntia stricta* (Prickly Pear), *Oxalis stricta* (Yellow Woodsorrel), *Passiflora suberosa* (Corky Passion Vine) and *Senecio madagascariensis* (Fireweed).



Photo Set 10: Disturbed areas largely associated with existing tracks within Transect 6.



Photo Set 11: Typical vegetation within Transect 6.



Photo 2: Woogaroo Creek.

Table 10: Transect 6 – flora species observed

Time	Species	Common Name
9:45 AM	<i>Eucalyptus siderophloia</i>	Grey Ironbark
	<i>Corymbia citriodora</i>	Spotted Gum
	<i>Acacia leiocalyx</i>	Early Flowering Black Wattle
	<i>Alphitonia excelsa</i>	Soap Tree
	<i>Dianella caerulea</i>	Blue Flax Lily
	<i>Gahnia aspera</i>	Saw Sedge
	<i>Aristida calycina</i>	Dark Wire Grass
	<i>Aristida vagans</i>	Threeawn Speargrass
	<i>Lantana camara</i>	Lantana
	<i>Phyllanthus virgatus</i>	Phyllanthus
	<i>Commelina diffusa</i>	Wandering Jew

Time	Species	Common Name
	<i>Cymbopogon refractus</i>	Barbed Wire Grass
	<i>Poa labillardieri</i>	Tussock Grass
	<i>Imperata cylindrica</i>	Blady Grass
	<i>Corymbia intermedia</i>	Pink Bloodwood
	<i>Sporobolus africanus</i>	Paramatta Grass
	<i>Lomandra multiflora</i>	Many Flowered Mat Rush
9:50 AM	<i>Angophora leiocarpa</i>	Smooth Bark Apple
	<i>Eucalyptus tereticornis</i>	Forest Red Gum
	<i>Megathyrsus maximus</i>	Guinea Grass
	<i>Jacksonia scoparia</i>	Dogwood
	<i>Conyza sumatrensis</i>	Tall Fleabane
	<i>Sida cordifolia</i>	Flannel Weed
	<i>Oxalis stricta</i>	Yellow Woodsorrel
	<i>Lantana montevidensis</i>	Creeping Lantana
	<i>Melinis repens</i>	Red Natal Grass
	<i>Plectranthus parviflorus</i>	Plectranthus
	<i>Glycine microphylla</i>	Glycine
	<i>Cheilanthes distans</i>	Bristle Cloak Fern
	<i>Passiflora suberosa</i>	Corky Passion Vine
	<i>Cassytha pubescens</i>	Devil's Twine
	<i>Panicum decompositum</i>	Native Millet
	<i>Chrysocephalum apiculatum</i>	Yellow Buttons
9:55 AM	<i>Lobelia purpurascens</i>	White Root
	<i>Eucalyptus acmenoides</i>	White Mahogany
	<i>Heteropogon contortus</i>	Blackspear Grass
	<i>Desmodium intortum</i>	Greenleaf Desmodium
	<i>Eucalyptus carnea</i>	Broad Leaf White Mahogany
	<i>Melichrus procumbens</i>	Jam Tarts
	<i>Acacia fimbriata</i>	Fringed Wattle
	<i>Eragrostis bronwii</i>	Brown's Love Grass
	<i>Opuntia stricta</i>	Prickly Pear
	<i>Eustrephus latifolius</i>	Wombat Berry

Time	Species	Common Name
	<i>Dillwynia retorta</i>	Heathy Parrot Pea
10:00 AM	<i>Lophostemon confertus</i>	Brush Box
	<i>Xanthorrhoea johnsonii</i>	Grass Tree
	<i>Hardenbergia violacea</i>	Native Sarsparilla
	<i>Acacia disparrima</i>	Hickory Wattle
	<i>Drynaria rigidula</i>	Basket Fern
	<i>Senecio madagascariensis</i>	Fireweed
	<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush
10:05 AM	<i>Nephrolepis cordifolia</i>	Fishbone Fern
	<i>Bidens pilosa</i>	Cobbler's Pegs
	<i>Lobelia inflata</i>	Indian Tobacco
	<i>Allocasuarina torulosa</i>	Forest She Oak
	<i>Goodenia rotundifolia</i>	Goodenia
	<i>Pultenaea euchila</i>	Orange Pultenaea
	<i>Buursaria spinosa</i>	Black Thorn
	<i>Daviesia umbellulata</i>	Daviesia
	<i>Eucalyptus fibrosa</i>	Broad-leaved Ironbark
	<i>Cayratia clematidea</i>	Slender Grape
	<i>Eremophila deblis</i>	Winter Apple
10:10 AM	<i>Cyperus polystachyos</i>	Bunchy Sedge
	<i>Lepidosperma laterale</i>	Variable Swordsedge
	<i>Allocasuarina littoralis</i>	Black She Oak
	<i>Oplismenus aemulus</i>	Creeping Beard Grass
10:15 AM	<i>Eucalyptus pilularis</i>	Blackbutt
	<i>Corymbia tessellaris</i>	Moreton Bay Ash
	<i>Capillipedium spicigerum</i>	Scentop Top Grass
	<i>Ageratum houstonianum</i>	Blue Billygoat Weed
	<i>Juncus usitatus</i>	Common Juncus
10:20 AM	<i>Crotalaria lanceolata</i>	Lance-leaved Rattlepod
	<i>Sida rhombifolia</i>	Arrowleaf Sida
	<i>Koelreuteria elegans</i>	Golden Rain Tree
	<i>Celtis sinensis</i>	Chinese Elm

Time	Species	Common Name
	<i>Eucalyptus saligna</i>	Sydney Blue Gum
10:25 AM	<i>Pteridium esculentum</i>	Bracken
	<i>Trema tomentosa</i>	Poison Peach
	<i>Lomandra longifolia</i>	Mat Rush
	<i>Ipomoea plebeia</i>	Bell Vine
10:30 AM	<i>Lophostemon sueveolens</i>	Swamp Box
	<i>Banksia integrifolia</i>	Coastal Banksia
	<i>Petelostigma pubescens</i>	Quinine Bush
10:35 AM	<i>Cassia pendula</i>	Smooth Cassia
	<i>Heliotropium amplexicaule</i>	Blue Heliotrope
10:45 AM	<i>Cynodon dactylon</i>	Green Couch
	<i>Eucalyptus major</i>	Grey Gum
10:55 AM	<i>Corymbia henryii</i>	Large-leaved Spotted Gum
11:00 AM	<i>Solanum nigrum</i>	Blackberry Nightshade
11:30 AM	<i>Hybanthus stellarioides</i>	Spade Flower
11:35 AM	<i>Paspalum mandiocanum</i>	Broad-leaved Paspalum
	<i>Dodonaea viscosa</i>	Hop Bush
11:40 AM	<i>Angophora subvelutina</i>	Broad-leaved Apple
11:45 AM	<i>Adiantum atroviride</i>	Maidenhair Fern
	<i>Cestrum parqui</i>	Green Cestrum
	<i>Pennisetum purpureum</i>	Elephant Grass
	<i>Phragmites australis</i>	Common Reed
	<i>Smilax australis</i>	Barbed Wire Vine
	<i>Setaria sphacelata</i>	South African Pigeon Grass
11:50 AM	<i>Rubus parvifolius</i>	Pink Flowered Native Raspberry
	<i>Melaleuca viminalis</i>	Weeping Bottlebrush
12:00	<i>Stephania japonica</i>	Tape Vine
	<i>Wahlenbergia graniticola</i>	Bluebell
12:10 PM	<i>Breynia oblongifolia</i>	Coffee Bush
	<i>Eragrostis curvula</i>	African Lovegrass
	<i>Angophora woodsiana</i>	Rough-barked Apple
12:15 PM	<i>Eucalyptus grandis</i>	Flooded Gum

Time	Species	Common Name
12:40 PM	<i>END</i>	

5. Summary

Field surveys were carried out by Saunders Havill Group on behalf of Lendlease Communities (Springfield) Pty Ltd within the project site located at London Avenue, Spring Mountain in association with the Springfield Rise estate development. The impact area is mapped as 'High Risk' on the Protected Plants Flora Survey Trigger Map which triggers the requirements for protected plant surveys to be completed prior to any clearing work. A flora survey was undertaken by two (2) Ecologists from Saunders Havill Group across the impact area to ascertain if protected plant specimens were present and would therefore be impacted by the pending clearing activities. The surveys utilised the preferred random meander techniques as outlined in the *Flora Survey Guidelines – Protected Plants* (DES 2020) to detect threatened or near threatened flora species. Four meanders within two habitat types were completed over the impact area (clearing and buffer areas) in accordance with the guidelines.

Surveys transects covered 17,921 m and **did not detect any threatened or near threatened flora species within the impact area.**

6. Appendices

Appendix A

Curricula Vitae

Appendix B

Wildlife Online Extract

Nature Conservation Act 1992

Appendix C

Flora Survey Species List

Appendix A

Curricula Vitae

Senior Ecologist – David Havill

David Havill – 20.04.2021

David Havill has significant practical experience in the areas of ecological site assessments (flora and fauna), weed management programs, large scale revegetation projects, wetland rehabilitation and waterway restoration.

He has a strong understanding of the intricate workings of the *Vegetation Management Act 1999*, *Nature Conservation Act 1992* and *Environment Protection and Biodiversity Conservation Act 1999* and the complex codes and policies which influence site vegetation constraints.

David's expertise relates to the on-site identification and spatial mapping of fauna and flora species including endangered, rare and vulnerable plants and animals. He has an accurate understanding of site survey processes and standards developed by the State and Commonwealth Governments. This provides the ability to challenge the various inaccuracies that occur within broad scale vegetation mapping developed by these Government agencies.

David works closely with our in-house team of GIS, environmental planning, and landscape rehabilitation specialists to document findings of ecological survey and prepare targeted restoration and rehabilitation strategies. He has a strong understanding of construction techniques associated with development projects and can prepare practical flora and fauna management plans to assist in guiding the construction process within sensitive areas.

Qualifications

Bachelor of Applied Science (Natural Systems and Wildlife Management), The University of Queensland (1998).

Self-Assessment

Qualification / Experience	Condition	Evidence	Points
A relevant qualification from a recognised institution (e.g. University, TAFE) that results in a thorough knowledge of plant identification and flora surveys.	Queensland focussed	Bachelor of Applied Science (Natural Systems and Wildlife Management), The University of Queensland (1998)	50
Experience within the last 2 years and a total of at least 5 years at leading flora surveys in a field-based environment at a rate of no less than 5 comprehensive botanical surveys that focus on locating and identifying EVNT plants, per year.	Qld based field flora surveys experience	Specific experience carrying out NCA protected plants surveys provided in the table below. David carries out numerous flora and fauna surveys every year. Additional information on specific projects can be provided on request.	60
TOTAL			110

Applicant	Street Address / Lot on Plan	DES Exemption / Permit	Date Issued
Boral Resources Pty Ltd	Lot 8 & 9 Plan RP749301	WIPA15213114	16/10/2014
Boral Resources Pty Ltd	720 Moy Pocket Road, Moy Pocket	AR083681	16/02/2016
Boral Resources Pty Ltd	580 Upper Ormeau Road, Kingsholme	Not provided	21/11/2016
Varsity Property Pty Ltd ATF Varsity Development Unit Trust	Weale Street, Mount Kynoch	AR095583	30/11/2016
Lend Lease Communities (Springfield) Pty Ltd	Sinnathamby Boulevard, Springfield	AR09563	12/12/2016
Frasers Property Bahrs Scrub Pty Ltd	Sinnathamby Boulevard, Springfield	AR095953	23/01/2017 (surveys completed in 2016)
Lend Lease Communities (Springfield) Pty Ltd	Sinnathamby Boulevard, Springfield	AR098350	01/03/2017
Lend Lease Communities (Springfield) Pty Ltd	Sinnathamby Boulevard, Springfield	AR098906	14/03/2017
Lend Lease Communities (Springfield) Pty Ltd	Menora Road, Bahrs Scrub	AR100016	21/04/2017
Lend Lease Communities (Springfield) Pty Ltd	Sinnathamby Boulevard, Springfield	AR101106	29/05/2017
Time Investments Pty Ltd	34-80 Stegalls Road, Yandina	AR101049	29/05/2017
Villa Green Pty Ltd	Pub Lane, Greenbank	APP0013977	15/02/2018
Springfield City Group Pty Limited	LOT 62, 63, 65, 66 & 67 Plan SP291400	APP0015371	09/03/2018
Stockland Development Pty Ltd	LOT 9997, 9000 and 9002 Plan SP292760	APP0015654	19/03/2018
Peet No. 119 Pty Ltd	LOT 2/RP47120	APP0015925	12/04/2018
Boral Resources Pty Ltd	Lot 8 & 9 Plan RP749301	APP0016964	20/04/2018

Applicant	Street Address / Lot on Plan	DES Exemption / Permit	Date Issued
Frasers Property Pty Ltd	Lot 281 Plan SP283121	APP0017471	03/05/2018
Podium Property Group	95-107 Logan Reserve Rd WATERFORD WEST QLD 4133	APP0019173	14/06/2018
QM Properties Pty Ltd	LOT 850/SP297470 and LOT 851/SP297470	APP0019193	14/06/2018
Celestino Pty Ltd	LOT 800 /sp247625, LOT 101/sp254145, LOT 102/sp254145, LOT 104/sp254145, LOT 105/sp254145 and LOT 106/sp254145	APP0016941	22/06/2018
Frasers Property Australia	Menora Road, Bahrs Scrub	APP0020142	13/07/2018
Frasers Property Australia	Menora Road, Bahrs Scrub	APP0021378	01/08/2018
Mirvac Queensland Pty Ltd	LOT 1/sp297192	APP0020125	24/08/2018
Ventura 2018 Pty Ltd	LOT 117/RP87803, LOT 118/RP87803 and LOT 119/RP87803	APP0023338	12/09/2018
Impact Developments	LOT 3/RP101021	APP0024076	26/09/2018
Lexen Pty Ltd	LOT 37/SP185150	APP0024047	26/09/2018
Boral Resources (Qld) Pty Ltd	Lot 43/SP243239 and Lot 1/RP164904	APP0024984	16/10/2018
Lendlease Communities (Springfield) Pty Ltd	LOT 750/SP189053 and	APP0025073	18/10/2018
Philip User Constructions	LOT 901/SP264807	APP0025508	29/10/2018
Springfield City Group Pty Ltd	LOT 8/SP291381, LOT 7/SP291381 and LOT 9014/SP301015	APP0026176	09/11/2018
Backshall Group Pty Ltd	LOT 2/SP241230 and 77 Darlington Drive YATALA QLD 4207	APP0026862	21/11/2018
Boral Resources (Qld) Pty Ltd	Lot 4/RP159242 and Lot 1/SP221900	APP0026944	22/11/2018
Boral Resources (Qld) Pty Ltd	LOT 171/SP269293	APP0029212	21/12/2018

Applicant	Street Address / Lot on Plan	DES Exemption / Permit	Date Issued
Diligent Development Pty Ltd	471-479 Chambers Flat Rd PARK RIDGE QLD 4125	APP0030307	10/01/2019
Orchard Property Group Pty Ltd	LOT 6/RP193185 and LOT 9/SP203507	APP0030600	14/01/2019
Canberra Estates Consortium No36 Pty Ltd	LOT 5007/SP266999	APP0032245	12/02/2019
Peet No. 119 Pty Ltd	LOT 89/SL4604	APP0032644	19/02/2019
Urbex Pty Ltd	LOT 48/MAR619	APP0033564	08/03/2019
Canberra Estates Consortium No36 Pty Ltd	LOT 5007/SP266999, LOT 5/RP221982 and LOT 519/SL10400	APP0034679	01/04/2019
Urbex Pty Ltd	LOT 9/RP170908 and LOT 6/RP154403	APP0034802	04/04/2019
Stockland Development Pty Ltd	LOT 207/CH31135	APP0035363	18/04/2019
Lendlease Communities (Springfield) Pty Ltd	LOT 4100/SP304382	APP0035536	24/04/2019
Blue Care	LOT 650/CP841247	APP0035228	02/05/2019
Canberra Estates Consortium No36 Pty Ltd	LOT 5007/SP266999, LOT 5/RP221982 and LOT 519/SL10400	APP0036790	28/05/2019
Lendlease Communities (Springfield) Pty Ltd	LOT 909/SP300997, LOT 900/SP297531 and LOT 9019/SP303695	APP0037855	21/06/2019
Frasers Property Pty Ltd	LOT 8014/SP162774 and LOT 817/SP301196	APP0038058	27/06/2019
Lendlease Communities (Springfield) Pty Ltd	LOT 5/SP291381	APP0038502	08/07/2019
QM Properties	LOT 1/SP101489	APP0038230	12/09/2019
Golf Links Land Development Pty Ltd	LOT 1/sp304751, LOT 2/sp304751, LOT 97/RP102544 and LOT 98/RP102544	APP0041324	13/09/2019
Sekisui House Australia Holdings	LOT 1007/SP311770	APP0041878	26/09/2019

Applicant	Street Address / Lot on Plan	DES Exemption / Permit	Date Issued
Orchard (Daleys) Development Pty Ltd	LOT 1/RP186731, LOT 329/S3157, LOT 330/SP271650, LOT 321/SP187287 and LOT 902/SP187287	APP0040886	16/10/2019
Orchard (Lakeview) Developments Pty Ltd	LOT 321/SP187287	APP0044333	20/11/2019
Frasers Property Australia	LOT 218/SP283121, LOT 207/CH31135, LOT 1/RP186731 and LOT 191/CC1874	APP0039567	28/11/2019
Peet Limited	Lot 1/SP242604, LOT 1018/SP308022 and LOT 903/SP238670	APP0049618	21/02/2020
Westera Partners Pty Ltd	1991 - 1777 Chambers Flat Rd Chambers Flat CHAMBERS FLAT QLD 4133	APP0056620	09/07/2020
Celestino Pty Ltd	LOT 800 /sp247625, LOT 101/sp254145, LOT 102/sp254145, LOT 104/sp254145, LOT 105/sp254145 and LOT 106/sp254145	APP0056543	01/09/2020
Mirvac Queensland Pty Ltd	LOT 9001/SP300875, LOT 9002/SP317644 and LOT 9003/SP317644	APP0057006	23/08/2020
Frasers Property Australia	Menora Road BAHRS SCRUB QLD 4207	APP0058927	24/08/2020
Conmus Enterprises Pty Ltd	LOT 906/SP291413	APP0059060	26/08/2020
Boral Resources Pty Ltd	Lot 43/SP243239 and Lot 1/RP164904	APP0061749	16/10/2020
Orchard (Daleys) Development Pty Ltd	LOT 3/RP180932, LOT 5/RP180932 and LOT 6/RP180932	APP0064210	26/11/2020
Halcyon Developments No. 9 Pty Ltd	LOT 3/SP283716, LOT 3/RP160702, LOT 3/RP202269, LOT 1/RP175851, LOT 1/RP149090 and LOT 2/RP202269	APP0066291	18/12/2020

Applicant	Street Address / Lot on Plan	DES Exemption / Permit	Date Issued
Boral Resources Pty Ltd	Lot 8/RP749301 and Lot 9/RP749301	APP0067610	06/01/2021
Orchard (Daleys) Development Pty Ltd	LOT 5/RP180932 and LOT 6/RP180932	APP0066297	11/02/2021
Chris Orr	63 Haven Road Upper Brookfield UPPER BROOKFIELD QLD 4069	APP0070497	17/02/2021
Canberra Estates Consortium No36 Pty Ltd	LOT 5007/SP317659	APP0073043	30/03/2021
Defence Housing Australia – Property Provisioning Group	LOT 7000/SP307619	APP0073828	13/04/2021

Appendix B

Wildlife Online Extract

Nature Conservation Act 1992



Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: Plants (including other non-animals such as fungi and protists)
Type: All
Status: Rare and threatened species
Records: Confirmed
Date: Since 1980
Latitude: -27.6843
Longitude: 152.8858
Distance: 5
Email: laurathorley@saundershavill.com
Date submitted: Tuesday 27 Apr 2021 11:51:06
Date extracted: Tuesday 27 Apr 2021 12:00:17

The number of records retrieved = 5

Disclaimer

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

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

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

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Apocynaceae	<i>Marsdenia coronata</i>	slender milkvine		V		7/7
plants	land plants	Lamiaceae	<i>Coleus habrophyllus</i>			E	E	13/13
plants	land plants	Myrtaceae	<i>Rhodamnia maideniana</i>	smooth scrub turpentine		CR		1/1
plants	land plants	Myrtaceae	<i>Melaleuca irbyana</i>			E		3/3
plants	land plants	Myrtaceae	<i>Eucalyptus curtisii</i>	Plunkett mallee		NT		2/2

CODES

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

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*. The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ().

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

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

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

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

Appendix C

Flora Survey Species List

Species	Common Name
<i>Acacia disparrima</i>	Hickory Wattle
<i>Acacia fimbriata</i>	Brisbane Wattle
<i>Acacia leiocalyx</i>	Early Flowering Black Wattle
<i>Adiantum atroviride</i>	Maidenhair Fern
<i>Ageratum houstonianum</i>	Blue Billygoat Weed
<i>Allocasuarina littoralis</i>	Black She-oak
<i>Allocasuarina torulosa</i>	Forest She Oak
<i>Alphitonia excelsa</i>	Soap Tree
<i>Alternanthera brasiliiana</i>	Purple Joyweed
<i>Amyema quandang</i>	Grey Mistletoe
<i>Angophora leiocarpa</i>	Smooth-barked Apple
<i>Angophora subvelutina</i>	Broad-leaved Apple
<i>Angophora woodsiana</i>	Rough-barked Apple
<i>Aristida calycina</i>	Dark Wiregrass
<i>Aristida vagans</i>	Threeawn Speargrass
<i>Asplenium australasicum</i>	Bird's Nest Fern
<i>Baccharis halimifolia</i>	Groundsel
<i>Banksia integrifolia</i>	Coastal Banksia
<i>Bidens pilosa</i>	Cobbler's Pegs
<i>Boronia rosmarinifolia</i>	Forest Rose
<i>Bothriochloa decipiens</i>	Pitted Blue Grass
<i>Breynia oblongifolia</i>	Coffee Bush
<i>Buursaria spinosa</i>	Black Thorn
<i>Callitris gracilis</i>	Rottnest Island Pine
<i>Capillipedium parviflorum</i>	Scented Top Grass
<i>Capillipedium spicigerum</i>	Scentop Top Grass
<i>Cassia pendula</i>	Smooth Cassia
<i>Cassytha pubescens</i>	Devil's Twine
<i>Cayratia clematidea</i>	Slender Grape Vine
<i>Celtis sinensis</i>	Chinese Elm
<i>Cestrum parqui</i>	Green Cestrum
<i>Cheilanthes distans</i>	Bristle Cloak Fern

Species	Common Name
<i>Chloris gayana</i>	Rhodes Grass
<i>Chrysocephalum apiculatum</i>	Yellow Buttons
<i>Commelina benghalensis</i>	Wandering Jew
<i>Commelina diffusa</i>	Wandering Jew
<i>Conyza sumatrensis</i>	Tall Fleabane
<i>Corymbia citriodora</i>	Spotted Gum
<i>Corymbia henryi</i>	Large-leaved Spotted Gum
<i>Corymbia intermedia</i>	Pink Bloodwood
<i>Corymbia tessellaris</i>	Moreton Bay Ash
<i>Corymbia trachyphloia</i>	Brown Bloodwood
<i>Crotalaria lanceolata</i>	Lance-leaved Rattlepod
<i>Crotalaria montana</i>	Fuzzy Rattlepod
<i>Cryptocarya sp</i>	Laurel
<i>Cymbopogon refractus</i>	Barbed Wire Grass
<i>Cynodon dactylon</i>	Green Couch
<i>Cyperus polystachyos</i>	Bunchy Sedge
<i>Daviesia umbellulata</i>	Daviesia
<i>Daviesia villifera</i>	Daviesia
<i>Desmodium intortum</i>	Greenleaf Desmodium
<i>Desmodium uncinatum</i>	Silver-leaf Desmodium
<i>Dianella caerulea</i>	Blue Flax Lily
<i>Dichondra repens</i>	Kidney Weed
<i>Dillwynia retorta</i>	Heathy Parrot Pea
<i>Dillwynia sp.</i>	Parrot Pea
<i>Dodonaea viscosa</i>	Hop Bush
<i>Drynaria rigidula</i>	Basket Fern
<i>Epacris longiflora</i>	Fuchsia Heath
<i>Eragrostis bronwii</i>	Brown's Love Grass
<i>Eragrostis curvula</i>	African Lovegrass
<i>Eragrostis curvula</i>	African Lovegrass
<i>Eremophila debilis</i>	Winter Apple
<i>Eucalyptus acmenoides</i>	White Mahogany

Species	Common Name
<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany
<i>Eucalyptus cloeziana</i>	Gympie Messmate
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark
<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark
<i>Eucalyptus grandis</i>	Flooded Gum
<i>Eucalyptus major</i>	Grey Gum
<i>Eucalyptus microcorys</i>	Tallowwood
<i>Eucalyptus pilularis</i>	Blackbutt
<i>Eucalyptus saligna</i>	Sydney Blue Gum
<i>Eucalyptus seeana</i>	Narrow-leaved Red Gum
<i>Eucalyptus siderophloia</i>	Grey Ironbark
<i>Eucalyptus tereticornis</i>	Forest Red Gum
<i>Eustrephus latifolius</i>	Wombat Berry
<i>Ficus coronata</i>	Sandpaper Fig
<i>Ficus rubignosa</i>	Rock Fig
<i>Gahnia aspera</i>	Saw Sedge
<i>Glossocardia bidens</i>	Native Cobbler's Pegs
<i>Glycine microphylla</i>	Small-leaf Glycine
<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush
<i>Goodenia rotundifolia</i>	Star Goodenia
<i>Grewia latifolia</i>	Dog's Balls
<i>Hardenbergia violacea</i>	Native Sarsparilla
<i>Heliotropium amplexicaule</i>	Blue Heliotrope
<i>Heteropogon contortus</i>	Black Speargrass
<i>Hibbertia vestita</i>	Hairy Guinea Flower
<i>Hybanthus stellarioides</i>	Spade Flower
<i>Imperata cylindrica</i>	Blady Grass
<i>Ipomoea plebeia</i>	Bell Vine
<i>Jacksonia scoparia</i>	Dogwood
<i>Juncus usitatus</i>	Common Juncus
<i>Koelreuteria elegans</i>	Golden Rain Tree
<i>Lantana camara</i>	Lantana

Species	Common Name
<i>Lantana montevidensis</i>	Creeping Lantana
<i>Lepidosperma laterale</i>	Variable Swordsegde
<i>Lobelia inflata</i>	Indian Tobacco
<i>Lobelia purpurascens</i>	White Root
<i>Lomandra longifolia</i>	Mat Rush
<i>Lomandra multiflora</i>	Many Flowered Mat Rush
<i>Lophostemon confertus</i>	Brush Box
<i>Lophostemon suaveolens</i>	Swamp Box
<i>Lotus corniculatus</i>	Bird's-foot Trefoil
<i>Macroptilium lathyroides</i>	Phasey Bean
<i>Megathyrsus maximus</i>	Guinea Grass
<i>Melaleuca viminalis</i>	Weeping Bottlebrush
<i>Melichrus procumbens</i>	Jam Tarts
<i>Melinis repens</i>	Red Natal Grass
<i>Neonotonia wightii</i>	Green Glycine
<i>Nephrolepis cordifolia</i>	Fishbone Fern
<i>Nephrolepis exaltata</i>	Fishbone Fern
<i>Ochna serrulata</i>	Ochna
<i>Oplismenus aemulus</i>	Creeping Beard Grass
<i>Opuntia stricta</i>	Prickly Pear
<i>Opuntia tomentosa</i>	Velvet Tree Pear
<i>Ottochloa gracillima</i>	Graceful Grass
<i>Oxalis corniculata</i>	Creeping Oxalis
<i>Oxalis stricta</i>	Yellow Woodsorrel
<i>Panicum decompositum</i>	Native Millet
<i>Parsonsia straminea</i>	Monkey Rope
<i>Paspalum mandiocanum</i>	Broad-leaved Paspalum
<i>Passiflora suberosa</i>	Corky Passion Vine
<i>Pennisetum pureum</i>	Elephant Grass
<i>Persoonia cornifolia</i>	Geebung
<i>Petalostigma pubescens</i>	Quinine Bush
<i>Phragmites australis</i>	Common Reed

Species	Common Name
<i>Phyllanthus virgatus</i>	Creeping Phyllanthus
<i>Pimelea linifolia</i>	Rice Flower
<i>Plectranthus parviflorus</i>	Common Plectranthus
<i>Poa labillardieri</i>	Tussock Grass
<i>Polystichum proliferum</i>	Mother Shield Fern
<i>Pomax umbellata</i>	Pomax
<i>Prunus spinosa</i>	Black Thorn
<i>Pteridium esculentum</i>	Bracken
<i>Pultenaea euchila</i>	Orange Pultenaea
<i>Pultenaea flexilis</i>	Graceful Bush Pea
<i>Pultenaea villosa</i>	Hair Pea Bush
<i>Rubus parvifolius</i>	Pink Flowered Native Raspberry
<i>Schinus terebinthifolius</i>	Broadleaf Pepper Tree
<i>Senecio madagascariensis</i>	Fireweed
<i>Setaria sphacelata</i>	South African Pigeon Grass
<i>Sida acuta</i>	Common Wireweed
<i>Sida cordifolia</i>	Flannel Weed
<i>Sida rhombifolia</i>	Arrowleaf Sida
<i>Smilax australis</i>	Barbed Wire Vine
<i>Solanum aviculare</i>	Kangaroo Apple
<i>Solanum nigrum</i>	Blackberry Nightshade
<i>Sporobolus africanus</i>	Paramatta Grass
<i>Sporobolus caroli</i>	Fairy Grass
<i>Sporobolus pyramidalis</i>	Giant Rat's Tail Grass
<i>Stephania japonica</i>	Tape Vine
<i>Synedrella nodiflora</i>	Cinderella Weed
<i>Tagetes minuta</i>	Southern Cone Marigold
<i>Tephrosia glomeruliflora</i>	Pink Tephrosia
<i>Themeda triandra</i>	Kangaroo Grass
<i>Tipuana tipu</i>	Tipuana
<i>Tradescantia spathacea</i>	Sitaria
<i>Trema tomentosa</i>	Poison Peach

Species	Common Name
<i>Urochloa decumbens</i>	Signal Grass
<i>Wahlenbergia graniticola</i>	Bluebell
<i>Wahlenbergia stricta</i>	Australian Bluebell
<i>Westringia fruticosa</i>	Coastal Rosemary
<i>Xanthorrhoea johnsonii</i>	Forest Grass Tree
<i>Xanthorrhoea johnsonii</i>	Grass Tree

Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 5

Coleus habrophyllus survey and sign-off by Environmental Coordinator

Our ref: 7927

1 February 2022

Attention: Ian Murray
Lendlease Communities (Australia) Limited
Via email: Ian.Murray@lendlease.com

Dear Ian

RE: WOOGAROO HEIGHTS: COLEUS HABROPHYLLUS PRE-CLEARANCE SURVEY

This letter provides confirmation that the Environmental Management Division of **Saunders Havill Group** was engaged by **Lendlease Communities** to undertake a pre-clearance survey for *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) threatened flora species *Coleus habrophyllus* within the proposed clearing extent for Woogaroo Heights.

It is noted that *Coleus habrophyllus* populations were recorded in the adjacent Springfield Rise by **Yurrah** (refer to **Attachment 1**). A flora survey conducted by SHG in 2021 did not detect any *Coleus habrophyllus* specimens within the works extent or within 100 m of the clearing extent area. A protected plants clearing exemption was issued by DES (Ref: APP0075497). A contemporary survey of the Woogaroo Heights clearing area in the form of a meander survey was undertaken on 27 January 2022 which further confirms no *C. habrophyllus* specimens are present (refer **Attachment 2**).

Yours sincerely

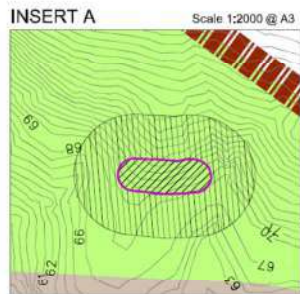
A handwritten signature in black ink, appearing to read 'Murray Saunders', written over a horizontal line.

Murray Saunders
Director - Saunders Havill Group

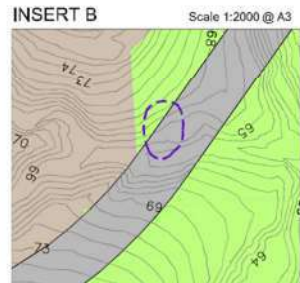
Attachment 1 – *Coleus habrophyllus* Survey by Yurrah

CONCEPT MANAGEMENT PLAN

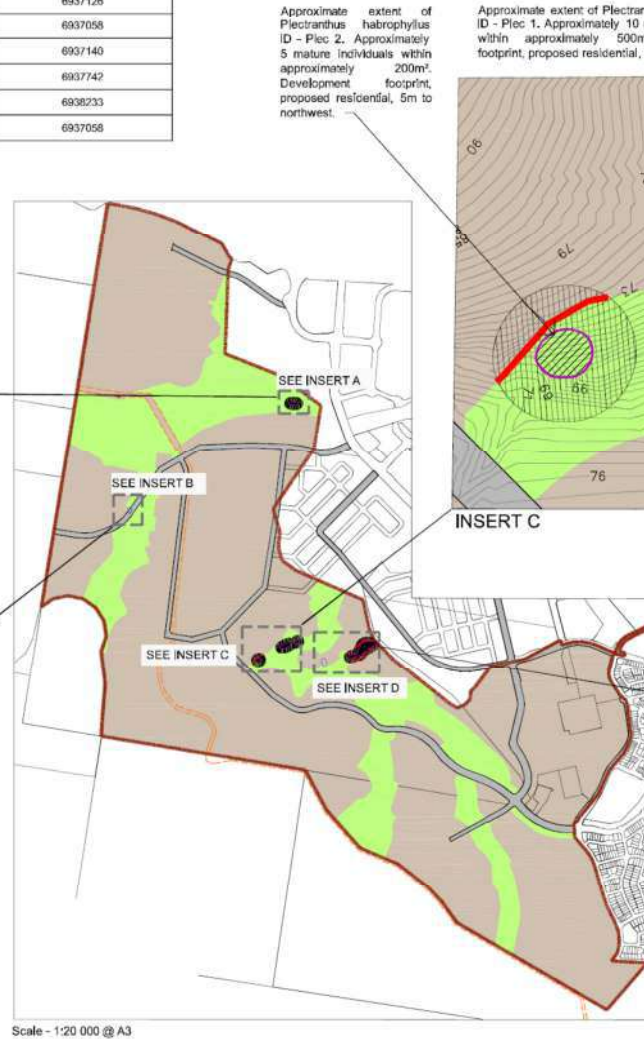
GPS Locations of <i>Plectranthus habrophyllus</i> populations UTM Zone 56 J		
ID	Latitude	Longitude
Plec 1	489651	6937126
Plec 2	489534	6937058
Plec 3	490045	6937140
Plec 4	488935	6937742
Plec 5	489700	6938233
Plec 6	489623	6937058



Approximate extent of *Plectranthus habrophyllus* sub-population (ID - Plec 5). Approximately 5 mature individuals within approximately 500m². 127m from development footprint to the south.



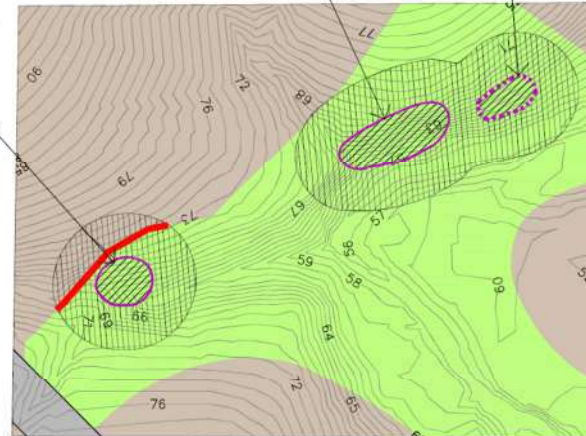
Approximate extent of *Plectranthus habrophyllus* ID - Plec 4. Approximately 5 mature individuals within approximately 400m². Population will require translocation into Linear Open Space. See Insert C. The road is located in this alignment to minimise earthworks within the linear open space and development areas. The southeast regional pipeline is located along the ridge to the west and controls the level of the road as it crosses this linear open space area.



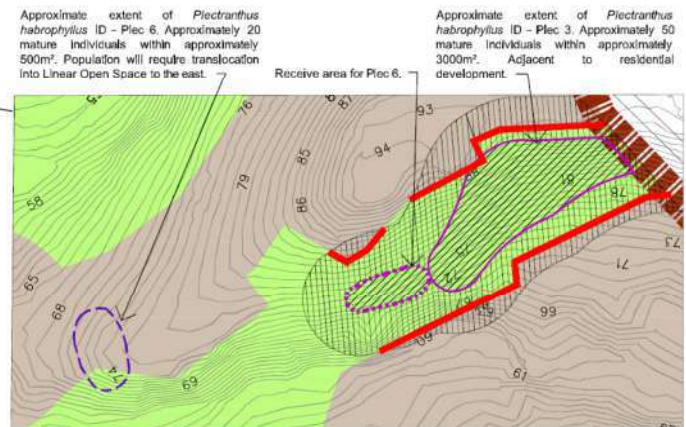
Approximate extent of *Plectranthus habrophyllus* ID - Plec 2. Approximately 5 mature individuals within approximately 200m². Development footprint, proposed residential, 5m to northwest.

Approximate extent of *Plectranthus habrophyllus* ID - Plec 1. Approximately 10 mature individuals within approximately 500m². Development footprint, proposed residential, 20m to northwest.

Receive area for Plec 4.



Scale 1:2000 @ A3



Scale 1:2000 @ A3

LEGEND

E2 Precinct Boundary

Proposed Development Layout

Development footprint - use other than for conservation purposes

Linear Open Space - managed for conservation purposes

Management Plan Core Conservation Areas - *Plectranthus habrophyllus* population location

Where adjacent to an area identified for 'Interface Management' additional management actions required during clearing and construction. Refer Threatened Flora Management Plan Section 3.2.2. Refer Section 3.3 for ongoing habitat management.

In-situ population.

Receive area - translocated population.

Management Plan Buffer Area

Buffer Area overlapping development area. Considered detailed design required. Refer Threatened Flora Management Plan Section 3.2.1 for more information.

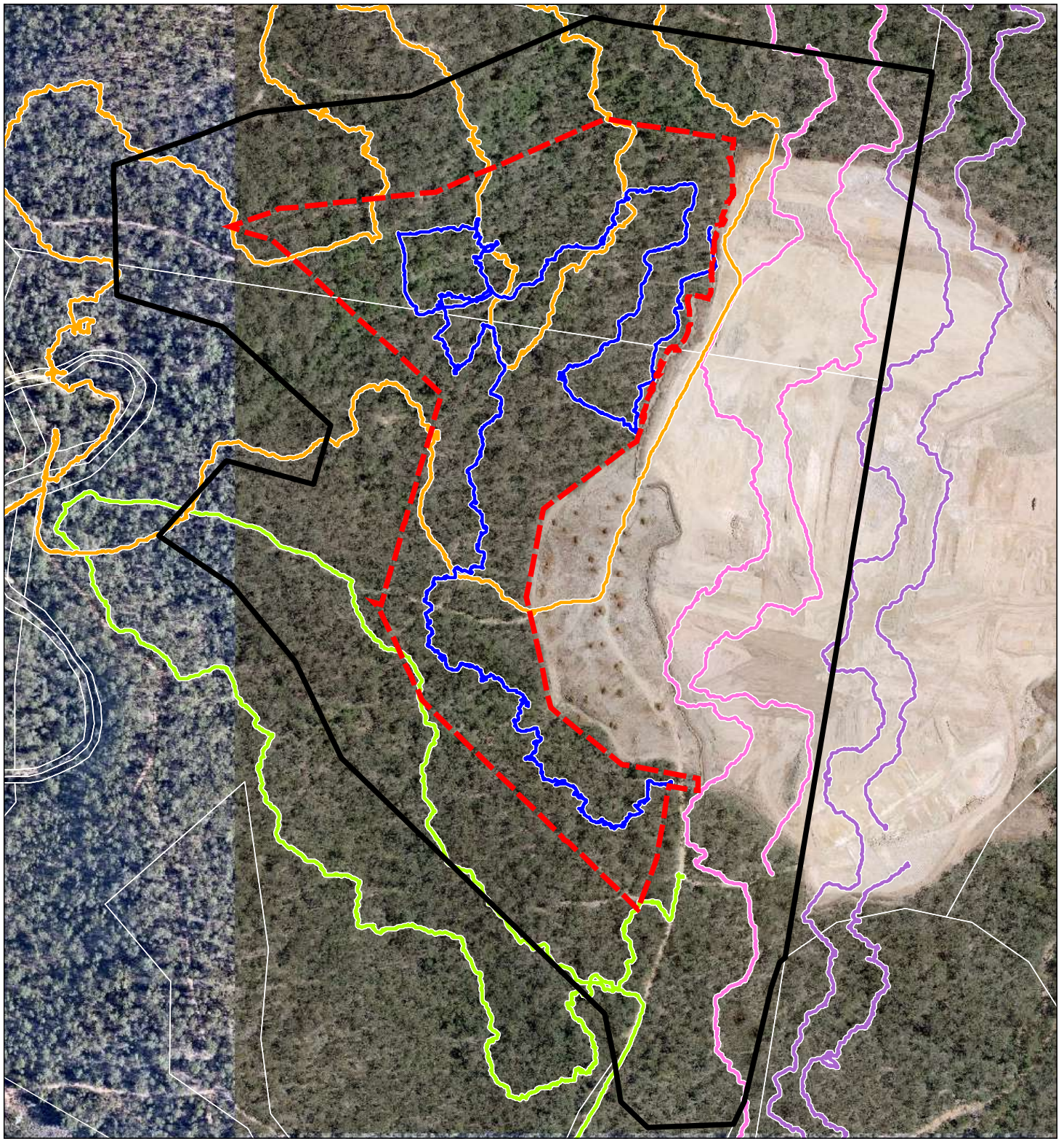
Buffer Area within Linear Open Space. Any Buffer Area adjacent an area identified for 'Interface Management' will require targeted management actions for protection of threatened flora during clearing and construction. Refer Threatened Flora Management Plan Section 3.2.2 for more information.

Management Plan Additional Management Actions

Approximate population extent of *P. habrophyllus* to be translocated. Refer Threatened Flora Management Plan Section 3.1 for actions.

Threatened flora interface management required. Refer Threatened Flora Management Plan Section 3.3.1 for actions.

Attachment 2 –Contemporary *Coleus habrophyllus* meander survey (2022 and 2021)



Legend

- Woogaroo Heights
- Qld DCDB
- Vegetation clearing area

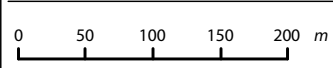
Plectranthus Meander Surveys

- C. habrophyllus meander survey 1 (April/May 2021)
- C. habrophyllus meander survey 2 (April/May 2021)
- C. habrophyllus meander survey 4 (April/May 2021)
- C. habrophyllus meander survey 5 (April/May 2021)
- C. habrophyllus meander survey (January 2022)

Plan 2

Woogaroo Heights
Coleus Habrophyllus Meander

File ref. 7927 WVAR2 02 Plectranthus A
Date 1/02/2022
Project Woogaroo Heights - Op-works



Scale (A4): 1:5,600 [GDA 1994 MGA Z56]



THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT SAUNDERS HAVILL GROUP. CAN NOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWING BY ANY THIRD PARTY.

Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 6

Pre-clearance survey and Wildlife Protection & Management Plan (WPMP) prepared by
Fauna Spotter Catcher



January 2022

Fauna Spotter Catcher Pre-clearance Survey and Wildlife Protection & Management Plan

Springfield Rise – Village 18
Springfield, Queensland
Report prepared for Shadforth Civil Pty Ltd



Report prepared by
QLD Fauna Consultancy Pty Ltd
Phone: (07) 3376 9780
Email: fauna@qfc.com.au

Date:	20/08/2021
Title:	Fauna Spotter Catcher Pre-clearance and Habitat Values Survey Springfield Rise - Village 18, Springfield, Queensland
Author/s:	Bryan Robinson, Jasmine Zeleny
Reviewed by:	Bryan Robinson
Field personnel:	Darcy Brady
Status:	Final Report
Filed as:	QFC FHA WPMP Shadforth Springfield Jan 2022.doc

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1. Introduction

1.1 Project Background

Queensland Fauna Consultancy Pty Ltd has been engaged by Shadforth Civil Pty Ltd to conduct a Fauna Spotter Catcher Pre-clearance and Habitat Values Survey and present a subsequent report for Village 18 of the Springfield Rise development located at Springfield, Queensland. The site plans are presented in Map 1.

The objective of this report is to summarise the existing fauna values present and assign mitigatory strategies applicable to probable species likely to be encountered during the clearing of identified habitats throughout or within specific localities of the site. Fauna species both common and of elevated conservation value have been considered within the parameters of onsite investigations and, where provided to QFC, include review of current fauna and floristic reports that may influence the assemblages expected to utilise the micro habitats evident within the site.

This review encompasses species identified under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the Queensland *Nature Conservation Act 1992*. Further consideration is given, where applicable, to species of iconic, cultural and/or regional significance identified under commonwealth, state or local planning instruments aimed at the persistence of biodiversity values within the area.

1.2 Project Location and Site Description

Springfield Rise is located at the end of Dublin Avenue, Springfield, west of the Spring Mountain State School and south-west of Sinnathamby Boulevard. The total clearing area is approximately 40 hectares.

Existing features exhibit a remnant woodland vegetative complex on undulating topography with drainage features and rock outcrops. Dominant trees species include *Acacia* species, *Eucalyptus tereticornis*, *E. siderophloia*, *E. crebra*, *E. acmenoides*, *Corymbia citriodora*, *Corymbia intermedia* and *Angophora leiocarpa*. Understorey vegetation consists of grass, scattered shrubs, saplings, areas of dense weed growth, and dense leaf litter.

Map 1: Site Plans



Source: Provided by Shadforth Civil Pty Ltd (2022)

1.3 Current Permits and Authorities

All activities conducted during the site investigations were implemented under the provisions of a number of permits issued to Queensland Fauna Consultancy Pty Ltd by the Department of Environment and Science (DES), formerly the Department of Environment and Heritage Protection (DEHP), and the Department of Employment, Economic Development and Innovation (DEEDI). These permits and additional authorities are listed in Table 1.

Table 1: Current Permits and authorities issued to QFC

Permit/Authorisation	Permit Number	Expiry Date
Damage Mitigation Permit	WA0018804	10 th November 2022
Rehabilitation Permit	WA0026789	16 th September 2023
Scientific Purposes Permit	WA0032325	3 rd March 2026
Scientific User Registration	Registration Number 589	27 th February 2022
Animal Ethics	CA 2019/02/1259	27 th February 2022
General Fisheries Permit	207015	16 th April 2023

These permits and approvals enable QFC to conduct the investigation, observation and relocation of protected animals exposed to disturbance due to infrastructure expansion resulting in the destruction of natural and artificial habitats.

2. Methodology

A site inspection was carried out on the 24th and 25th of January 2022 by Qld Fauna Consultancy. A standard set of observational techniques aimed at maximising the detection of fauna and the probable habitats they may occupy were employed to ascertain and identify the current fauna values throughout the project area. Where species of elevated conservation significance were foreseen as potentially present targeted searches were instigated to further evaluate individual species habitat.

Due to the habitat variability expressed across the development site the composition of investigations may include a range of features that entail specific components indicative of the presence of particular species or faunal groups. This may include where evident, observation of activity or signs of both historical and current use.

These may include but are not limited to the following:

- Identification of terrestrial microhabitats such as ground hollows, rock, burrows, leaf litter, stands of heavy vegetation, fallen branches and bark exfoliations;
- Identification of arboreal micro habitats including basal, trunk and limb hollows, tree fissures, bark exfoliates and arboreal termitaria;
- Identification of constructed arboreal micro habitats including bird nests and Ringtail Possum dreys;
- Artificial habitats including, but not limited to ornamental gardens, discarded rubbish, human dwellings and other infrastructure;
- Observation and investigation of aquatic habitats including dams, soaks, creeks, rivers and seasonally inundated vegetation communities. Artificial aquatic habitats may include constructed drains and culverts. Further components of interest include bank profiles and undercuts, submerged and/or exposed timber and rock, immediate aquatic and riparian vegetation, surfacing animals, nesting and/or feeding birds;
- Direct observation of active or exposed fauna within terrestrial, aquatic and arboreal habitats;
- Identification of scats, tracks and scratchings to determine fauna potentially present or to have historically utilised the site for either transient or longer-term life history purposes.

2.1 Specific methodology for Koalas *Phascolarctos cinereus*

Due to specific requirements and the cryptic nature of the Koala the following techniques were employed to assist in ascertaining the current and historical presence/absence status of the species at the site:

- Use of binoculars to inspect the crown, forks and trunk of trees for individuals currently occupying the site;
- 'Drip zone' searches at the base of known food trees for the presence of scats to a radius equal to that of the crown of individual trees;
- Inspection of trunks for scratchings indicative of use by Koalas.

3. Findings

The findings endeavor to demarcate the existing habitat profiles and the features present into three distinct groups: terrestrial, arboreal and aquatic. All habitat features present onsite are noted, however it is probable additional features will be present with these being accounted for during the Fauna Spotter Catcher process to be applied to all vegetation clearing across the site.

3.1 Terrestrial Habitat Features

The terrestrial fauna values of the site consist of different components and microhabitat features. This included an open low-level understorey consisting of grass, scattered shrubs, saplings and weed species such as Lantana *Lantana camara* and Prickly Pear *Opuntia sp.* (Figure 1 to Figure 4). Dense leaf litter and basal bark exfoliations (Figure 5 to Figure 7) also feature on site, being present in abundance and at variable depths, providing refugial opportunities and microhabitat connectivity that can be exploited by many different native terrestrial vertebrate and invertebrate species.

The site is also exhibitiv of scattered woody debris, timber stockpiles, hollow logs, hollow stumps, scattered surface rock, and small areas of rocky outcrops (Figure 8 to Figure 17), providing refugial and foraging opportunities, and a contributory factor to the provision of a variety of thermal and moisture gradients that can be exploited by a number of different native terrestrial vertebrate and invertebrate species.

Terrestrial termite mounds of varying size and condition are present across the site (Figure 18 to Figure 19), with numerous mounds displaying excavations typical of the Short-beaked Echidna *Tachyglossus aculeatus* (Figure 20 and Figure 21).

Mammal assemblages may comprise both native and introduced species. Native mammals occurring on site include the Northern Brown Bandicoot *Isodon macrourus*, as indicated by fresh tracks and diggings observed in several localities on site (Figure 22 and Figure 23). Macropod scat and tracks were also observed across the site indicating recent macopod use (Figure 24 and Figure 25). Species likely to occur on site include the Eastern Grey Kangaroo *Macropus giganteus*, Red-necked Wallaby *Notamacropus rufogriseus* and Swamp Wallaby *Wallabia bicolor*.

These features collectively contribute to the potential presence of a variety of native fauna species utilising the area for refugial, foraging and other resources.

GPS coordinates for all indicative terrestrial habitat features are shown in Table 2. Localities for identified terrestrial habitat features are presented in Map 2.

A comprehensive list of fauna species recorded in the region can be viewed in Appendix C.

Table 2: Localities for identified terrestrial habitat features

Number	Habitat Feature	GPS Coordinates	
		Latitude	Longitude
1	Hollow Log	-27.68083191	152.8815655
2	Hollow Log	-27.68167884	152.8793127
3	Hollow Log	-27.68301114	152.8800616
4	Hollow Log	-27.68410728	152.8800108
5	Hollow Log	-27.68659633	152.8813096
6	Hollow Log	-27.68199513	152.8809192
7	Hollow Stump	-27.68247675	152.8790365
8	Hollow Stump	-27.68463135	152.8806173
9	Hollow Stump	-27.68501496	152.8799476
10	Rock Pile	-27.68176198	152.8822459
11	Rock Pile	-27.68158433	152.8786075
12	Rock Pile	-27.68402644	152.8801623
13	Rock Pile	-27.68440643	152.8799685
14	Rock Pile	-27.6845615	152.8800413
15	Rock Pile	-27.68471095	152.8800754
16	Rock Pile	-27.68687599	152.8810737
17	Rock Pile	-27.68310598	152.8818113
18	Rock Pile	-27.68731689	152.8822268
19	Rock Pile	-27.68331402	152.8808094
20	Rock Pile	-27.68339218	152.8808757
21	Rocks (Singular)	-27.68175046	152.8822474
22	Rocks (Singular)	-27.68129461	152.8819366
23	Rocks (Singular)	-27.68173541	152.8801365
24	Rocks (Singular)	-27.68685202	152.8809044
25	Rocks (Singular)	-27.68691539	152.8816284
26	Terrestrial Termitaria	-27.68177552	152.8825399

27	Terrestrial Termitaria	-27.6846721	152.8804718
28	Terrestrial Termitaria	-27.68493118	152.8803978
29	Terrestrial Termitaria	-27.68496704	152.880458
30	Terrestrial Termitaria	-27.68733549	152.881536
31	Terrestrial Termitaria	-27.68773568	152.8820561
32	Terrestrial Termitaria	-27.68791199	152.8822297
33	Terrestrial Termitaria	-27.68189526	152.8811875
34	Terrestrial Termitaria	-27.68185804	152.8807684
35	Terrestrial Termitaria	-27.68240211	152.8808519
36	Terrestrial Termitaria	-27.68248409	152.8811264
37	Timber Stockpile	-27.68139648	152.8811135
38	Timber Stockpile	-27.68116737	152.8810094
39	Timber Stockpile	-27.68106482	152.8810175
40	Timber Stockpile	-27.6809787	152.8810717
41	Timber Stockpile	-27.68106079	152.8827848
42	Timber Stockpile	-27.68152763	152.8828593
43	Timber Stockpile	-27.68104194	152.8809953
44	Timber Stockpile	-27.68146468	152.8792314
45	Timber Stockpile	-27.68298847	152.8798537
46	Timber Stockpile	-27.68412413	152.879878
47	Timber Stockpile	-27.68349918	152.8816537
48	Timber Stockpile	-27.68351746	152.8816224
49	Woody Debris	-27.68251724	152.8811066



Figure 1: Grass understorey



Figure 2: Low level shrubs and saplings



Figure 3: Lantana *Lantana camara*



Figure 4: Prickly Pear *Opuntia sp.*



Figure 5: Dense leaf litter



Figure 6: Bark exfoliations



Figure 7: Bark exfoliations



Figure 8: Woody debris



Figure 9: Woody debris



Figure 10: Woody debris



Figure 11: Hollow log



Figure 12: Hollow log



Figure 13: Hollow log



Figure 14: Hollow stump



Figure 15: Scattered surface rock



Figure 16: Rocky outcrop



Figure 17: Rocky outcrop



Figure 18: Terrestrial termite mound



Figure 19: Terrestrial termite mound



Figure 20: Terrestrial termite mound with excavation



Figure 21: Terrestrial termite mound with excavation



Figure 22: Bandicoot tracks



Figure 23: Bandicoot diggings



Figure 24: Macropod scat



Figure 25: Macropod tracks

3.2 Arboreal Habitat Features

The clearance area consists predominately of Eucalypt and Acacia woodland (Figure 26 to Figure 28) consisting of trees of varying height, species and density suitable for feeding and nesting resources. The intermittent contiguous canopy structure within the vegetation represented may be facilitative of arboreal progression for species such as Common Brushtail Possum *Trichosurus vulpecula*, Common Ringtail Possum *Pseudocheirus peregrinus*, Brush-tailed Phascogale *Phascogale tapoatafa*, and Squirrel Glider *Petaurus norfolcensis* (Figure 29).

Hollow-bearing trees, stag trees, and fissures (Figure 30 to Figure 36) identified within the clearance area may provide refugial resources for small mammal, reptile, and parrot species. A number of trees exhibited exfoliating bark, which may provide refugial opportunities for reptile species including skinks and geckos.

Arboreal termite mounds of varying sizes are present across the clearance site in high numbers (Figure 37 to Figure 39), with many mounds exhibiting excavations (Figure 40 and Figure 41). A number of suitable mounds were located within the clearance area that have potential for use as egg deposition and incubation sites by species such as the Lace Monitor *Varanus varius* which was sighted during the inspection (Figure 42 and Figure 43), as well as the Laughing Kookaburra *Dacelo novaeguineae*, and Sacred Kingfisher *Todiramphus sanctus*. Common Brushtail Possums have been known to also utilise these features for shelter where hollows are not readily available.

Six avian stick nests were located, however did not appear in use at the time of the survey (Figure 44 to Figure 46). Further inspections are recommended immediately prior to clearing commencement. A number of avian species were observed utilising the site at the time of the inspection (foraging or perching) these species are presented in Table 4.

A Native Paper Wasp *Ropalidia romandi* nest and European Honey Bee *Apis mellifera* Hive were also identified during the inspection and will require mitigation during clearing activities (Figure 47 and Figure 48).

No possum dreys were identified in the clearing footprint, however the dense vegetation structure in some areas may have concealed visibility and further inspections are recommended immediately prior to clearing commencement.

GPS coordinates for all indicative arboreal habitat features are shown in Table 3. Localities for identified arboreal habitat features are presented in Map 2.

Primary and secondary Koala food trees located in the clearance area and include *Eucalyptus tereticornis*, *E. siderophloia*, *E. crebra*, *E. acmenoides*, *E. carnea*, *E. propinqua*, *Corymbia citriodora*, *Corymbia intermedia* and *Angophora leiocarpa*. However, no evidence was observed to indicate recent use of these trees by koalas. No koala scats were found during 'drip zone' searches and characteristic scratchings were not found during trunk investigations. A Koala habitat values map for the clearance area is presented in Appendix A.

Table 3: Localities for identified arboreal habitat features

Number	Habitat Feature	GPS Coordinates	
		Latitude	Longitude
1	Arboreal Termitaria	-27.68170166	152.8824217
2	Arboreal Termitaria	-27.68136597	152.8810338
3	Arboreal Termitaria	-27.68129532	152.8808562
4	Arboreal Termitaria	-27.68128308	152.8811397
5	Arboreal Termitaria	-27.68104336	152.8813608
6	Arboreal Termitaria	-27.6812654	152.8818907
7	Arboreal Termitaria	-27.68123698	152.8816553
8	Arboreal Termitaria	-27.68149846	152.8802743
9	Arboreal Termitaria	-27.68172733	152.8803292
10	Arboreal Termitaria	-27.68169602	152.8802961
11	Arboreal Termitaria	-27.68174744	152.8798007
12	Arboreal Termitaria	-27.68180847	152.8795113
13	Arboreal Termitaria	-27.68168445	152.8791781
14	Arboreal Termitaria	-27.68260298	152.8800209
15	Arboreal Termitaria	-27.68283742	152.8800863
16	Arboreal Termitaria	-27.68318176	152.8799944
17	Arboreal Termitaria	-27.6838233	152.8802095
18	Arboreal Termitaria	-27.68453753	152.8799991
19	Arboreal Termitaria	-27.68453128	152.8802767
20	Arboreal Termitaria	-27.68467956	152.8802523
21	Arboreal Termitaria	-27.68499756	152.8803868
22	Arboreal Termitaria	-27.68471757	152.8797319
23	Arboreal Termitaria	-27.68464661	152.8798842
24	Arboreal Termitaria	-27.68516952	152.8798125
25	Arboreal Termitaria	-27.68585205	152.8797362
26	Arboreal Termitaria	-27.68685913	152.881024

27	Arboreal Termitaria	-27.68742078	152.8817694
28	Arboreal Termitaria	-27.68302917	152.8822757
29	Arboreal Termitaria	-27.68307495	152.8819744
30	Arboreal Termitaria	-27.68302308	152.8818802
31	Arboreal Termitaria	-27.68670106	152.8815768
32	Arboreal Termitaria	-27.68685913	152.8814251
33	Arboreal Termitaria	-27.68623352	152.8809856
34	Arboreal Termitaria	-27.68073779	152.8924231
35	Arboreal Termitaria	-27.68490601	152.8809234
36	Arboreal Termitaria	-27.68455505	152.8810439
37	Arboreal Termitaria	-27.68089363	152.8908331
38	Arboreal Termitaria	-27.68440247	152.8812705
39	Arboreal Termitaria	-27.68359375	152.8821039
40	Arboreal Termitaria	-27.68336487	152.8818034
41	Arboreal Termitaria	-27.68004808	152.8929633
42	Arboreal Termitaria	-27.68261719	152.8820217
43	Arboreal Termitaria	-27.68267822	152.8820347
44	Arboreal Termitaria	-27.68260005	152.8818533
45	Arboreal Termitaria	-27.68232727	152.8826942
46	Arboreal Termitaria	-27.68199158	152.8813913
47	Arboreal Termitaria	-27.68186951	152.8813805
48	Arboreal Termitaria	-27.68177795	152.8810955
49	Arboreal Termitaria	-27.68218994	152.8808132
50	Arboreal Termitaria	-27.68263898	152.88125
51	Arboreal Termitaria	-27.68292236	152.8809786
52	Arboreal Termitaria	-27.68305969	152.8807363
53	Arboreal Termitaria	-27.68321306	152.880241
54	Arboreal Termitaria	-27.68339539	152.8809307
55	Arboreal Termitaria	-27.68296814	152.8814762

56	Arboreal Termitaria	-27.68275452	152.881483
57	Arboreal Termitaria	-27.6811676	152.8813399
58	Arboreal Termitaria	-27.6822859	152.8807051
59	Arboreal Termitaria	-27.68305969	152.8800383
60	Arboreal Termitaria	-27.68362427	152.8807726
61	Arboreal Termitaria	-27.6837616	152.8808553
62	Arboreal Termitaria	-27.68367004	152.8808836
63	Arboreal Termitaria	-27.68418884	152.8802187
64	Arboreal Termitaria	-27.6854248	152.880525
65	Arboreal Termitaria	-27.68562317	152.8799127
66	Arboreal Termitaria	-27.68583679	152.8803341
67	Arboreal Termitaria	-27.68600464	152.8802717
68	Arboreal Termitaria (with excavation)	-27.68092849	152.881941
69	Arboreal Termitaria (with excavation)	-27.68145978	152.8901604
70	Arboreal Termitaria (with excavation)	-27.68177242	152.8792291
71	Arboreal Termitaria (with excavation)	-27.68263245	152.8799357
72	Arboreal Termitaria (with excavation)	-27.68298176	152.8799613
73	Arboreal Termitaria (with excavation)	-27.68501282	152.8798119
74	Arboreal Termitaria (with excavation)	-27.6871062	152.8822172
75	Arboreal Termitaria (with excavation)	-27.68688965	152.8819153
76	Arboreal Termitaria (with excavation)	-27.68685064	152.8817933
77	Arboreal Termitaria (with excavation)	-27.68293373	152.8809958
78	Arboreal Termitaria (with excavation)	-27.68432617	152.8805397
79	Arboreal Termitaria (with excavation)	-27.68518779	152.8798652
80	Bird Nest	-27.68106348	152.881736
81	Bird Nest	-27.68152629	152.8794916
82	Bird Nest	-27.68212589	152.8814716
83	Bird Nest	-27.68198343	152.881447
84	Bird Nest	-27.68305825	152.8804835

85	Bird Nest	-27.68435669	152.8802054
86	Dead Stag	-27.68177795	152.882441
87	Dead Stag	-27.68177238	152.8823525
88	Dead Stag	-27.68180649	152.8820932
89	Dead Stag	-27.68169837	152.8817673
90	Dead Stag	-27.68179321	152.8816486
91	Dead Stag	-27.68167335	152.8814859
92	Dead Stag	-27.68149569	152.8813255
93	Dead Stag	-27.68153136	152.8812796
94	Dead Stag	-27.6814563	152.881236
95	Dead Stag	-27.68147278	152.8811379
96	Dead Stag	-27.68133882	152.885898
97	Dead Stag	-27.68104014	152.8810053
98	Dead Stag	-27.68104726	152.8813246
99	Dead Stag	-27.68085255	152.8815292
100	Dead Stag	-27.68085255	152.8815292
101	Dead Stag	-27.68101501	152.8824479
102	Dead Stag	-27.68089294	152.882516
103	Dead Stag	-27.68083101	152.8825354
104	Dead Stag	-27.68162537	152.8817926
105	Dead Stag	-27.68164137	152.8817428
106	Dead Stag	-27.68139268	152.8920055
107	Dead Stag	-27.68192116	152.8801567
108	Dead Stag	-27.68183311	152.8784607
109	Dead Stag	-27.68466007	152.8799584
110	Dead Stag	-27.68516541	152.8794991
111	Dead Stag	-27.68750807	152.8817149
112	Dead Stag	-27.68763938	152.8818791
113	Dead Stag	-27.6877594	152.8820325

114	Dead Stag	-27.68772173	152.8820396
115	Dead Stag	-27.68803406	152.8820819
116	Dead Stag	-27.68766785	152.882161
117	Dead Stag	-27.68704224	152.8821697
118	Dead Stag	-27.68682088	152.8824242
119	Dead Stag	-27.68696594	152.8824282
120	Dead Stag	-27.68301324	152.8882889
121	Dead Stag	-27.68225098	152.8827698
122	Dead Stag	-27.68299866	152.8804045
123	Dead Stag	-27.68361204	152.8807616
124	Dead Stag	-27.68685913	152.8813374
125	Dead Stag	-27.6850199	152.8803862
126	Dead Stag	-27.68328857	152.8808014
127	Fissure	-27.68689624	152.8819153
128	Fissure	-27.68200041	152.8808696
129	Fissure	-27.68225027	152.881499
130	Fissure	-27.68647534	152.8806688
131	Hollow Bearing Tree	-27.68707275	152.8811569
132	Hollow Bearing Tree	-27.68336201	152.8811108
133	Hollow Bearing Tree	-27.68678284	152.8816746
134	Paper Wasp nest	-27.68626404	152.8806677
135	European Honey Bee Hive	-27.68707275	152.8811569



Figure 26: Site overview



Figure 27: Site overview



Figure 28: Site overview



Figure 29: Contiguous canopy structure



Figure 30: Hollow-bearing tree



Figure 31: Hollow-bearing tree



Figure 32: Hollow-bearing tree



Figure 33: Hollow-bearing tree



Figure 34: Fissure



Figure 35: Stag tree



Figure 36: Stag tree



Figure 37: Arboreal termitaria



Figure 38: Arboreal termitaria



Figure 39: Arboreal termitaria



Figure 40: Arboreal termitaria (with excavation)



Figure 41: Arboreal termitaria (with excavation)



Figure 42: Lace Monitor *Varanus varius*



Figure 43: Lace Monitor *Varanus varius*



Figure 44: Bird nest



Figure 45: Bird nest



Figure 46: Bird nest



Figure 47: Paper Wasp *Ropalidia romandi* nest

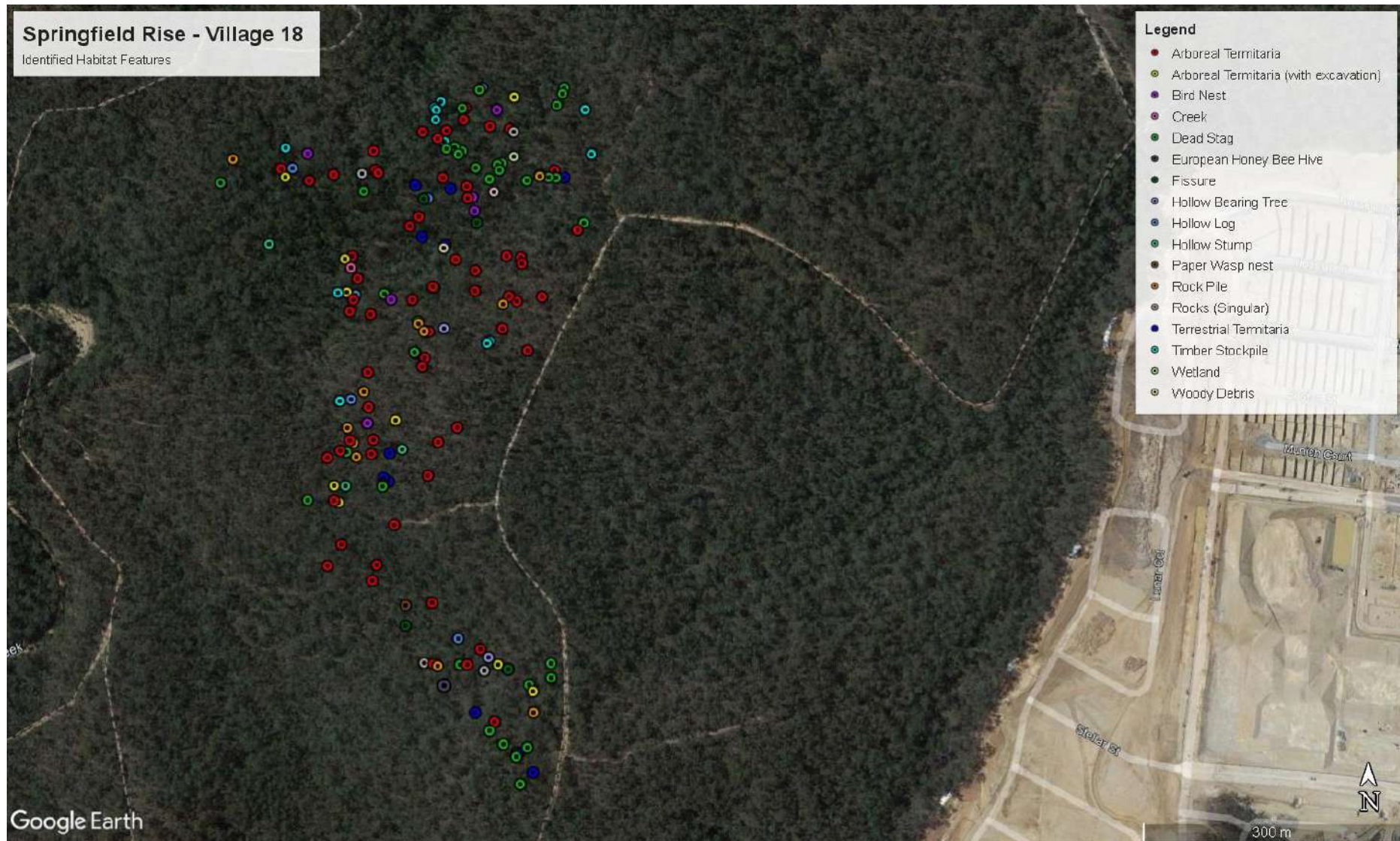


Figure 48: European Honey Bee Hive *Apis mellifera*

Table 4: Arboreal Fauna Species Observed

Number	Common Name and <i>Scientific Name</i>
1	Noisy Friarbird <i>Philemon corniculatus</i>
2	Laughing Kookaburra <i>Dacelo novaeguineae</i>
3	Brown Quail <i>Coturnix ypsilophora</i>
4	Grey Butcherbird <i>Cracticus torquatus</i>
5	Eastern Whipbird <i>Psophodes olivaceus</i>
6	White-throated Nightjar <i>Eurostopodus mystacalis</i>
7	Pheasant Coucal <i>Centropus phasianinus</i>
8	Rufous Fantail <i>Rhipidura intermedia</i>
9	Red-browed Finch <i>Neochmia temporalis</i>
10	Spangled Drongo <i>Dicrurus bracteatus</i>
11	Red-backed Fairy-wren <i>Malurus melanocephalus</i>
12	Superb Fairy-wren <i>Malurus cyaneus</i>
13	Black-faced Cuckoo-shrike <i>Coracina novaehollandiae</i>
14	Sacred Kingfisher <i>Todiramphus sanctus</i>
15	Striated Pardalote <i>Pardalotus striatus</i>
16	Fan-tailed Cuckoo <i>Cacomantis flabelliformis</i>
17	Tawny Frogmouth <i>Podargus strigoides</i>

Map 2: Localities for identified terrestrial and arboreal habitat features



3.3 Aquatic Habitat Features

A small creek with intermittent ponded areas is present within the clearing area, as well as a small wetland (marshland) area and a small man-made pond (Figure 49 and Figure 50). A number of native species may exploit the various microhabitats present by such environmental features, particularly during times of rainfall, including Broad-palmed Rocket Frog *Litoria latopalmata*, Eastern Sedge-frog *Litoria fallax* (heard during inspection), Graceful Treefrog *Litoria gracilentata*, Striped Marsh-frog *Limnodynastes peronii*, Tusked Frog *Adelotus brevis*, Keelback Snake *Tropidonophis mairii*, and Eastern Water Dragon *Intellagama lesueurii*, as well as various mammals and birds as a water resource. Macropod activity around the creek indicated its use as a water source by local kangaroo and wallaby species. Amphibian eggs were found within a foam mass in vegetation at the edge of the pond during the inspection (Figure 51), further investigation for additional amphibian eggs and tadpoles is recommended immediately prior to vegetation clearing and dewatering.

GPS coordinates for all indicative aquatic habitat features are shown in Table 5. Localities for identified aquatic habitat features are presented in Map 2.

Table 5: Localities for identified aquatic habitat features

Number	Habitat Feature	GPS Coordinates	
		Latitude	Longitude
1	Creek	-27.682724	152.8800077
2	Pond	-27.6819269	152.8817037
3	Wetland	-27.6815547	152.8819384



Figure 49: Wetland



Figure 50: Pond



Figure 51: Amphibian eggs in foam mass

3.4 Endangered, Vulnerable and Near Threatened (EVNT) & Special Least Concern (SLC) Species

It is not envisaged that any EVNT or SLC fauna species will be detrimentally impacted by the proposed works. However, eight species identified within the Online EPBC Protected Matters Report (Appendix B) and the Queensland Government Wildlife Online Search Tool (Appendix C) were considered likely or possible to occur within the site and will require further mitigation during clearing activities.

Although no evidence was found during the site inspection of recent Koala use the species has previously been recorded in the area, including on previous stages of the project. The site is identified as Core Koala Habitat under Koala Habitat in South East Queensland mapping sourced from Queensland Globe (see Appendix A). Additionally, the site is located within a Koala Priority Area.

It is advised that dedicated methodologies be employed by a qualified Fauna Spotter specific to the detection of these species prior to vegetation clearing activities.

Table 6: Significant species deemed likely or possible to occur within the clearance survey area

Common Name Scientific Name	Species Information	Likelihood of Occurrence within the Clearance Survey area
Monotremes		
Short-beaked Echidna <i>Tachyglossus aculeatus</i> EPBC: Not Listed NCA: Special Least Concern	Inhabits a broad range of habitat types across Australia where there is a supply of ants or termites. Echidnas will shelter within hollow logs, under bushes and debris (Van Dyck & Strahan 2008).	Likely Suitable feeding resources occur onsite and evidence of diggings observed onsite.
Mammals		
Koala <i>Phascolarctos cinereus</i> EPBC: Vulnerable NCA: Vulnerable	Inhabits a range of open forest and woodland communities which may include any of the following noted food trees: <i>Eucalyptus</i> , <i>Corymbia</i> , <i>Melaleuca</i> , <i>Angophora</i> and <i>Lophostemon</i> .	Likely Known food trees for the transient Koala (<i>Phascolarctos cinereus</i>) occur on the clearance site and the species is well documented within the area.
Grey-headed Flying-fox <i>Pteropus poliocephalus</i> EPBC: Vulnerable NCA: Least Concern	The Grey-headed Flying-Fox roosts in aggregations of various sizes on exposed branches, commonly of emergent trees. Roost sites are typically located near water, such as lakes, rivers or the coast. Habitat includes open forests, woodlands, urban parks and gardens.	Possible Suitable vegetation communities containing both feeding and roosting resources occur on and adjacent to the clearance site.

<p>Spotted-tail Quoll (SE Mainland Population) <i>Dasyurus maculatus maculatus</i></p> <p>EPBC: Endangered NCA: Endangered</p>	<p>Currently known from the Granit Belt and Border Ranges though small numbers may occur from Gympie to the QLD border (Curtis <i>et al.</i> 2012). Inhabits vine-forest, wet and dry sclerophyll forests and woodlands containing boulder piles, fallen logs and hollow trees utilised as shelter sites (Curtis <i>et al.</i> 2012).</p>	<p>Possible Preferred habitat type and habitat features present and the species is documented within the area.</p>
<p>Greater Glider <i>Petauroides volans</i></p> <p>EPBC: Vulnerable NCA: Endangered</p>	<p>Largest of the gliders, the Great Glider is found along eastern Australia within a variety of eucalypt dominated forests and tall open woodlands (Lindenmayer 2002)</p>	<p>Possible Preferred habitat type present and the species is documented within the area.</p>
Birds		
<p>Rufous Fantail <i>Rhipidura rufifrons</i></p> <p>EPBC: Migratory NCA: Special Least Concern</p>	<p>The Rufous Fantail builds a small compact cup nest, of fine grasses bound with spider webs, that is suspended from a tree fork about 5m from the ground. The bottom of the nest is drawn out into a long stem. Both sexes share nest building, incubation and feeding of the young. One or two broods may be raised in a season (Serventy, 1982). Breeding occurs from about September to February with 81% of eggs laid in November-December (Higgins <i>et al.</i> 2001).</p>	<p>Present Preferred habitat types present, and the species was observed during the inspection.</p>
Reptiles		
<p>Collared Delma <i>Delma torquata</i></p> <p>EPBC: Vulnerable NCA: Vulnerable</p>	<p>Weathered loose rocks, flattish bedrock outcroppings, logs or mats of leaf litter, or in cracks and crevices among tussock grasses. Lays two eggs around December with hatching in February or March (Curtis <i>et al.</i> 2012)</p>	<p>Possible Preferred habitat type and habitat features present.</p>
Amphibians		
<p>Tusked Frog <i>Adelotus brevis</i></p> <p>EPBC: Not Listed NCA: Vulnerable</p>	<p>Inhabits permanent ponds and streams within rainforests, wet to dry forests and farmland areas (Anstis 2013). Nests are constructed under leaf litter, vegetation or logs at the edge of ponds or stream pools in concealed locations (Anstis 2013).</p>	<p>Possible Habitat conducive to this species is found within the survey area.</p>

4. Fauna Impacts

It is important to consider the existing and future residential developmental areas when investigation potential fauna impacts.

Impacts to fauna, as a result of vegetation clearance, will include the following:

- Loss of trees for foraging, roosting and nesting;
- Loss of hollow-bearing trees for nesting and refuge;
- Loss of habitat and foraging areas for terrestrial species;
- Loss of overall habitat;
- Potential loss of abundance of some local species.

Other impacts may include:

- Injury or death during felling of trees;
- Injury or death from machinery;
- Alteration of nesting, foraging and general activities due to disturbance.

5. Assessment and Conclusion

Overall, the site contains high value refugial opportunities for arboreal and terrestrial fauna species (see Section 3.1 and 3.2). The species expected within the site are likely to primarily reflect common fauna assemblages for the region; however, provisions will be proposed directly for common fauna and species of conservation significance.

The connectivity to adjacent conservation land in the west and south, in conjunction with sequential clearing methodologies, will aid in the movement of medium to large size fauna such as Koala and Kangaroos. Specific methodologies for these species will be detailed within the Wildlife and Habitat Impact Mitigation Plan (WHIMP).

A number of conclusions and recommendations will be presented in the WHIMP, with the specific intention of providing a comprehensive management structure to facilitate minimal impact to fauna during the clearing of vegetation and subsequent disturbance of habitats.

It is advised that all identified fauna habitats onsite be inspected by a DES approved Fauna Spotter prior to vegetation clearing and all vegetation removal activities be supervised during the clearing process. Terrestrial load reduction activities will be conducted ahead of the clearing front where possible. Fauna captured will be relocated to adjacent habitat consistent with the life history requirements of the species requiring translocation. The directives given by Fauna Spotter Catchers should embrace a “best practice” approach which includes implementation of proven specific management techniques for identified habitat types and compliance with legislation relevant to the activity.

It is recommended that in the event any nests which contain chicks are identified during clearing be left until fledged, and those that are in a construction phase should be dismantled to prevent further nesting activity. Any fertile eggs recovered will require incubation and subsequent rearing for latter release.

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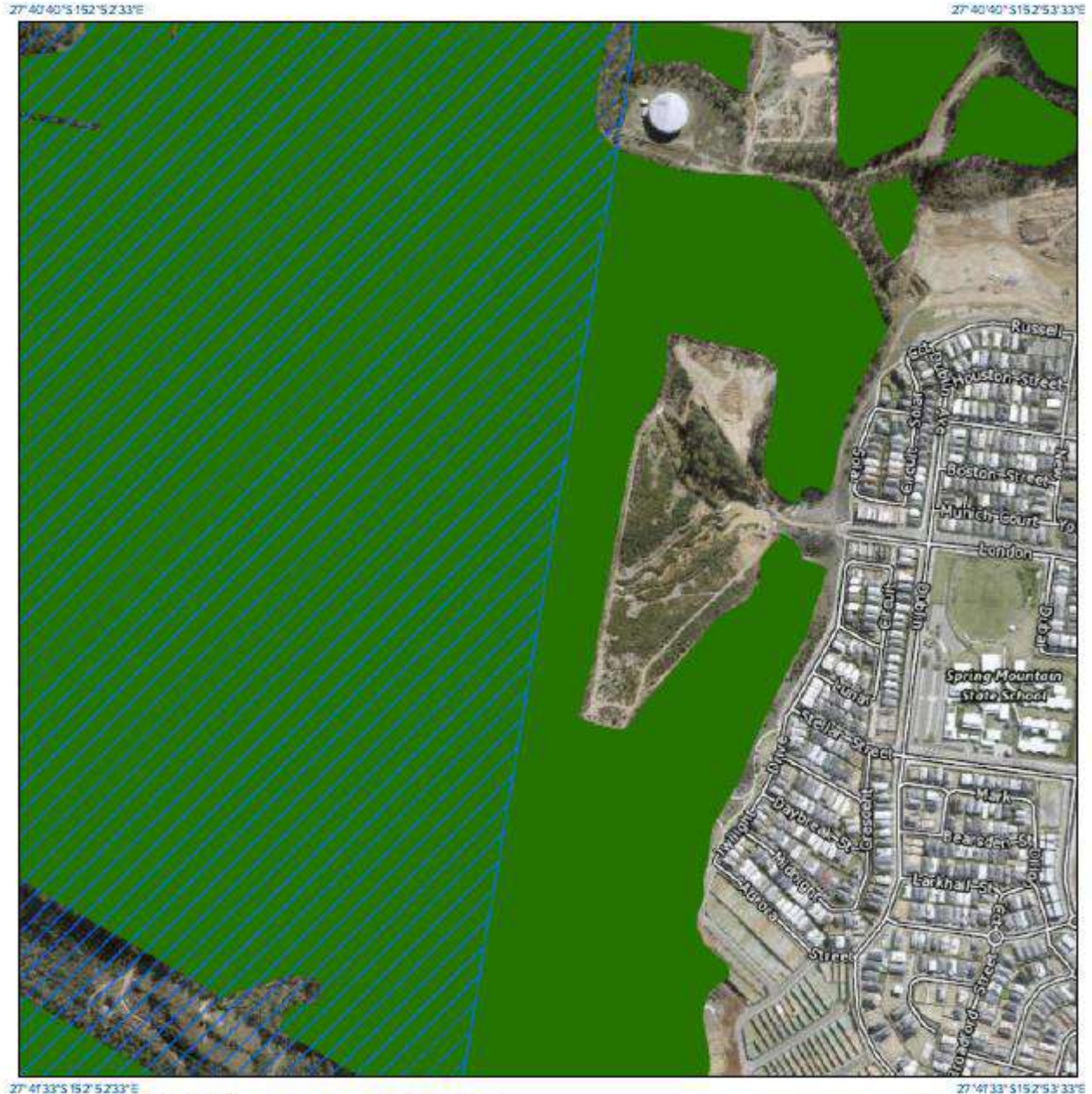
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7. Appendix A: Koala Habitat Values



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Legend

Koala priority area



Core koala habitat area



Identified koala broad- hectare area



Locally refined koala habitat area



Road Crossing

— Bridge

— Tunnel

Road

— Highway

— Main

— Local

— Private

Railway



Cities and Towns



Attribution

Maxar

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8. Appendix B: EPBC Act Protected Matters Report



Australian Government
Department of Agriculture,
Water and the Environment

EPBC Act Protected Matters Report

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

Report created: 28-Jan-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	43
Listed Migratory Species:	17

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	5
Commonwealth Heritage Places:	1
Listed Marine Species:	22
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	28
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Moreton bay	30 - 40km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

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

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

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

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
 Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat known to occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Potorous tridactylus tridactylus Long-nosed Potoroo (SE Mainland) [66645]	Vulnerable	Species or species habitat may occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Corchorus cunninghamii Native Jute [14659]	Endangered	Species or species habitat may occur within area	In buffer area only
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area	In feature area
Cupaniopsis tomentella Boonah Tuckeroo [3322]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Fontainea venosa [24040]	Vulnerable	Species or species habitat may occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat may occur within area	In feature area
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area	In feature area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Plectranthus habrophyllus [64589]	Endangered	Species or species habitat likely to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat may occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Furina dunmali Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area	In feature area
Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

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

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

Commonwealth Land Name	State	Buffer Status
Defence		
Defence - GREENBANK TRAINING AREA [31007]	QLD	In buffer area only
Defence - GREENBANK TRAINING AREA [31015]	QLD	In buffer area only
Defence - GREENBANK TRAINING AREA [31006]	QLD	In buffer area only
Defence - GREENBANK TRAINING AREA [31008]	QLD	In buffer area only
Defence - GREENBANK TRAINING AREA [31011]	QLD	In buffer area only

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

Name	State	Status	Buffer Status
Natural			

Name	State	Status	Buffer Status
Greenbank Military Training Area (part)	QLD	Listed place	In buffer area only

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
-----------------	---------------------	---------------	---------------

Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Merops omatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

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

Protected Area Name	Reserve Type	State	Buffer Status
Stewartdale	Nature Refuge	QLD	In buffer area only
White Rock	Conservation Park	QLD	In feature area

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State	Buffer Status
Greenbank Army Training Area C	QLD	In buffer area only

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
AV JENNINGS PTY LTD - Coleman Road, South Ripley - Residential Development	2021/9061	Controlled Action	Assessment Approach	In buffer area only
Barrams Road Residential Development	2021/9005	Controlled Action	Assessment Approach	In buffer area only
Brentwood Residential Estate, Bellbird Park, Ipswich, QLD	2013/7074	Controlled Action	Post-Approval	In buffer area only
Casino Ipswich Pipeline	2007/3877	Controlled Action	Completed	In feature area
Cumner Road mixed use subdivision, Whiterock, Ripley Valley, Qld	2014/7388	Controlled Action	Post-Approval	In buffer area only
First Nine Master planned residential development,	2016/7676	Controlled Action	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
<u>Brookwater, Qld</u>				
<u>Peninsula Precinct, Springfield, Queensland</u>	2020/8629	Controlled Action	Further Information Request	In buffer area only
<u>Residential subdivision, Lot 901 and 902 Eugene St, Bellbird Park, Qld</u>	2018/8350	Controlled Action	Assessment Approach	In buffer area only
<u>Ripley Valley PDA Providence East and South</u>	2018/8347	Controlled Action	Further Information Request	In buffer area only
<u>Scenic Precinct Residential Development</u>	2020/8651	Controlled Action	Further Information Request	In buffer area only
<u>Southern Regional Water Pipeline</u>	2006/2593	Controlled Action	Post-Approval	In buffer area only
<u>Springfield Residential Development</u>	2019/8575	Controlled Action	Further Information Request	In buffer area only
<u>Spring Mountain mixed use master planned community development, Springfield, Qld</u>	2013/7057	Controlled Action	Post-Approval	In feature area
<u>Springview Village One, Springfield, Ipswich City, QLD</u>	2014/7306	Controlled Action	Post-Approval	In buffer area only
<u>Vedanta Masterplanned Community, Springfield Lakes</u>	2020/8802	Controlled Action	Assessment Approach	In buffer area only
<u>Woodlink Residential Community, 246-326 Collingwood Drive, Collingwood Park</u>	2013/6866	Controlled Action	Post-Approval	In buffer area only
<u>Woogaroo Heights master planned residential development, Springfield, Qld</u>	2017/7875	Controlled Action	Post-Approval	In feature area
Not controlled action				
<u>Bellbird Park State High School development, Redbank Plains, Qld</u>	2014/7323	Not Controlled Action	Completed	In buffer area only
<u>Fembroke Ridge residential estate development - Balance Land, Redbank Plains, Qld</u>	2013/6818	Not Controlled Action	Completed	In buffer area only
<u>Improving rabbit biocontrol: releasing another strain of RHDV, sthm two thirds of Australia</u>	2015/7522	Not Controlled Action	Completed	In feature area
<u>Inland Rail Gowrie to Kagaru Geotechnical Project, QLD</u>	2018/8263	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Northern Link Parallel Road Tunnels Project	2007/3824	Not Controlled Action	Completed	In buffer area only
South West Transport Corridor	2006/2547	Not Controlled Action	Completed	In feature area
Swanbank Waste Management Facility Stage 1B extension Area, Qld	2015/7581	Not Controlled Action	Completed	In buffer area only
Underground Bus and Train Project, Brisbane	2013/7106	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Construction & Operation 275/330kV Transmission Line	2006/2820	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Cross River Rail	2010/5427	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Springfield Transport Corridor Project	2007/3214	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Bioregional Assessments				
SubRegion	BioRegion	Website	Buffer Status	
Clarence-Moreton	Clarence-Moreton	BA website	In feature area	

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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9. Appendix C: WildNet Species List



WildNet species list

Search Criteria: Species List for a Specified Point
Species: Animals
Type: Native
Queensland status: All
Records: All
Date: Since 1980
Latitude: -27.6846
Longitude: 152.8811
Distance: 5
Email: jasmine@qfc.com.au
Date submitted: Friday 28 Jan 2022 14:27:00
Date extracted: Friday 28 Jan 2022 14:30:02

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Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Hylidae	<i>Cyclorana alboguttata</i>	greenstripe frog		C		1
animals	amphibians	Hylidae	<i>Litoria balatus</i>	slender bleating tree frog		C		4
animals	amphibians	Hylidae	<i>Litoria brevipalmata</i>	green thighed frog		C		1
animals	amphibians	Hylidae	<i>Litoria caerulea</i>	common green treefrog		C		10
animals	amphibians	Hylidae	<i>Litoria fallax</i>	eastern sedgefrog		C		127
animals	amphibians	Hylidae	<i>Litoria gracilenta</i>	graceful treefrog		C		19
animals	amphibians	Hylidae	<i>Litoria latopalmata</i>	broad palmed rocketfrog		C		52
animals	amphibians	Hylidae	<i>Litoria nasuta</i>	striped rocketfrog		C		7
animals	amphibians	Hylidae	<i>Litoria peronii</i>	emerald spotted treefrog		C		3
animals	amphibians	Hylidae	<i>Litoria rubella</i>	ruddy treefrog		C		25
animals	amphibians	Hylidae	<i>Litoria wilcoxii</i>	eastern stony creek frog		C		6
animals	amphibians	Limnodynastidae	<i>Adelotus brevis</i>	tusked frog		V		4
animals	amphibians	Limnodynastidae	<i>Limnodynastes peronii</i>	striped marshfrog		C		79
animals	amphibians	Limnodynastidae	<i>Limnodynastes tasmaniensis</i>	spotted grassfrog		C		6
animals	amphibians	Limnodynastidae	<i>Limnodynastes terraereginae</i>	scarlet sided pobblebonk		C		22
animals	amphibians	Limnodynastidae	<i>Platyplectrum ornatum</i>	ornate burrowing frog		C		29
animals	amphibians	Myobatrachidae	<i>Crinia parinsignifera</i>	beeping froglet		C		70
animals	amphibians	Myobatrachidae	<i>Mixophyes fasciolatus</i>	great barred frog		C		11
animals	amphibians	Myobatrachidae	<i>Pseudophryne coriacea</i>	red backed broodfrog		C		3
animals	amphibians	Myobatrachidae	<i>Pseudophryne major</i>	great brown broodfrog		C		1
animals	amphibians	Myobatrachidae	<i>Pseudophryne raveni</i>	copper backed broodfrog		C		21
animals	amphibians	Myobatrachidae	<i>Uperoleia fusca</i>	dusky gungan		C		4
animals	amphibians	Myobatrachidae	<i>Uperoleia rugosa</i>	chubby gungan		C		2
animals	birds	Acanthizidae	<i>Acanthiza chrysorrhoa</i>	yellow-rumped thornbill		C		2
animals	birds	Acanthizidae	<i>Acanthiza lineata</i>	striated thornbill		C		9
animals	birds	Acanthizidae	<i>Acanthiza nana</i>	yellow thornbill		C		8
animals	birds	Acanthizidae	<i>Acanthiza pusilla</i>	brown thornbill		C		18
animals	birds	Acanthizidae	<i>Acanthiza reguloides</i>	buff-rumped thornbill		C		28
animals	birds	Acanthizidae	<i>Gerygone mouki</i>	brown gerygone		C		2
animals	birds	Acanthizidae	<i>Gerygone olivacea</i>	white-throated gerygone		C		50
animals	birds	Acanthizidae	<i>Pyrholaemus sagittatus</i>	speckled warbler		C		20
animals	birds	Acanthizidae	<i>Sericornis frontalis</i>	white-browed scrubwren		C		39
animals	birds	Acanthizidae	<i>Smicromis brevirostris</i>	weebill		C		50
animals	birds	Accipitridae	<i>Accipiter cirrocephalus</i>	collared sparrowhawk		C		2
animals	birds	Accipitridae	<i>Accipiter fasciatus</i>	brown goshawk		C		14
animals	birds	Accipitridae	<i>Aquila audax</i>	wedge-tailed eagle		C		30
animals	birds	Accipitridae	<i>Aviceda subcristata</i>	Pacific baza		C		8
animals	birds	Accipitridae	<i>Elanus axillaris</i>	black-shouldered kite		C		9
animals	birds	Accipitridae	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle		C		3
animals	birds	Accipitridae	<i>Haliastur indus</i>	brahminy kite		C		1
animals	birds	Accipitridae	<i>Hieraetus morphnoides</i>	little eagle		C		1
animals	birds	Aegothelidae	<i>Aegotheles cristatus</i>	Australian owl-nightjar		C		14
animals	birds	Alcedinidae	<i>Ceyx azureus</i>	azure kingfisher		C		4
animals	birds	Anatidae	<i>Anas castanea</i>	chestnut teal		C		1
animals	birds	Anatidae	<i>Anas superciliosa</i>	Pacific black duck		C		18
animals	birds	Anatidae	<i>Chenonetta jubata</i>	Australian wood duck		C		21

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Anatidae	<i>Cygnus atratus</i>	black swan		C		2
animals	birds	Anhingidae	<i>Anhinga novaehollandiae</i>	Australasian darter		C		1
animals	birds	Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail		V	V	8
animals	birds	Ardeidae	<i>Ardea intermedia</i>	intermediate egret		C		3
animals	birds	Ardeidae	<i>Ardea pacifica</i>	white-necked heron		C		5
animals	birds	Ardeidae	<i>Bubulcus ibis</i>	cattle egret		C		15
animals	birds	Ardeidae	<i>Egretta novaehollandiae</i>	white-faced heron		C		20
animals	birds	Ardeidae	<i>Nycticorax caledonicus</i>	nankeen night-heron		C		2
animals	birds	Artamidae	<i>Artamus cyanopterus</i>	dusky woodswallow		C		10
animals	birds	Artamidae	<i>Artamus leucorhynchus</i>	white-breasted woodswallow		C		2
animals	birds	Artamidae	<i>Artamus superciliosus</i>	white-browed woodswallow		C		1
animals	birds	Artamidae	<i>Cracticus nigrogularis</i>	piebald butcherbird		C		82
animals	birds	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird		C		58
animals	birds	Artamidae	<i>Gymnorhina tibicen</i>	Australian magpie		C		76
animals	birds	Artamidae	<i>Strepera graculina</i>	piebald currawong		C		64
animals	birds	Burhinidae	<i>Burhinus grallarius</i>	bush stone-curlew		C		1
animals	birds	Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo		C		49
animals	birds	Cacatuidae	<i>Cacatua sanguinea</i>	little corella		C		3
animals	birds	Cacatuidae	<i>Calyptorhynchus banksii</i>	red-tailed black-cockatoo		C		5
animals	birds	Cacatuidae	<i>Calyptorhynchus lathami lathami</i>	glossy black-cockatoo (eastern)		V		2
animals	birds	Cacatuidae	<i>Eolophus roseicapilla</i>	galah		C		39
animals	birds	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike		C		86
animals	birds	Campephagidae	<i>Coracina papuensis</i>	white-bellied cuckoo-shrike		C		10
animals	birds	Campephagidae	<i>Coracina tenuirostris</i>	black-capped cuckoo-shrike		C		32
animals	birds	Campephagidae	<i>Lalage leucomela</i>	varied triller		C		11
animals	birds	Campephagidae	<i>Lalage tricolor</i>	white-winged triller		C		1
animals	birds	Charadriidae	<i>Vanellus miles</i>	masked lapwing		C		2
animals	birds	Charadriidae	<i>Vanellus miles novaehollandiae</i>	masked lapwing (southern subspecies)		C		22
animals	birds	Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	black-necked stork		C		1
animals	birds	Cisticolidae	<i>Cisticola exilis</i>	golden-headed cisticola		C		23
animals	birds	Climacteridae	<i>Climacteris affinis</i>	white-browed treecreeper		C		1
animals	birds	Climacteridae	<i>Cormobates leucophaea</i>	white-throated treecreeper		C		6
animals	birds	Climacteridae	<i>Cormobates leucophaea metastasis</i>	white-throated treecreeper (southern)		C		52
animals	birds	Columbidae	<i>Chalcophaps longirostris</i>	Pacific emerald dove		C		6
animals	birds	Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove		C		42
animals	birds	Columbidae	<i>Geopelia striata</i>	peaceful dove		C		48
animals	birds	Columbidae	<i>Leucosarcia melanoleuca</i>	wonga pigeon		C		1
animals	birds	Columbidae	<i>Lopholaimus antarcticus</i>	topknot pigeon		C		8
animals	birds	Columbidae	<i>Macropygia amboinensis</i>	brown cuckoo-dove		C		19
animals	birds	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon		C		38
animals	birds	Columbidae	<i>Phaps chalcoptera</i>	common bronzewing		C		22
animals	birds	Coraciidae	<i>Eurystomus orientalis</i>	dollarbird		C		34
animals	birds	Corvidae	<i>Corvus coronoides</i>	Australian raven		C		2
animals	birds	Corvidae	<i>Corvus orru</i>	Torresian crow		C		144
animals	birds	Cuculidae	<i>Cacomantis flabelliformis</i>	fan-tailed cuckoo		C		30
animals	birds	Cuculidae	<i>Cacomantis pallidus</i>	pallid cuckoo		C		2

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animals	birds	Cuculidae	<i>Cacomantis variolosus</i>	brush cuckoo		C		16
animals	birds	Cuculidae	<i>Centropus phasianinus</i>	pheasant coucal		C		22
animals	birds	Cuculidae	<i>Chalcites basal</i>	Horsfield's bronze-cuckoo		C		9
animals	birds	Cuculidae	<i>Chalcites lucidus</i>	shining bronze-cuckoo		C		13
animals	birds	Cuculidae	<i>Chalcites minutillus barnardi</i>	Eastern little bronze-cuckoo		C		1
animals	birds	Cuculidae	<i>Cuculus optatus</i>	oriental cuckoo		SL		5
animals	birds	Cuculidae	<i>Eudynamys orientalis</i>	eastern koel		C		24
animals	birds	Cuculidae	<i>Scythrops novaehollandiae</i>	channel-billed cuckoo		C		26
animals	birds	Dicruridae	<i>Dicrurus bracteatus</i>	spangled drongo		C		41
animals	birds	Dicruridae	<i>Dicrurus bracteatus bracteatus</i>	spangled drongo (eastern Australia)		C		1
animals	birds	Estrildidae	<i>Lonchura castaneothorax</i>	chestnut-breasted mannikin		C		8
animals	birds	Estrildidae	<i>Neochmia temporalis</i>	red-browed finch		C		53
animals	birds	Estrildidae	<i>Taeniopygia bichenovii</i>	double-barred finch		C		28
animals	birds	Eurostopodidae	<i>Eurostopodus mystacalis</i>	white-throated nightjar		C		15
animals	birds	Falconidae	<i>Falco cenchroides</i>	nankeen kestrel		C		14
animals	birds	Falconidae	<i>Falco longipennis</i>	Australian hobby		C		3
animals	birds	Falconidae	<i>Falco peregrinus</i>	peregrine falcon		C		13
animals	birds	Halcyonidae	<i>Dacelo novaeguineae</i>	laughing kookaburra		C		101
animals	birds	Halcyonidae	<i>Todiramphus macleayi</i>	forest kingfisher		C		12
animals	birds	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher		C		33
animals	birds	Hirundinidae	<i>Cheramoeca leucosterna</i>	white-backed swallow		C		8
animals	birds	Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow		C		29
animals	birds	Hirundinidae	<i>Petrochelidon ariel</i>	fairy martin		C		11
animals	birds	Hirundinidae	<i>Petrochelidon nigricans</i>	tree martin		C		14
animals	birds	Maluridae	<i>Malurus cyaneus</i>	superb fairy-wren		C		30
animals	birds	Maluridae	<i>Malurus lamberti</i>	variegated fairy-wren		C		57
animals	birds	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren		C		77
animals	birds	Megaluridae	<i>Megalurus timoriensis</i>	tawny grassbird		C		9
animals	birds	Megapodiidae	<i>Alectura lathamii</i>	Australian brush-turkey		C		14
animals	birds	Meliphagidae	<i>Acanthorhynchus tenuirostris</i>	eastern spinebill		C		19
animals	birds	Meliphagidae	<i>Anthochaera chrysoptera</i>	little wattlebird		C		9
animals	birds	Meliphagidae	<i>Caligavis chrysops</i>	yellow-faced honeyeater		C		99
animals	birds	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater		C		20
animals	birds	Meliphagidae	<i>Lichenostomus melanops</i>	yellow-tufted honeyeater		C		11
animals	birds	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater		C		52
animals	birds	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner		C		82
animals	birds	Meliphagidae	<i>Meliphaga lewinii</i>	Lewin's honeyeater		C		49
animals	birds	Meliphagidae	<i>Melithreptus albogularis</i>	white-throated honeyeater		C		72
animals	birds	Meliphagidae	<i>Melithreptus gularis</i>	black-chinned honeyeater		C		6
animals	birds	Meliphagidae	<i>Melithreptus lunatus</i>	white-naped honeyeater		C		5
animals	birds	Meliphagidae	<i>Myzomela sanguinolenta</i>	scarlet honeyeater		C		92
animals	birds	Meliphagidae	<i>Philemon citreogularis</i>	little friarbird		C		17
animals	birds	Meliphagidae	<i>Philemon corniculatus</i>	noisy friarbird		C		109
animals	birds	Meliphagidae	<i>Plectorhyncha lanceolata</i>	striped honeyeater		C		17
animals	birds	Meliphagidae	<i>Ptilotula fusca</i>	fuscous honeyeater		C		14
animals	birds	Meropidae	<i>Merops ornatus</i>	rainbow bee-eater		C		69

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animals	birds	Monarchidae	<i>Grallina cyanoleuca</i>	maggie-lark		C		56
animals	birds	Monarchidae	<i>Monarcha melanopsis</i>	black-faced monarch		SL		16
animals	birds	Monarchidae	<i>Myiagra cyanoleuca</i>	satin flycatcher		SL		1
animals	birds	Monarchidae	<i>Myiagra inquieta</i>	restless flycatcher		C		5
animals	birds	Monarchidae	<i>Myiagra rubecula</i>	leaden flycatcher		C		39
animals	birds	Monarchidae	<i>Symphysichrus trivirgatus</i>	spectacled monarch		SL		8
animals	birds	Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian pipit		C		3
animals	birds	Nectariniidae	<i>Dicaeum hirundinaceum</i>	mistletoebird		C		48
animals	birds	Neosittidae	<i>Daphoenositta chrysoptera</i>	varied sittella		C		36
animals	birds	Oriolidae	<i>Oriolus sagittatus</i>	olive-backed oriole		C		38
animals	birds	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird		C		20
animals	birds	Pachycephalidae	<i>Colluricincla harmonica</i>	grey shrike-thrush		C		69
animals	birds	Pachycephalidae	<i>Colluricincla megarhyncha</i>	little shrike-thrush		C		12
animals	birds	Pachycephalidae	<i>Falcunculus frontatus</i>	crested shrike-tit		C		1
animals	birds	Pachycephalidae	<i>Pachycephala pectoralis</i>	golden whistler		C		47
animals	birds	Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler		C		72
animals	birds	Pardalotidae	<i>Pardalotus punctatus</i>	spotted pardalote		C		41
animals	birds	Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote		C		107
animals	birds	Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian pelican		C		1
animals	birds	Petroicidae	<i>Eopsaltria australis</i>	eastern yellow robin		C		60
animals	birds	Petroicidae	<i>Microeca fascians</i>	jacky winter		C		22
animals	birds	Petroicidae	<i>Petroica rosea</i>	rose robin		C		28
animals	birds	Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	little pied cormorant		C		7
animals	birds	Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	little black cormorant		C		2
animals	birds	Phasianidae	<i>Coturnix ypsilophora</i>	brown quail		C		17
animals	birds	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth		C		32
animals	birds	Podicipedidae	<i>Tachybaptus novaehollandiae</i>	Australasian grebe		C		3
animals	birds	Pomatostomidae	<i>Pomatostomus temporalis</i>	grey-crowned babbler		C		11
animals	birds	Psittacidae	<i>Alisterus scapularis</i>	Australian king-parrot		C		23
animals	birds	Psittacidae	<i>Barnardius zonarius</i>	Australian ringneck		C		2
animals	birds	Psittacidae	<i>Lathamus discolor</i>	swift parrot		E	CE	1
animals	birds	Psittacidae	<i>Parvipsitta pusilla</i>	little lorikeet		C		51
animals	birds	Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella		C		51
animals	birds	Psittacidae	<i>Platycercus adscitus palliceps</i>	pale-headed rosella (southern form)		C		2
animals	birds	Psittacidae	<i>Platycercus eximius</i>	eastern rosella		C		18
animals	birds	Psittacidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet		C		69
animals	birds	Psittacidae	<i>Trichoglossus moluccanus</i>	rainbow lorikeet		C		85
animals	birds	Psophodidae	<i>Cinclosoma punctatum</i>	spotted quail-thrush		C		13
animals	birds	Psophodidae	<i>Psophodes olivaceus</i>	eastern whipbird		C		54
animals	birds	Ptilonorhynchidae	<i>Ptilonorhynchus maculatus</i>	spotted bowerbird		C		1
animals	birds	Ptilonorhynchidae	<i>Sericulus chrysocephalus</i>	regent bowerbird		C		1
animals	birds	Rallidae	<i>Fulica atra</i>	Eurasian coot		C		1
animals	birds	Rallidae	<i>Gallinula tenebrosa</i>	dusky moorhen		C		9
animals	birds	Rallidae	<i>Porphyrio melanotus</i>	purple swamphen		C		2
animals	birds	Recurvirostridae	<i>Himantopus himantopus</i>	black-winged stilt		C		2
animals	birds	Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail		C		78

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animals	birds	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail		C		52
animals	birds	Rhipiduridae	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)		C		1
animals	birds	Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail		SL		29
animals	birds	Strigidae	<i>Ninox boobook</i>	southern boobook		C		54
animals	birds	Strigidae	<i>Ninox strenua</i>	powerful owl		V		39
animals	birds	Threskiornithidae	<i>Platalea regia</i>	royal spoonbill		C		1
animals	birds	Threskiornithidae	<i>Threskiornis molucca</i>	Australian white ibis		C		5
animals	birds	Threskiornithidae	<i>Threskiornis spinicollis</i>	straw-necked ibis		C		8
animals	birds	Timaliidae	<i>Zosterops lateralis</i>	silveryeye		C		76
animals	birds	Timaliidae	<i>Zosterops lateralis cornwalli</i>	silveryeye (eastern)		C		1
animals	birds	Turnicidae	<i>Turnix pyrrhorthorax</i>	red-chested button-quail		C		1
animals	birds	Turnicidae	<i>Turnix varius</i>	painted button-quail		C		14
animals	birds	Tytonidae	<i>Tyto novaehollandiae novaehollandiae</i>	masked owl (southern subspecies)		C		1
animals	insects	Hesperiidae	<i>Neohesperilla xanthomera</i>	yellow grass-skipper				1
animals	insects	Lycaenidae	<i>Acrodipsas brisbanensis</i>	bronze ant-blue				2
animals	insects	Lycaenidae	<i>Candalides cyprotus pallescens</i>	copper pencilled-blue				1
animals	insects	Lycaenidae	<i>Ogyris oroetes oroetes</i>	silky azure				1
animals	insects	Lycaenidae	<i>Ogyris zosine zosine</i>	northern purple azure (southern subspecies)				1
animals	insects	Nymphalidae	<i>Acraea andromacha andromacha</i>	glasswing				8
animals	insects	Nymphalidae	<i>Charaxes sempronius sempronius</i>	tailed emperor				1
animals	insects	Nymphalidae	<i>Danaus petilia</i>	lesser wanderer				6
animals	insects	Nymphalidae	<i>Euploea corinna</i>	common crow				5
animals	insects	Nymphalidae	<i>Junonia villida villida</i>	meadow argus				1
animals	insects	Nymphalidae	<i>Melanitis leda bankia</i>	evening brown				3
animals	insects	Nymphalidae	<i>Tirumala hamata hamata</i>	blue tiger				1
animals	insects	Nymphalidae	<i>Vanessa kershawi</i>	Australian painted lady				2
animals	insects	Papilionidae	<i>Graphium choredon</i>	blue triangle				3
animals	insects	Pieridae	<i>Belenois java teutonia</i>	caper white				1
animals	insects	Pieridae	<i>Catopsilia pomona</i>	lemon migrant				1
animals	insects	Pieridae	<i>Delias nigrina</i>	black jezebel				2
animals	insects	Pieridae	<i>Eurema brigitta australis</i>	no-brand grass-yellow				1
animals	insects	Pieridae	<i>Eurema hecabe</i>	large grass-yellow				4
animals	insects	Pieridae	<i>Eurema smilax</i>	small grass-yellow				1
animals	mammals	Canidae	<i>Canis familiaris (dingo)</i>	dingo				6
animals	mammals	Dasyuridae	<i>Antechinus flavipes flavipes</i>	yellow-footed antechinus (south-east Queensland)		C		7
animals	mammals	Dasyuridae	<i>Phascogale tapoatafa tapoatafa</i>	brush-tailed phascogale		C		2
animals	mammals	Dasyuridae	<i>Planigale maculata</i>	common planigale		C		1
animals	mammals	Dasyuridae	<i>Sminthopsis murina</i>	common dunnart		C		2
animals	mammals	Macropodidae	<i>Macropus giganteus</i>	eastern grey kangaroo		C		20
animals	mammals	Macropodidae	<i>Notamacropus dorsalis</i>	black-striped wallaby		C		2
animals	mammals	Macropodidae	<i>Notamacropus parryi</i>	whiptail wallaby		C		4
animals	mammals	Macropodidae	<i>Notamacropus rufogriseus</i>	red-necked wallaby		C		23
animals	mammals	Macropodidae	<i>Osphranter robustus</i>	common wallaroo		C		1
animals	mammals	Macropodidae	<i>Wallabia bicolor</i>	swamp wallaby		C		12/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	mammals	Miniopteridae	<i>Miniopterus schreibersii oceanensis</i>	eastern bent-wing bat		C		1
animals	mammals	Molossidae	<i>Austronomus australis</i>	white-striped freetail bat		C		11
animals	mammals	Molossidae	<i>Mormopterus lumsdenae</i>	northern free-tailed bat		C		1
animals	mammals	Molossidae	<i>Mormopterus sp.</i>			C		2
animals	mammals	Muridae	<i>Rattus fuscipes</i>	bush rat		C		2
animals	mammals	Muridae	<i>Rattus tunneyi</i>	pale field-rat		C		4
animals	mammals	Ornithorhynchidae	<i>Ornithorhynchus anatinus</i>	platypus		SL		1
animals	mammals	Peramelidae	<i>Isoodon macrourus</i>	northern brown bandicoot		C		7
animals	mammals	Petauridae	<i>Petaurus australis australis</i>	yellow-bellied glider (southern subspecies)		V		1
animals	mammals	Petauridae	<i>Petaurus breviceps sensu lato</i>	sugar glider		C		7
animals	mammals	Petauridae	<i>Petaurus norfolcensis</i>	squirrel glider		C		32
animals	mammals	Phalangeridae	<i>Trichosurus vulpecula</i>	common brushtail possum		C		38
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		V	V	67
animals	mammals	Potoroidae	<i>Aepyprymnus rufescens</i>	rufous bettong		C		1
animals	mammals	Pseudocheiridae	<i>Petauroides armillatus</i>	central greater glider		E	V	18
animals	mammals	Pseudocheiridae	<i>Pseudocheirus peregrinus</i>	common ringtail possum		C		5
animals	mammals	Pteropodidae	<i>Pteropus poliocephalus</i>	grey-headed flying-fox		C	V	9
animals	mammals	Pteropodidae	<i>Pteropus scapulatus</i>	little red flying-fox		C		10
animals	mammals	Pteropodidae	<i>Pteropus sp.</i>			C		2
animals	mammals	Tachyglossidae	<i>Tachyglossus aculeatus</i>	short-beaked echidna		SL		4
animals	mammals	Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's wattled bat		C		1
animals	mammals	Vespertilionidae	<i>Nyctophilus gouldi</i>	Gould's long-eared bat		C		2
animals	mammals	Vespertilionidae	<i>Nyctophilus sp.</i>			C		1
animals	mammals	Vespertilionidae	<i>Scotorepens greyii</i>	little broad-nosed bat		C		2
animals	mammals	Vespertilionidae	<i>Scotorepens orion</i>	south-eastern broad-nosed bat		C		3
animals	mammals	Vespertilionidae	<i>Scotorepens sp.</i>			C		3
animals	ray-finned fishes	Ambassidae	<i>Ambassia agassizii</i>	Agassiz's glassfish				1
animals	ray-finned fishes	Anguillidae	<i>Anguilla reinhardtii</i>	longfin eel				3
animals	ray-finned fishes	Eleotridae	<i>Hypseleotris compressa</i>	empire gudgeon				1
animals	ray-finned fishes	Eleotridae	<i>Hypseleotris sp.</i>					1
animals	ray-finned fishes	Plotosidae	<i>Tandanus tandanus</i>	freshwater catfish				2
animals	reptiles	Agamidae	<i>Diporiphora australis</i>	tommy roundhead		C		6
animals	reptiles	Agamidae	<i>Intellagama lesueurii</i>	eastern water dragon		C		15
animals	reptiles	Agamidae	<i>Pogona barbata</i>	bearded dragon		C		27
animals	reptiles	Boidae	<i>Morelia spilota</i>	carpet python		C		3
animals	reptiles	Chelidae	<i>Emydura macquarii macquarii</i>	Murray turtle		C		1
animals	reptiles	Colubridae	<i>Boiga irregularis</i>	brown tree snake		C		1
animals	reptiles	Colubridae	<i>Dendrelaphis punctulatus</i>	green tree snake		C		5
animals	reptiles	Colubridae	<i>Tropidonophis mairii</i>	freshwater snake		C		1
animals	reptiles	Diplodactylidae	<i>Diplodactylus vittatus</i>	wood gecko		C		5
animals	reptiles	Diplodactylidae	<i>Nebulifera robusta</i>	robust velvet gecko		C		1
animals	reptiles	Diplodactylidae	<i>Oedura tryoni</i>	southern spotted velvet gecko		C		7
animals	reptiles	Elapidae	<i>Brachyuropsis australis</i>	coral snake		C		2
animals	reptiles	Elapidae	<i>Cryptophis nigrescens</i>	eastern small-eyed snake		C		6
animals	reptiles	Elapidae	<i>Demansia psammophis</i>	yellow-faced whipsnake		C		12

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	reptiles	Elapidae	<i>Furina diadema</i>	red-naped snake		C		3
animals	reptiles	Elapidae	<i>Pseudechis guttatus</i>	spotted black snake		C		2
animals	reptiles	Elapidae	<i>Pseudechis porphyriacus</i>	red-bellied black snake		C		7
animals	reptiles	Elapidae	<i>Pseudonaja textilis</i>	eastern brown snake		C		5
animals	reptiles	Elapidae	<i>Vermicella annulata</i>	bandy-bandy		C		1
animals	reptiles	Gekkonidae	<i>Gehyra dubia</i>	dubious dtella		C		6
animals	reptiles	Pygopodidae	<i>Lialis burtonis</i>	Burton's legless lizard		C		6
animals	reptiles	Scincidae	<i>Anomalopus verreauxii</i>	three-clawed worm-skink		C		2
animals	reptiles	Scincidae	<i>Calyptotis lepidorostrum</i>	cone-eared calyptotis		C		1
animals	reptiles	Scincidae	<i>Calyptotis scutirostrum</i>	scute-snouted calyptotis		C		5
animals	reptiles	Scincidae	<i>Carlia munda</i>	shaded-litter rainbow-skink		C		1
animals	reptiles	Scincidae	<i>Carlia pectoralis</i>	open-litter rainbow skink		C		1
animals	reptiles	Scincidae	<i>Carlia pectoralis sensu lato</i>			C		3
animals	reptiles	Scincidae	<i>Carlia schmeltzii</i>	robust rainbow-skink		C		3
animals	reptiles	Scincidae	<i>Carlia sp.</i>			C		1
animals	reptiles	Scincidae	<i>Carlia vivax</i>	tussock rainbow-skink		C		20
animals	reptiles	Scincidae	<i>Concinnia martini</i>	dark bar-sided skink		C		1
animals	reptiles	Scincidae	<i>Concinnia tenuis</i>	bar-sided skink		C		1
animals	reptiles	Scincidae	<i>Cryptoblepharus pulcher pulcher</i>	elegant snake-eyed skink		C		30
animals	reptiles	Scincidae	<i>Ctenotus arcanus</i>	arcane ctenotus		C		1
animals	reptiles	Scincidae	<i>Ctenotus spaldingi</i>	straight-browed ctenotus		C		4
animals	reptiles	Scincidae	<i>Ctenotus taeniolatus</i>	copper-tailed skink		C		2
animals	reptiles	Scincidae	<i>Karma murrayi</i>	Murray's skink		C		1
animals	reptiles	Scincidae	<i>Lampropholis amicula</i>	friendly sunskink		C		2
animals	reptiles	Scincidae	<i>Lampropholis delicata</i>	dark-flecked garden sunskink		C		16
animals	reptiles	Scincidae	<i>Lygisaurus foliorum</i>	tree-base litter-skink		C		7
animals	reptiles	Scincidae	<i>Menetia greyii</i>	common dwarf skink		C		1
animals	reptiles	Scincidae	<i>Morethia taeniopleura</i>	fire-tailed skink		C		1
animals	reptiles	Scincidae	<i>Ophioscincus ophioscincus</i>	yolk-bellied snake-skink		C		2
animals	reptiles	Scincidae	<i>Tiliqua scincoides</i>	eastern blue-tongued lizard		C		1
animals	reptiles	Varanidae	<i>Varanus varius</i>	lace monitor		C		12

CODES

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

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*.

The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999*.

The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).

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

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

Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 7

Wildlife and Habitat Impact Mitigation Plan (WHIMP) prepared by Fauna Spotter Catcher



January 2022

Fauna Spotter Catcher Wildlife and Habitat Impact Mitigation Plan

Springfield Rise – Village 18
Springfield, Queensland
Report prepared for Shadforth Civil Pty Ltd



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1. Introduction

1.1 Project Background

Queensland Fauna Consultancy Pty Ltd has been engaged by Shadforth Civil Pty Ltd to prepare a Fauna Spotter Catcher Wildlife and Habitat Impact Mitigation Plan for Village 18 of the Springfield Rise development located at Springfield, Queensland. The site plans are presented in Map 1.

The objective of this report is to summarise the existing fauna values presented in the Fauna Spotter Catcher Pre-Clearance Survey and Wildlife Protection and Management Plan (WPMP) and assign mitigatory strategies applicable to probable species likely to be encountered during the clearing of identified habitats throughout or within specific localities of the site. Fauna species both common and of elevated conservation value have been considered within the parameters of onsite investigations and, where provided to QFC, include review of current fauna and floristic reports that may influence the assemblages expected to utilise the microhabitats evident within the site.

This review encompasses species identified under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the Queensland *Nature Conservation Act 1992*. Further consideration is given, where applicable, to species of iconic, cultural and/or regional significance identified under commonwealth, state or local planning instruments aimed at the persistence of biodiversity values within the area.

1.2 Project Location and Site Description

Springfield Rise is located at the end of Dublin Avenue, Springfield, west of the Spring Mountain State School and south-west of Sinnathamby Boulevard. The total clearing area is approximately 30 hectares.

Existing features exhibit a remnant woodland vegetative complex on undulating topography with drainage features and rock outcrops. Dominant trees species include *Acacia* species, *Eucalyptus tereticornis*, *E. siderophloia*, *E. crebra*, *E. acmenoides*, *Corymbia citriodora*, *Corymbia intermedia* and *Angophora leiocarpa*. Understorey vegetation consists of grass, scattered shrubs, saplings, areas of dense weed growth, and dense leaf litter.

Map 1: Site Plans



Source: Provided by Shadforth Civil Pty Ltd (2022)

1.3 Current Permits and Authorities

All activities conducted during the site investigations were implemented under the provisions of a number of permits issued to Queensland Fauna Consultancy Pty Ltd by the Department of Environment and Science (DES), formerly the Department of Environment and Heritage Protection (DEHP), and the Department of Employment, Economic Development and Innovation (DEEDI). These permits and additional authorities are listed in *Table 1*.

Table 1: Current Permits and authorities issued to QFC

Permit/Authorisation	Permit Number	Expiry Date
Damage Mitigation Permit	WA0018804	10 th November 2022
Rehabilitation Permit	WA0026789	16 th September 2023
Scientific Purposes Permit	WA0032325	3 rd March 2026
Scientific User Registration	Registration Number 589	27 th February 2022
Animal Ethics	CA 2019/02/1259	27 th February 2022
General Fisheries Permit	207015	16 th April 2023

These permits and approvals enable QFC to conduct the investigation, observation and relocation of protected animals exposed to disturbance due to infrastructure expansion resulting in the destruction of natural and artificial habitats.

2. Mitigation Strategies

2.1 Fauna Spotter

It is advised that all identified fauna habitats onsite be inspected by a licensed Fauna Spotter prior to vegetation clearing, and all vegetation removal activities be supervised during the clearing process.

2.2 Clearing Methodologies

In accordance to the *Nature Conservation (Koala) Conservation Plan 2017* the following sequential clearing conditions are required to be adhered to:

- Clearing of trees is carried out in a way that ensures koalas living in or near the area being cleared (the clearing site) have enough time to move out of the clearing site without human intervention, including in particular, for a clearing site with an area of more than 6ha, by:
 - Carrying out the clearing in stages; and
 - Ensuring not more than the following is cleared in any one stage:
 - for a clearing site with an area of 6 ha or less—50 percent of the site's area;
 - for a clearing site with an area of more than 6ha—3ha or 3 percent of the site's area, whichever is the greater; and
 - Ensuring that between each stage there is at least one period of 12 hours that starts at 6 p.m. on a day and ends at 6 a.m. on the following day, during which no trees are cleared on the site;

In addition to these measures it is recommended that clearing activities be undertaken in a directional manner specified by the fauna spotter/catcher. This is done to reduce the likelihood of negative interactions between fauna and potential hazards e.g. roads and traffic, prevent isolation of fauna through habitat fragmentation, and to ensure that natural dispersal of wildlife away from clearing activities is not impeded.

A plan detailing the recommended clearing direction for Phase 1 can be viewed in Appendix A.

2.3 Fauna Fencing

Due to the location of the clearing footprint, the installation of temporary fencing in conjunction with existing residential fencing may aid in minimizing the movement of large fauna, including highly mobile macropods into adjacent estates and nearby roadways.

The addition of further fauna fencing may be required if site conditions change and fauna considerations are presented by the fauna spotter catcher.

2.4 Felling Procedures

Trees identified as having potential fauna values (such as hollows, arboreal termitaria and exfoliating bark) will be clearly identified and subsequently marked for supervision during felling and inspected once felled. Efforts will be made to determine potentially occupant species by way of investigations for indicative signs (scats, scratchings and tracks) on the day(s) of clearing. Where no signs are found or potentially occupant species are undeterminable, machinery operators will be instructed to fell trees in a manner directed at minimising the potential risk of injury to fauna.

All identified microhabitats will be inspected via ground based observation and the direction of felling will be determined considering the safety of personnel, machinery and potentially occupant fauna. Felling procedures will see implementation of a soft felling technique specifically constructed by QFC to achieve minimal deceleration and impact upon felling. This will be achieved under direction of the Fauna Spotter present directly communicating with the plant operator(s).

2.5 Macropods

Macropod movement throughout the site was identified by the presence of scats and footprints during the fauna survey.

The area of proposed clearing activities exhibits direct connectivity to notable habitat values to the west and north-west. Therefore if clearing commences in a directional and incremental fashion any macropods potentially encountered on site may move on of their own volition. In this event, it is recommended that clearing proceed as already recommended with continual reassessment by the onsite fauna spotters.

2.6 Aquatic Fauna

In the event aquatic dewatering activities will be required within the proposed clearing area; pooled water and drainage features will be inspected during terrestrial load reduction activities ahead of the clearing front. The following recommendations are made to mitigate impacts to potentially occupant fauna:

- Inspection of banks, peripheral vegetation and other immediate terrestrial microhabitats;
- Identification of potential fauna values including: logs, rocks, artificial structures, discarded rubbish and burrows;
- Targeted searched for frog egg deposition sites on debris, bank edges, water surface and vegetation.

2.7 General Terrestrial and Arboreal Fauna

Overall the site contains high value refugial opportunities for arboreal and terrestrial fauna species. The species expected within the site are likely to primarily reflect common fauna assemblages for the region however provisions are proposed directly for common fauna and species of conservation significance.

It is advised that all identified fauna habitats onsite be inspected by a DES approved Fauna Spotter prior to vegetation clearing and all vegetation removal activities be supervised during the clearing process. Terrestrial load reduction activities will be conducted ahead of the clearing front where possible. Fauna captured will be relocated to adjacent habitat consistent with the life history requirements of the species requiring translocation.

2.8 EVNT & SLC Fauna

It is not envisaged that any species, listed under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* or the *Nature Conservation Act 1992*, other than those listed in the WPMP, will require specific management during vegetation clearing activities.

However, specific management for those identified EVNT & SLC species will include targeted investigations immediately prior to vegetation removal activities on each day of clearing and subsequently whilst clearing takes place. Preliminary investigations will be supported by additional monitoring applied during clearing activities with a designated fauna spotter operating with each machine actively involved in vegetation or identified habitat disturbance. These should include the following:

Short-beaked Echidna

Although no individuals were observed during the survey, evidence of echidna use throughout the site was observed during the inspection by QFC and would see probability for the Short-beaked Echidna to be encountered during clearing activities.

The following recommendations are made for management of potentially occurring Short-beaked Echidna:

- Daily inspection of areas to be cleared for transient individuals;
- Inspection daily for potential burrow sites;
- Monitored dismantling of identified microhabitats by fauna spotters with machinery assistance

Koala:

As favoured Koala food trees on site exceed a diameter of 100mm at 1.3 metres from the ground, requirements under the Koala Plan's 'Koala Habitat Area' provisions trigger the need for inspection and monitoring during vegetation clearing by a qualified Fauna Spotter.

Historically known to occur within the area the Koala will feature highly in daily search efforts with a dedicated and detailed methodology employed as follows:

- Pre-clearing (preliminary) investigations to be conducted specifically for Koala detection by one experienced fauna spotter a minimum half hour prior to works each day. The investigation will embrace all designated clearing zones identified for that day inclusive of a 25-metre buffer around that zone;
- Once clearing commences a fauna spotter will accompany each machine providing continuous verification of habitat values and potential identification of undetected koalas ahead of operating plant. This will also account for potentially transient Koalas that may enter the site after preliminary investigations are complete.

Direct observational methodology will include the following components

- Use of binoculars to inspect the crown, forks and trunk of trees for individuals currently occupying the site;
- 'Drip zone' searches at the base of known food trees for the presence of scats to a radius equal to that of the crown of individual trees;
- Inspection of trunks for scratchings indicative of use by Koalas;
- Repeat observations made of single trees from numerous angles at repeated times throughout the clearing activities by the assigned fauna spotter.

In the event a Koala is detected, the Fauna Spotter will determine the appropriate course of action with exclusion zones implemented and alterations to the clearing plan discussed with the Site Supervisor. Once defined, these directions will be communicated to the plant operators and clearing will proceed in accordance with the recommendations made.

Changes to Koala management strategies highlighted in the *Nature Conservation (Koala) Conservation Plan 2017* have resulted in particular conditions placed on vegetation clearance involving the removal of Koala food trees. These provisions entail an increased responsibility by developers and land clearance operators alike to ensure the welfare of potentially present Koalas in areas identified as having significance for the persistence of this species.

Where significance under planning instruments is assigned provisions may include the restriction of all clearance that directly interferes with any tree a Koala is residing in or surrounding trees that, when felled, may impact on the crown of the host tree. Koalas are to leave via their own volition through a corridor designated by the Fauna Spotter to the closest remaining suitable habitat.

Throughout this time the Koala may not be interfered with by any means unless special dispensation has been sought through the appropriate government body or where the Koala is evidently in a state of compromised health. Only when Koalas have vacated a tree can clearance operations include the identified host tree and surrounding vegetation which composes the established exclusion zone. Recommendations made by the Fauna Spotter on site will embrace these provisions.

Response to Diseased/Injured Koalas

In the event the Fauna Spotter Catcher detects a koala showing signs of disease or injury the following procedure is to be implemented immediately after establishing the machinery exclusion zone:

- Photograph the animal and where possible the specific issue observed (i.e. dirty rump, emaciation);
- Contact Bryan Robinson, Principal Ecologist at QFC, to provide further assessment of the Koala via the images taken;
- Bryan to contact the Ipswich Koala Protection Society (IKPS) President Ruth Lewis for further opinion and collaboratively decide on the relevant response and timing;
- Where deemed to require veterinary assistance a Koala trap will be acquired from IKPS and installed by QFC;
- Bryan to ensure DES are immediately notified of the intended take of the animal;
- All Koalas will be taken to Moggill Koala Hospital for veterinary examination upon capture.

Employed Koala Trapping Technique

A dedicated Koala trap will be utilised in the event a Koala is deemed to require veterinary assistance. The trap used (Figure 1 and Figure 2) will be supplied by IKPS and consists of the following components:

- 1200mm high Core flute wall;
- Steel bracing pins/star pickets;
- Zip ties;
- Purpose built Koala trapping box with guillotine/footpad style closing mechanism.

The core flute wall is placed around the tree the koala is in to form a solid barrier, subsequently channelling the animal to the trapping box when it descends from the tree. Checks are conducted on the trap periodically between 6pm and 6am to check if the Koala has entered the trap. Once captured the Koala is transported within the trapping box to minimise handling and undue stress or interference. Notification is given immediately to Bryan Robinson who will provide transportation and inform IKPS of the pending arrival of the Koala to Moggill Koala Hospital.



Figure 1: Koala trap exterior



Figure 2: Koala trap interior

Grey-headed Flying Fox:

Although no Flying Fox camps or roosts were noted during the site survey, the transient nature of this species and the abundance of available feeding resources would see probability for the species to intermittently utilise the site.

The following recommendations are made for management of potentially occurring Grey-headed Flying Fox:

- Daily Inspection of trees assigned for removal be conducted to detect potential roosting Flying Foxes;
- Trees found to contain roosting Flying Foxes to be left standing and re assessed at the end of each days clearing. Being a transient species, the disturbance associated by the surrounding clearing is likely to see individuals fly off via its own volition come nightfall and not return the following morning, thus negating the need for direct disturbance.

Spotted-tail Quoll:

Although no dens or further evidence of Spotted-tail Quoll activity was detected during the survey, the species is known to occur historically in low densities in proximity to the site. Geomorphic structure and topography are considered favourable resulting in the following recommendations for further mitigation during the clearing activity:

- Inspection daily of identified geomorphic structure such as large boulders and rock accumulates, large hollow ground logs and log stock piles;
- Monitored dismantling of identified microhabitats by fauna spotters with machinery assistance.

Greater Glider:

The site contains hollow-bearing trees with the potential to support den localities for the Greater Glider. Suitable feeding resources are highly available given the availability of *Eucalyptus* leaves; on which the Greater Glider almost exclusively feeds on. The following recommendations are made for management of potentially occurring Greater Glider;

- Basal and drip zone searches for scats indicative of the presence of Greater Glider;
- Inspection daily of trees assigned for removal in areas of likely occurrence to detect Great Glider;
- Implementation of a soft felling technique where trees are determined to have potential for occupancy.

Rufous Fantail:

The site contains preferred habitat types with the potential to support nesting localities for the Rufous Fantail and the species was sighted during the inspection.

The following recommendations are made for management of potentially occurring Rufous Fantail:

- Inspection daily of trees assigned for removal in areas of likely occurrence to detect potentially roosting birds;
- Observation of mature birds to ensure individuals are out of immediate felling zones;
- Implementation of a soft felling technique where trees are determined to have potential nests.

Collared Delma:

The presence of rocky habitat combined with *Eucalyptus* dominated woodlands presents known favorable habitat for the Collared Delma. The following recommendations are made for mitigation during clearing activity:

- Inspection daily of identified geomorphic structures including rocky outcrops, surface rock, leaf litter and bark exfoliates;
- Monitored dismantling of identified microhabitats by fauna spotters with machinery assistance.

Tusked Frog:

Habitats conducive to the presence of these amphibians are noted at several localities throughout the site. Subsequently, it is recommended that inspection of these microhabitats be conducted prior to the disturbance of microhabitat to detect potentially occupant frogs.

3. Wildlife Capture & Removal Plan

Relocation of native fauna is a strategy that may be required during the course of developmental works to adhere to the project's required nature conservation, animal welfare and human safety objectives.

In all circumstance where native fauna is required to be relocated it must be done so, or under the direct supervision of, a suitably licensed fauna spotter/catcher. A summary of the fauna capture, handling and relocations strategies to be implemented by the fauna spotter/catcher for fauna groups deemed likely, or possible, to occur on site are presented in *Table 2*.

Table 2: Fauna capture, handling and relocation strategy table

Animal Group	Capture and handling	Relocation
Lizards Geckoes Dragons Monitors	<ul style="list-style-type: none"> • Place one hand behind the head at the base of the quadrates and the other at the base of the tail behind the hind limbs; • Be cautious when handling smaller skinks and legless lizards as they may discard their tail; • Lizards and geckoes can be placed inside suitably sized calico bags • In the case of large monitor lizards keep the animal’s ventral surface directly away from the body with the tail between the upper arm and torso. • Dragons and small monitors can be placed in suitably sized calico bags. Larger monitors to be placed in suitably sized crate 	<ul style="list-style-type: none"> • Place the lizard head first into a suitable holding crate for later release. <ul style="list-style-type: none"> ○ Dragons & monitors– release up trees or into heavy vegetation; ○ Water dragons – in the vicinity of riparian areas; ○ Skinks, Geckoes, Legless lizards – around creek margins.
Snakes	<ul style="list-style-type: none"> • Due to their mobile nature, large snakes generally do not require to be handled or relocated, with the exception of slow moving species (i.e. pythons) or smaller species; • Snakes should be identified and only moved if competent and safe to do so (see SOP006 Handling Venomous Snakes Procedure); • Do not attempt to catch a snake if you’re not competent; • Injured snakes should be handled with suitable equipment. 	<ul style="list-style-type: none"> • Release in suitable habitat e.g. along creek lines for python and tree snakes • If feasible take them well away from clearance site to a suitable release location • Release discreetly away from high density suburban areas
Small Mammals	<ul style="list-style-type: none"> • Place a gloved hand around the whole animal in the case of small mammals (melomys or rats), • Do not handle rodents by the tail as this will cause damage to the tail sheath • Place the animal in calico bag in a cool place for later relocation. • Minimise holding time to avoid animal gnawing through bags and escaping 	<ul style="list-style-type: none"> • Release animal into area suitable to its habitat requirements. Ensure plenty of cover is available.

Animal Group	Capture and handling	Relocation
<p>Glider Family</p>	<ul style="list-style-type: none"> • Place gloved hands around the animal at initial capture; • Place the glider(s) into a calico bag or suitable animal crate ensuring family groups are kept together for all-inclusive release; • Place in a cool dry area during the day. • When using calico bags ensure the bag is hung and well ventilated • Where possible contain gliders within hollow by plugging openings with a towel or calico bag 	<ul style="list-style-type: none"> • Release glider into habitat with natural hollows and canopy cover; • When releasing a family group with more than one furred young (being carried on the back) either: <ul style="list-style-type: none"> ○ Divide young between parents as a mother is unlikely to carry more than one young, ○ Place young in elevated hollow with parents and allow them to move away in their own time. • Place animal in bag at the base of the selected tree, opening the bag wide and allowing the animal to leave the bag when it is ready. • Relocate hollow (with gliders inside) to suitable habitat and cover lightly with foliage so that the gliders can move away of their own accord and are protected from predators.
<p>Amphibians</p>	<ul style="list-style-type: none"> • Amphibians should be handled only when necessary and handling times should be kept to a minimum to help prevent: <ul style="list-style-type: none"> ○ Removal of the protective mucous layer covering the skin of amphibians; ○ To prevent handling stress induced by changes in their body temperature; ○ Risk of spreading pathogens and parasites. • Amphibians from different sites need to be kept isolated from each other, and need to be kept in different containers or bags; • Any dead or sick amphibians need to be quarantined from other amphibians. <p>Amphibians can be handled utilising one of the following methodologies:</p> <ul style="list-style-type: none"> • Bare handed – ensure hands are sterilized before handling and free from lotions, sunscreen etc. • Gloves – disposable gloves desirable or disinfect gloves between handling different animals; • Plastic bags – Single use lightweight plastic bags can be used to pick up and handle frogs; again, plastic bags should be disposed of before handling amphibians from a different site. • All staff should be knowledgeable and familiar with the <i>Interim Hygiene Protocol for Handling Amphibians – Technical Manual (DEHP)</i> 	<ul style="list-style-type: none"> • Always ensure that amphibians are kept moist until release. This can include storing in a designated container with moist soil or toweling or in a wet calico bag; • Release into suitable adjacent vegetation that is typical of the species requirements; • Suitable release locations include riparian vegetation, low-lying wetlands, alongside creek lines, hollow logs, dams and ponds; • Amphibians from different sites need to be released in separate locations; • Disinfection procedures in relation to amphibians need to be followed.

Animal Group	Capture and handling	Relocation
Macropods	<ul style="list-style-type: none"> Capture and restraint of macropods carries a high risk of injury and fatal hyperthermia/myopathy syndrome, and must not be performed by inexperienced personnel, or without appropriate equipment and sedation. Capture and restraint of healthy macropods (other than pouch young) must be performed using sedation or anaesthesia due to the high risk of developmental myopathy, and other capture and restraint-associated conditions. Sedative and anaesthetic drugs may only be used under direct supervision of a registered veterinarian, or by appropriately licensed persons (Hanger & Nottidge, 2009). 	<ul style="list-style-type: none"> Release animal into suitable to its habitat requirements. Ensure plenty of cover is available. Macropods are to be released within the range of normal movement from their place of origin. E.g. a Kangaroo can be released within 100 km of its origin, based on its capacity to travel long distances. Monitor animals to ensure adequate recovery if sedated.
Microbats	<ul style="list-style-type: none"> Only vaccinated persons are to handle bats If possible, plug the hollow opening with a bag or towel and ask the operator to cut the hollow from the tree; Always wear gloves when handling bats. If not contained within a hollow, place bats inside a calico bag and hang upright in a cool place 	<ul style="list-style-type: none"> Relocate hollow (with bats inside) to suitable habitat and cover lightly with foliage so that the bats can move away of their own accord and are protected from predators. Bats not contained within a hollow should be released as late as possible at the end of the day.
Possums	<ul style="list-style-type: none"> Use thick elbow length gloves when handling possums; Try to grip the animal behind the head near the shoulder blades and around the tail so that you have control of the animal; Keep fingers away from the mouth of the animal; Keep the animal's body facing away at all times; Transfer into a thick calico bag and then into a kitty crate. Place in a safe and shady place until you can relocate the animal. 	<ul style="list-style-type: none"> Release the possum into habitat with adequate hollows and cover; Place animal in bag at the base of a select tree, opening the bag and allow the animal to leave the bag when it is ready; When releasing a Ringtail Possum mother with more than one furred young (being carried on her back) it is unlikely that she will carry both young if highly stressed; <ul style="list-style-type: none"> Choose a smaller shrubby tree with vines or heavy foliage (so the adult can construct a drey easily) Watch the adult ascend the tree, it is possible she will only carry one young and so any additional young may be pushed from her back It may be necessary to take one or more of the young to a wildlife carer If possible place mother and young in a suspended hollow, cover lightly with foliage and allow the animals to move on their own accord. This way the mother can ferry young one at a time to a more suitable location.

Animal Group	Capture and handling	Relocation
Birds	<ul style="list-style-type: none"> • Use gloves when handling larger birds • Use a towel to cover the bird and simultaneously restrain the bird and transfer into calico bag • With larger parrots and raptors, restrain head and legs and transfer into a kitty crate • Wrap chicks loosely in a towel and transfer to kitty crate, keep in a warm location. 	<ul style="list-style-type: none"> • Relocate adult birds in suitable habitat • Chicks should be referred to wildlife carer
Koalas	<p>Movement of Koalas is heavily legislated in South East Queensland. Koalas are not to be captured or relocated without the prior consent of Department of Environment and Science (DES). Koalas should be left to move away of their own volition and trees are not to be felled while a Koala remains in occupancy. See SOP003 Koala Management Procedure for further information.</p>	

4. Wildlife Contingency Plan

In the event sick, injured or orphaned protected animals are encountered during the course of the project they shall be administered to in accordance with the *Code of Practice Care of Sick, Injured or Orphaned Protected Animals in Queensland* under the *Nature Conservation Act 1992*.

The stages in which injuries or illness are described under the code are as follows:

Critical: Injuries or illnesses that are life-threatening; for example, an animal that has been struck by a car and has serious head injuries.

Serious: Injuries or illnesses that might reasonably be expected to cause moderate pain (but are not immediately life-threatening), and the animal is not showing obvious signs of distress or pain, or significantly reduced mental activity; for example, an animal with a closed fracture but no other apparent injuries and that is alert and responsive.

Mild: The injuries or illness of an animal appear to cause little discomfort, pain or function loss and are not life-threatening (even without immediate vet treatment); for example, superficial cuts, superficial bruising or orphaned animals suffering from mild dehydration.

4.1 Basic Wildlife Care

If wildlife requiring care are encountered by the fauna spotter/catcher, they will be attended to in the manner set out by the guidelines provided in *Table 4*. Supplementary advice will be sought from a wildlife carer and/or veterinarian where required. QFC have previously utilised experienced local carer groups and vets. These are listed in *Table 3*.

Table 3: List of Local Vets & Wildlife Carer Groups

Vets			
Name	Location	Contact Number	Comments
RSPCA Wildlife Hospital	139 Wacol Station Road, Wacol	07 3426 9999	24 Hours/7days
Carers			
Name	Location	Contact Number	Comments
RSPCA Wildlife Hospital	139 Wacol Station Road, Wacol	07 3426 9999	24 Hours/7days
Ipswich Koala Protection Society	Ipswich	Ruth: 07 5464 6274 / 0419 760 127 Helen: 07 3282 5035 / 0417 604 761	Specialize in koalas however rescue all wildlife

Table 4: Basic Wildlife Care

Birds	Reptiles & Amphibians	Mammals
<p>Egg</p> <p>Viable eggs must be kept warm until transferred to a suitable wildlife carer. It is necessary that the orientation of the eggs be maintained as fixed embryos may be lost. Keep wrapped in a pouch and on a heat source (where available). An ideal temperature is between 25-27° (DEHP 2013); where possible attempt to identify the species so the carer can be informed as the management of eggs can vary in accordance with species and stage of development.</p>	<p>Egg</p> <p>Viable eggs must be kept warm and stable until transferred to a wildlife carer. It is necessary that the orientation of the eggs be maintained as fixed embryos may be lost. Keep wrapped in pouch or towel and place into an animal crate in a safe location.</p>	<p>Neonate</p> <p>Unfurred animals need to be kept warm until transferred to a carer. Place into a pouch and onto a heat pad. Ideal temperature is between 31-34°. 25-27° is appropriate in most other cases (DEHP 2013). Regularly check the animal to ensure it is not overheating by observing for obvious signs of distress (i.e. panting, very warm to the touch, red blotched skin). Adjust the temperature where required. Seek further advice from the carer if you are unsure.</p>
<p>Chick</p> <p>Make sure the animal is correctly identified as different species often have very different requirements. Place chicks into a pouch/towel onto a heat source maintained around 31-34° (only if they have not fledged) and keep in an animal crate until transferred to a carer.</p>	<p>Juvenile</p> <p>Place animals in a suitable lined crate and keep covered in a dark quiet place. Refer to the wildlife contact list in your QFC Folder for a carer who specialises in reptiles.</p>	<p>Juvenile</p> <p>Place into a lined crate and keep covered in a dark and quiet location.</p>
<p>Adult</p> <p>Keep adult birds in a lined animal crate or cage and covered in a quiet area.</p>	<p>Adult</p> <p>Place animals in a suitable lined crate and keep covered in a dark quiet place. Refer to the wildlife contact list in your QFC Folder for a carer who specialises in reptiles.</p>	<p>Adult</p> <p>Place into a lined crate and keep covered in a dark and quiet location.</p>
<p>Feeding</p> <p>Providing food and water is generally not required during short periods (2-3 hrs) though this should be reconsidered if animals need to be held longer. Consult the vet and/or carer for further advice on how to proceed.</p>	<p>Feeding</p> <p>Newly hatched reptiles may require feeding if kept overnight. Consult with QFC for further advice. Snakes and turtles will not require feeding but water should be made available.</p>	<p>Feeding</p> <p>Providing food and water is generally not required during short periods (2-3 hrs) though this should be reconsidered if animals need to be held longer. Consult the carer for further advice on how to proceed.</p>

4.2 First Aid

Animals suffering from serious injuries or illness encountered on the project should be passed on to veterinary care as soon as possible. In the interim a licensed fauna spotter/catcher can provide first aid for the animal and organise suitable transportation.

If a seriously sick or injured animal is encountered the fauna spotter/catcher should:

1. Keep the animal calm by placing into an animal crate and keeping it covered in a dark and quiet location. Isolate any nearby threats such as domestic animals or predators.
2. Quickly and thoroughly inspect the animal for trauma. If the injuries are not serious enough to require euthanasia administer the basic first aid as a minimum (but only if capable to do so)

Representative first aid that may be administered by a fauna spotter/catcher is provided in *Table 5*.

Table 5: Wildlife First Aid

Ailment	First Aid
Bleeding	Using material that is clean and sanitary, apply direct pressure to the affected area. Bandages can be used to hold material in place until vet treatment can be sought. Veterinarian treatment should be sought for further assistance as soon as possible.
Broken limbs	House the animal in a suitably sized animal crate with towels under the animal for comfort. Keep the crate covered and in a quiet location. Proceed to a veterinarian for further assistance as soon as possible.
Injured tails	House the animal in a suitably sized animal crate with towels under the animal for comfort. Keep the crate covered and in a quiet location. Proceed to a veterinarian for further assistance as soon as possible.
Concussions	House the animal in a suitably sized animal crate with towels under the animal for comfort. Keep the crate covered and in a quiet location. Proceed to a veterinarian for further assistance as soon as possible.

4.3 Euthanasia

Section 12 of the code details how to determine when euthanasia is required and how to euthanise animals ethically. The following standards as listed under the code are to be followed when assessing whether euthanasia is required:

- The euthanasia of wildlife where required is to be provided for by all wildlife rehabilitators;
- Euthanasia without exception is to be carried out when:
 - Significant pain or suffering is to be alleviated where it is not able to be managed by a vet;
 - Further treatment is **not** practical, or recovery is **not** expected in a way in which the animal can be successfully rehabilitated back to the wild;
 - Resources are not available to provide appropriate care or an acceptable quality of life throughout the likely rehabilitation period.
- Animals that are suffering and have a poor prognosis for survival must be euthanised rather than left to die from the injury or illness. Failure to undertake appropriate action is a breach of the *Animal Care and Protection Act 2001*.
- Unless permission has been granted by the Department of Environment and Heritage Protection for the animal to enter the Queensland Species Management Plan (QSMP) or otherwise advised by the DEHP Wildlife Management Director, animals must be euthanised when:
 - An orphaned animal is not viable or likely to be rehabilitated;
 - No suitable release locations are available;
 - The ability for an animal to reproduce is lost due to an injury, disease or surgical procedure;
 - The ability to move freely or normally (i.e. run, climb, crawl, hop, fly or swim) is permanently impaired. Examples are: a missing or impaired limb, wing, foot or tail that would significantly impair the animal's ability to survive in the wild;
 - The ability to sense environment (i.e. see, smell, feel, taste or hear) is permanently impaired. For example: missing or injured organ such as an eye, ear or nose that would significantly impair the animal's ability to survive in the wild;
 - The ability to catch, find or handle food is permanently impaired;
 - Its advanced age renders it unlikely to survive in the wild.

5. Wildlife Storage & Housing Plan

For wildlife requiring storage, temporary housing and transportation to release sites and/or to a wildlife carer or veterinarian, guidelines set out in the Code of Practice and QFC's Animal Ethics Permit will be followed.

Dependent on the species of animal and condition of the animal, temporary storage and housing of animals will be as follows:

Calico bags: Calico bags will be used to temporarily house fauna such as snakes, lizards and small mammals (including microbats), Bags will range in size from 200mm x 200mm to 600mm x 1800mm. Bag selection will vary according to the size of animals to be placed in them. In the case of snakes, a "hoop bag" may be used to facilitate capture. The hoop is approximately 500mm in diameter attached to a handle. The bag is placed around the hoop ensuring a greater area in which to pass the snake through into the bag.

Plastic holding tubs/containers/animal crate: Plastic holding tubs/containers/crates will be used to temporarily house fauna such as snakes, lizards, frogs, small mammals and birds (Plastic holding tubs/containers/crates will range in size from 150mm x 150mm x 120mm to 500mm x 400mm x

400mm. Plastic holding tubs/containers/crates selection will vary according to the size and number of animals to be placed in them.

In addition to this, material is used to line the tub/crate to ensure the animals won't lose its footing. This may include folded towels on the bottom of the crate or a fitted pad. These items are washed between each use to reduce the spread of disease/parasites.

Section 9 of the Code relates to how transportation of wildlife should be undertaken. The following will be adhered to when transporting wildlife to the vet and/or carer:

- Additional pain or distress of the animal is to be avoided;
- Wildlife should only be transported when necessary;
- Transport containers must be appropriate for the species (size, strength and behaviour of species being moved);
- Transport containers must be designed and maintained in a way as to:
 - Prevent injury;
 - Prevent escape;
 - Prevent rolling/tipping during transit;
 - Prevent damage to plumage (feathers);
 - Be hygienic;
 - Minimise stress and
 - Be suitably ventilated.

- Non-compatible species must not be transported in a manner which allows for visual or physical contact;
- Containers must be secured to prevent movement and provide protection from direct sunlight, wind and rain;

Venomous, dangerous or potentially disease transmitting animals must be clearly marked with warning labels (i.e. Caution – ‘venomous snake’ or ‘live bat’) and be locked and secured.

6. Wildlife Release & Disposal Plan

Retained bushland lies to the north of the proposed detention basin and contains similar habitat types suitable for species likely to be encountered when clearing.

With the exception of highly mobile species such as birds and macropods where natural relocation may occur, it will be necessary for the fauna spotter/catcher to translocate the majority of fauna found into suitable habitat within these areas. A map of the intended release site can be viewed in Appendix B.

In regard to all fauna capture and disposal activities conducted on the project the following records will be made:

- a. species;
- b. identification name or number;
- c. sex (M, F, or unknown);
- d. approximate age or age class (neonate, juvenile, sub-adult, adult);
- e. time and date of capture;
- f. method of capture;
- g. exact point of capture (GPS point);
- h. state of health;
- i. incidents associated with capture likely to affect the animal;
- j. veterinary intervention or treatments;
- k. time held in captivity;
- l. disposal (euthanasia, re-release, translocation etc);
- m. date and time of disposal;
- n. details of disposal (if released, exact point of release GPS);
- o. for released animals: distance in metres from point of capture to point of release.

7. Post Works Impact Minimisation

As the project area will be cleared of all vegetation, post works impact monitoring and/or impact minimisation is deemed not necessary.

In the event that fauna is found on site post-works, it is recommended personnel contact QFC and a licensed and experienced wildlife consultant can be dispatched to remove and relocate the animal should it be necessary. QFC wildlife consultants are available 24/7 for fauna related call-outs in relation to this project.

It is recommended that if any fauna, such as Kangaroos and Wallabies, are noted in the wider area and appear distressed post-works that QFC be contacted to further assess the situation.

8. Assessment, Conclusion and Fauna Management Recommendations

A number of conclusions and recommendations are presented, with the specific intention of providing a comprehensive management structure to facilitate minimal impact to fauna during the clearing of vegetation and subsequent disturbance of habitats. The directives given by Fauna Spotter Catchers should embrace a “best practice” approach which includes implementation of proven specific management techniques for identified habitat types and compliance with legislation relevant to the activity.

Fauna management is presented here specific to EVNT & SLC fauna, general terrestrial and arboreal fauna and aquatic fauna. Although each is treated separately, overlap does occur within target techniques providing a comprehensive approach for target species of all conservation significance.

9. References

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10. Appendix A: Intended Direction of Clearing



11. Appendix B: Intended Release Sites for Wildlife



Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 8

Contractor Environmental Awareness Acknowledgement Notice

Woogaroo Heights

ENVIRONMENTAL AWARENESS

CONTRACTOR ACKNOWLEDGEMENT

I, **Tony Hooper**, the Contractor (or the Contractor Representative), appointed by Lendlease Communities, acknowledge receipt and acceptance of the Lendlease Communities rules and policies pertaining to undertaking clearing work only in approved areas as outlined in the **V18 Environmental Pre-clearance Checklist** and attachments. By signing below, I acknowledge that there are mechanisms in place to ensure all material provided relating to approved works extents will be read and understood by all site contractors and sub-contractors prior to commencing works on site.

Shadforth

Company Name (Please print)



Signature (Contractor / Contractor Representative)

Tony Hooper

Name (Please print)

Construction Manager

Title / Position

28/10/2021

Date

Woogaroo Heights

Environmental Pre-Start Checklist

Attachment 9

Pre-start completion confirmation

Jordan Bachmann

From: Nicholas Gill <NGill@northrop.com.au>
Sent: Thursday, 27 January 2022 5:21 PM
To: Amit Giri
Cc: Shane Miley; BN182372 - SR V17 & 18; Duffy, Tom; Stephen Oddo; Tony Hooper; Jordan Bachmann
Subject: Springfield Rise V18 2.6 Clearing (5439/2019/IU)

Hi Amit,

Please be advised that Lendlease and Shadforth's are making preparations to begin clearing the section of Village 18 within the 2.6 Earthworks extents. The Pre-Start for these works has already been undertaken on the 25.08.2021.

We are currently in the process of:

- Updating CPESC plans showing the ESC management of the site as it falls away from the existing basins
- Conducting a new Pre-Clearance Report for this area (the extents have been flagged on site)

The above documents will be sent through prior to works being undertaken, and these works are scheduled to start on the 2nd Feb.

Any issues please don't hesitate to let me know.

Nick Gill

Senior Civil Engineer

Northrop Consulting Engineers

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