



Annual Compliance Report EPBC 2016/7723

4 February 2021 – 5 February 2022

Torhaven

Rawlings Road Development, Deebing Heights, Ipswich, Qld
Defence Housing Australia

Year 4

4 May 2022

SHG Ref: 8122



Document Control

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Prepared by

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Acronyms and References

ACR	Annual Compliance Report
DHA	Defence Housing Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
ha	hectares
km	kilometres
m	metres
OAMP	Offset Area Management Plan
PMAV	Property Map of Assessable Vegetation
QTFN	Queensland Trust for Nature
SHG	Saunders Havill Group
VMA	<i>Vegetation Management Act 1999</i> (Qld)
OAMP	Offset Area Management Plan for EPBC 2016/7723, prepared by Queensland Trust for Nature (October 2017)
Year 1 ACR	Annual Compliance Report, 5 February 2018 to 4 February 2019 EPBC 2016/7723, Rawlings Road Development, Deebing Heights, prepared for Defence Housing Australia by Saunders Havill Group (August 2019)
Year 1 Offset Report	Koala Crossing Baseline Koala Assessment for Offset EPBC 2016/7723, 596 Mt Flinders Road Peak Crossing, Year 1 Baseline, prepared by Queensland Trust for Nature (October 2018)
Year 2 Offset Report	Koala Crossing Baseline Koala Assessment for Offset EPBC 2016/7723, 596 Mt Flinders Road Peak Crossing, Year 2 prepared by Queensland Trust for Nature (May 2020).
Year 3 Offset Report	Koala Crossing Offset Area Management Report for EPBC 2016/7723, Version 3, prepared by Queensland Trust for Nature (April 2021)
Year 4 Offset Report	Koala Crossing Offset Area Management Report for EPBC 2016/7723, prepared by Queensland Trust for Nature (March 2022)

1. Introduction

This Annual Compliance Report (ACR) Year 4 (4 February 2021 – 5 February 2022) has been prepared on behalf of Defence Housing Australia Pty Ltd (the Proponent) for the Rawlings Road development (EPBC 2016/7723), now known as ‘Torhaven’ (the Project).

In accordance with the approval granted on the 9th January 2018 under the *Environment Protection and Biodiversity Act 1999* (EPBC Act), this ACR has been prepared in response to Condition 5 which states:

“Within 60 business days of every 12 months anniversary of the commencement of the action, the approval holder must publish a report on its website addressing compliance within each of the conditions of this approval, including the implementation of any management plans or monitoring programs as specified in the conditions [...]”

1.1. Reporting Period

This ACR details the status and compliance of the Project for the 12 month reporting period between the 4th February 2021 to 5th February 2022.

The ACR must be published on the Proponent’s website and notification provided to the Department of Agriculture, Water and the Environment (DAWE, the Department) within 60 business days of the 12 month anniversary of the commencement of the action.

1.2. EPBC Approval

Defence Housing Australia (DHA), as the Proponent of the Project (reference EPBC 2016/7723) was issued with an approval by the Department on the 9th January 2018, subject to conditions.

Key details related to EPBC 2016/7723 approval are provided in **Table 1**.

Table 1: Approval Details

Commonwealth Reference	EPBC 2016/7723
Approval Holder	Defence Housing Australia Pty Ltd
ABN	72 968 504 934
Project Name on the Approval	Rawlings Road Development, Deebing Heights, Ipswich, Queensland
Approved Action	Construct a residential development consisting of 295 new lots with 332 dwellings, which a development footprint of 25.37 ha, located in Ripley Valley, Ipswich Queensland.
Controlling Provision(s)	Listed threatened species and communities (sections 18 & 18A) Commonwealth actions (section 28)
Approval Date	9 January 2018
Expiry Date of the Approval	17 January 2031
Date of Commencement of the Action	5 February 2018
Address	Rawlings Road, Deebing Heights
Local Government Area	Ipswich City Council

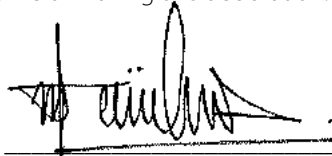
1.3. Site Context

Contextually, the Project is located in South East Queensland, approximately 6.5 km south of Ipswich. The project area covers 23.37 hectares (ha) of which 15 ha has been deemed critical habitat for the koala and to be cleared under the approval. A further 14.7 ha of habitat was deemed by the Department to be indirectly impacted by the action.

1.4. Declaration of Accuracy

This declaration has been signed by the approval holder.

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 no knowledge of that authorisation being revoked at the time of making this declaration.



Signed

Full name (please print)

Murray Saunders

Position (please print)

Managing Director

Organisation (please print including ABN/ACN if applicable) Saunders Havill Group ABN 24 144 972 949

Date

04 / 05 / 2021

1.5. Overview of Key Activities and Achievements

During Year 4 of construction and compliance reporting, numerous development and environmental management activities were undertaken, including:

- House construction in newer stages
- Civil earthworks on western periphery
- Year 4 Offset surveys and reporting
- Stage 1 rehabilitation area established

1.6. Variation of Conditions Attached to Approval

During the current reporting period, on 19 January 2022, a variation of the conditions attached to the approval was approved under section 143 of the EPBC Act. The variation was approved as follows and is detailed in **Appendix A**.

- Delete definitions of **Clear/clearing** and **Department** attached to the approval and substitute with the definitions specified in the table below:

As varied on the date this instrument was signed	Clear/clearing means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation, but not including weeds. For further guidance, see the <i>Australian Weeds Strategy 2017 to 2027</i> , Commonwealth of Australia, 2017 (available via https://www.awe.gov.au/sites/default/files/sitecollectiondocuments/pests-diseases-weeds/consultation/aws-final.pdf).
--	--

As varied on the date this instrument was signed	Department means the Australian Government agency responsible for administering the EPBC Act .
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- Delete Attachment A attached to the approval substitute with the Attachment A specified in the table below (refer to **Appendix A**).

2. Current Status of the Project

2.1. Development actions

Over the last 12 month period civil construction has continued to occur over Stages 3 and 4 of the development including:

- Clearing vegetation
- Construction of Rawlings Park
- Rehabilitation and landscaping throughout the project area
- Year 4 Offset surveys and reporting

Plan 1 illustrates the advancement of development to the end of the Year 4 reporting period. **Plan 2** shows the extent of clearing of koala critical habitat since the commencement of the action in 2018.

The following photos illustrate the development actions over the Year 4 reporting period.

1. Development Actions








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

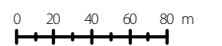
Layer Sources
 Qld State Cadastre and Mapping layers © State of Queensland (Department of Resources) 2022. Updated data available at <http://qldspatial.information.qld.gov.au/catalogue/>
 Aerial Imagery © Aerometrex, 14 November 2021

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Legend

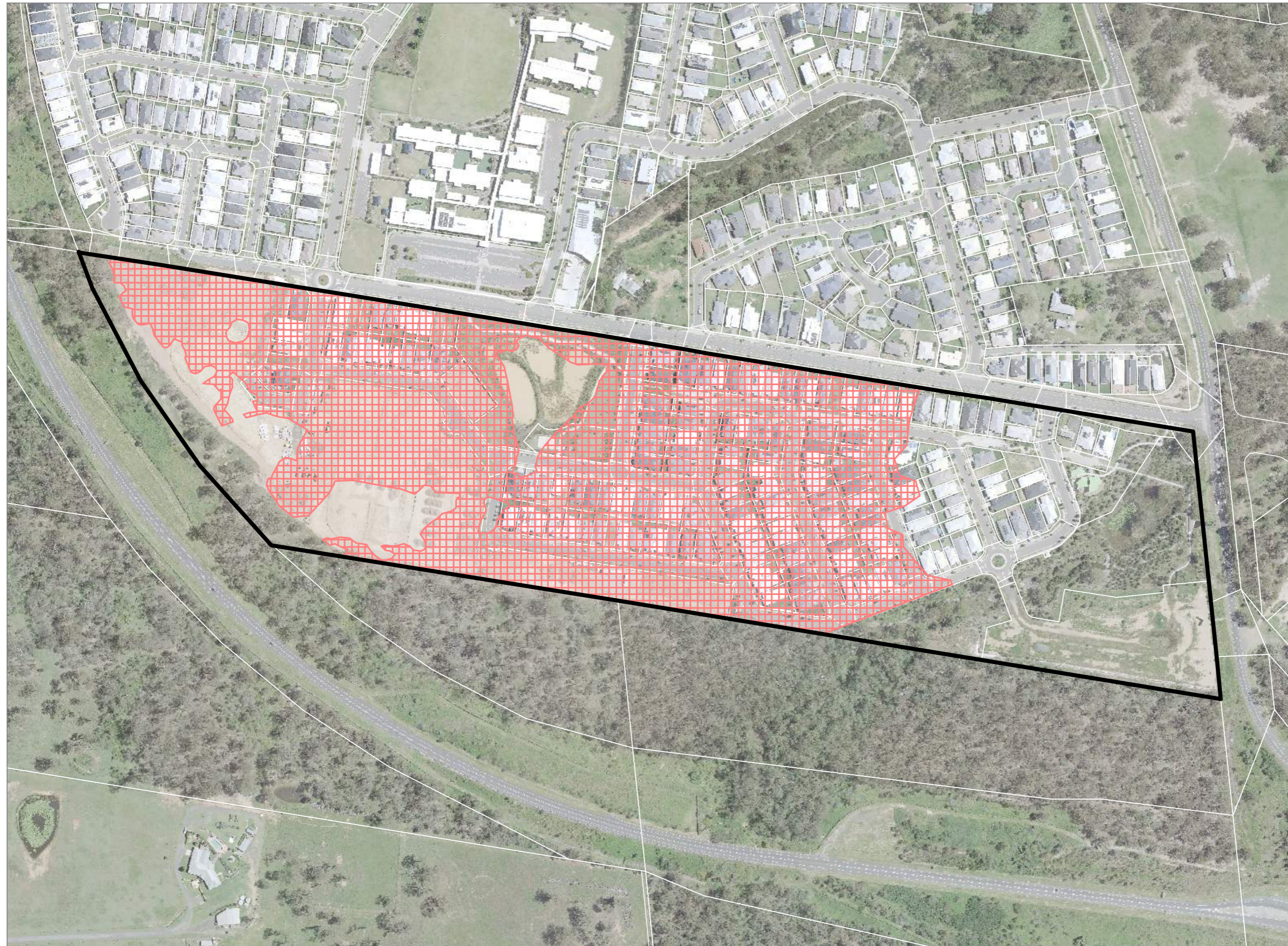
-  Site DCDB
-  Qld DCDB
-  Established Housing
-  Future Housing
-  Approximate Future Rail Corridor

Issue	Date	Description	Drawn	Checked
A	28/03/2022	Preliminary	LS	MS
B	4/05/2022	Amendments	LS	MS



Transverse Mercator | GDA 1994 | Zone 56 | 1:4,000 @A3

2. Clearing Progress






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

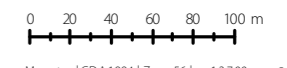
Layer Sources
 Qld State Cadastre and Mapping layers © State of Queensland (Department of Resources) 2022. Updated data available at <http://qldspatial.information.qld.gov.au/catalogue/>
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Legend

-  Site DCDB
-  Qld DCDB
-  Koala Critical Habitat Clearing - 14.88 ha

Issue	Date	Description	Drawn	Checked
A	28/03/2022	Preliminary	TC	MS
B	4/05/2022	Amendments	LS	MS



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Rawlings Road, Deebing Heights 



Photo 1: Stage 1 rehabilitation area – May 2021

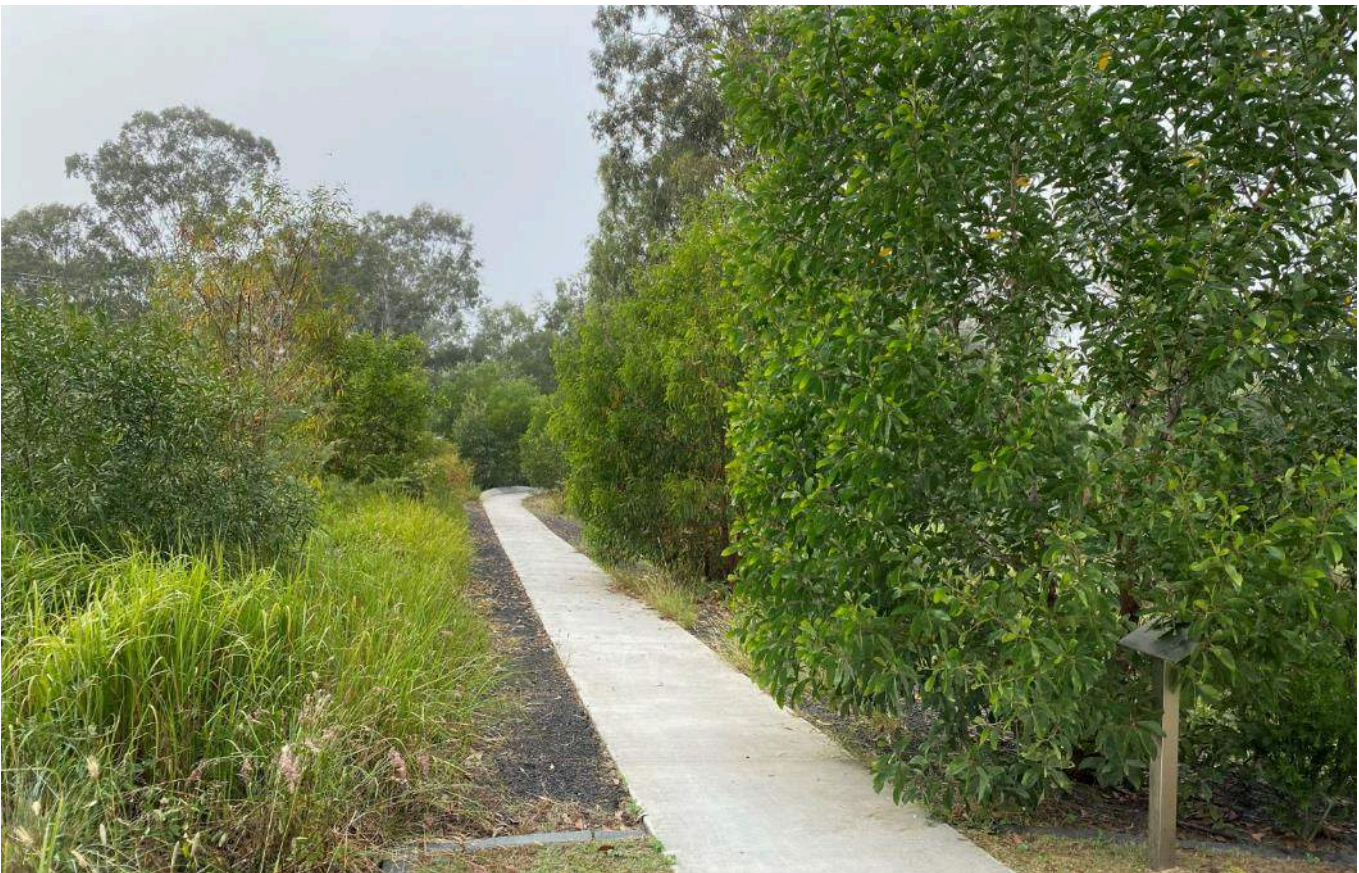


Photo 2: Footpath and rehabilitation plantings Stage 1 - May 2021



Photo 3: Pedestrian bridge over culverts within Stage 1 rehabilitation area – May 2021



Photo 4: Footpath and revegetation plantings within Stage 1 rehabilitation area – May 2021

2.2. Offset Reporting

As required by the EPBC approval baseline surveys for Koala density, Koala food trees and non-native predators was undertaken in Year 1 (October 2018). Survey methods, metrics and performance indicators were established to be able to demonstrate achievement of an increase in koala density and food trees and decrease in non-native predators at the conditioned milestones as detailed within the *Offset Area Management Plan for EPBC 2016/7723, prepared by Queensland Trust for Nature (October 2017)* (OAMP). Survey methods and metrics were established and provided in the first Annual Compliance Report which included the *Koala Crossing Baseline Koala Assessment for Offset EPBC 2016/7723, 296 Mt Flinders Road Peak Crossing, Year 1 Baseline: October 2018*, prepared by Queensland Trust for Nature (QTFN) (Year 1 Offset Report) as an attachment.

Surveys from 2015 to 2018 and the baseline surveys conducted in 2018 were completed by QTFN and their research partners Koala Ecology Group (of the University of Queensland) and OWAD Environmental (using koala detection dogs) and documented within the *Koala Crossing Offset Area Management Report 2018 EPBC 2013/7047, Year 2 April 2020* (Year 2 Offset Report) prepared by Queensland Trust for Nature.

The *Koala Crossing Offset Area Management Report for EPBC 2016/7723, Version 4, prepared by Queensland Trust for Nature (March 2022)* (Year 4 Offset Report) was completed for this reporting period and is included as **Appendix B**. This reporting period, Year 4, was not an intensive survey year and as such the Year 4 Offset Report documents only annual monitoring within the offset area, in line with the requirement of the OAMP. The following subsections therefore summarise previous intensive surveys and provide updates and changes in trends, where appropriate, associated with annual monitoring in accordance with the OAMP.

2.2.1 Koala Density

Baseline Koala surveys were conducted in 2018. These surveys incorporated results from as far back as 2015 and were reported in the Year 1 Offset Report.

Baseline Koala density was determined using the following metrics:

- **Metric 1: Koala Abundance** measured by SAT results
 - o Koala SAT results show an average activity rating of 13.75% ± 6.4% adjusted for confidence intervals
- **Metric 2: Koala Occupancy** measured by the average number of trees searched before a scat is found.
 - o Scats were found within the EPBC 2016/7723 site after searching 7±1.2 trees
- **Metric 3: Koala Activity** measured by photographic evidence
 - o Photo monitoring stations are positioned throughout the Koala Crossing property.

Year 4 Summary

The Year 4 report documents the continued Koala observations and monitoring within the offset area, in line with the requirement of the OAMP between February 2021 and February 2022. In this reporting period, ongoing opportunistic observations regarding Koala were made in the form of scat searches and camera trapping. Thirteen camera trapping stations were deployed across the wider offset property (one within the offset area), and scat searches were conducted opportunistically across the offset area.

Year 4 surveys utilising Koala scat (metric 1 and 2) and camera trap observations (metric 3) suggest a stable population of Koalas across the property. Baseline surveys indicated a population between 10-15 Koalas using the site. Koala scat searches detected the presence at 88% of the plots examined. Koala scat searches detected Koala presence at 76% of plots examined in a variety of habitats across the Koala Crossing site, indicating a stable and active population of Koalas in the site (refer to **Figure 1**).

Scat searches from the 2021/2022 monitoring period show Koala scats around the offset area in similar locations to past scat occurrences. One koala was observed as part of the bi-annual monitoring in the period relevant to this report. It was observed outside of the offset area, but within the Koala Crossing property (refer to **Figure 1**).

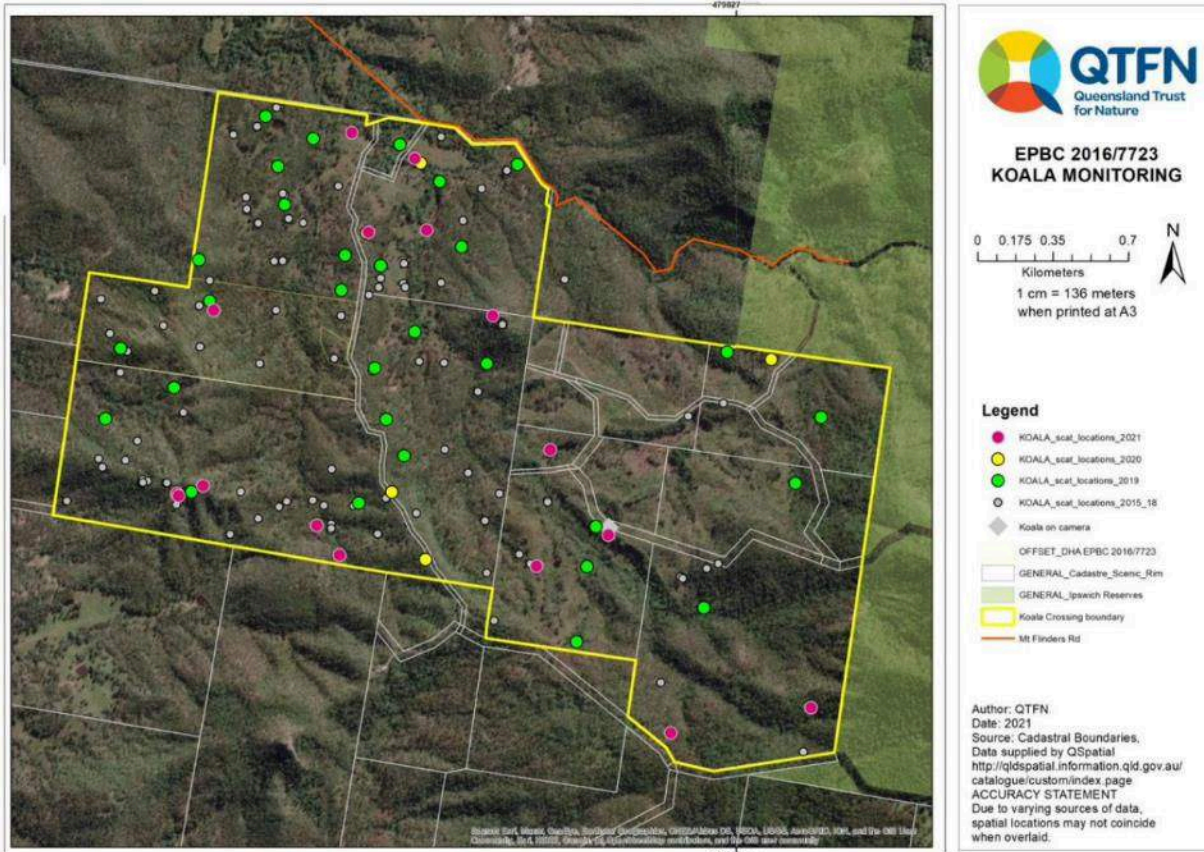


Figure 1: Koala Monitoring (Extract: Year 4 Offset Report – Map 3)

2.2.2 Koala Food Trees

Baseline Koala food tree survey was determined using the following metrics:

- **Metric 1: Recruitment of young Koala trees**
 - o 86% of sites have evidence of recruitment occurring.
- **Metric 2: Search sites sustaining mid-sized trees**
 - o On average 61±0.03% of trees at sites where Koala scat was found are in the 51-100cm circumference category.
- **Metric 3: Reduction in weed coverage across the site**
 - o Weed coverage does not exceed baseline levels by more than 10%

Year 4 Summary

Year 4 management activities focussed on annual weed monitoring and corrective actions (particularly targeting *Lantana camara*), ensuring there is no increase in weeds above the baseline. There are three (3) survey sites within the EPBC 2016/7723 offset area. Since 2018, *L. camara* has been observed at two of the three survey sites within the offset area and coverage has remained below 30%. Across the survey sites, one remains absent of lantana, one has shown a decline in abundance (treated

in 2020) and the third demonstrated a slight increase (subsequently treated during reporting period). Of all survey sites this highest coverage was 27%. Lantana is managed at a property wide scale, with a targeted and strategic approach to high-risk areas. Comparatively across Koala Crossing, the offset site demonstrates very low risk of limited dispersal pathways to Koalas with low coverage of *L. camara*.

Lantana camara has reduced to 67% occupancy, meaning it is present at 18 of 27 transects monitored. This has decreased from 74% in 2020. Abundance of *L. camara* on average across transects has slightly increased, and remains around 25%, increased growth rates promoted by significant rainfall in 2021. Areas of re-emergence have either been treated post monitoring (after March 2021) or will be treated within the next financial year. Over 100 ha of lantana has been treated in 2021. (refer to **Figure 2**). *Lantana montividiensis* is now present in 100% of transects monitored at an average coverage of 60%. The Koala Crossing Weed Strategy 2020-2025 will target the re-emerging *L. camara* and emerging *L. montividiensis*.

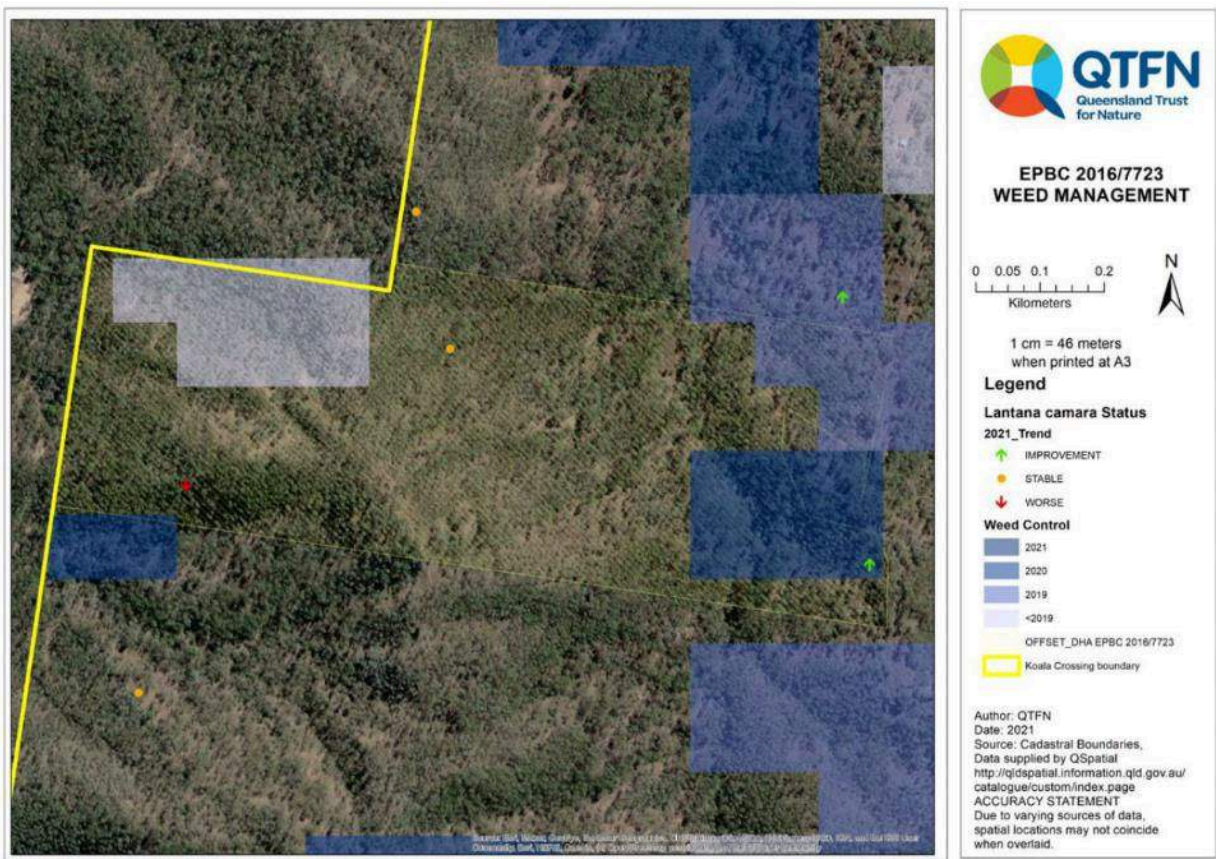


Figure 2: Weed management within offset area (Extract: Year 4 Offset Report- Map 4)

2.2.3 Non-native Predators

Baseline survey of non-native predators was completed using the following metrics:

- **Metric 1: Relative Abundance Indices**

- o RAI and confidence intervals developed for predators to show trends in data: Species

Species	Strong increase	Conservative increase	Conservative decrease	Strong decrease
Dingo	2.6	1.6	1.4	0.4
Fox	3.3	2.4	2.2	1.3
Cat	-	0.1	-	-

- **Metric 2: Number of camera stations with target species**

- o Occupancy data metrics developed. Baseline occupancy set at 40% of cameras with predators recorded.

Year 4 Summary

Monitoring was conducted using remote sensing wildlife cameras and offset area wide traverses for opportunistic scat collections from summer 2020 to winter 2021. For the 2018 baseline survey, this survey effort included 13 camera stations capturing a broader view of the landscape of Koala Crossing as a whole, with four cameras positioned within the EPBC 2016/7723 offset area.

Methodologies remain unchanged, and in contrast to previous reporting years, relative abundance indices (RAI) are now calculated using a standardised set of trapping days (40), with an independence threshold of 10 minutes (i.e. each observation of an animal ten minutes after the first observation is considered a new observation) analysed using the software 'Camelot'.

During this reporting period, dogs (*Canis lupus*) were recorded within the offset area. No cats (*Felis catus*) or foxes (*Vulpes vulpes*) were observed during this reporting period, however foxes were recorded elsewhere on the property. The RAI data calculated for each species shows that between 2018 baseline and the end of the 2021 monitoring period there is no evidence of a significant increase in foxes and cats, and a significant increase in dogs (refer to **Figure 3**). This increase in wild dog relative abundance correlates with a decline in fox abundance.

Occupancy data is a measure of the proportion of cameras recording predators across the site (i.e., a spatial measure of predator presence). Although there is an increase in occupancy across the property, numbers remain below the significant increase threshold for all predators (refer to **Figure 3**).

Dogs were captured on one camera trap that has potential foraging areas that overlap with EPBC2016/7723 offset area in this monitoring season. Within the offset area, the one wild dog was observed located nearby a dam. An increase in occupancy with stable abundance may suggest that the dogs are utilising more of the landscape, and this may be due to the recent wet weather.

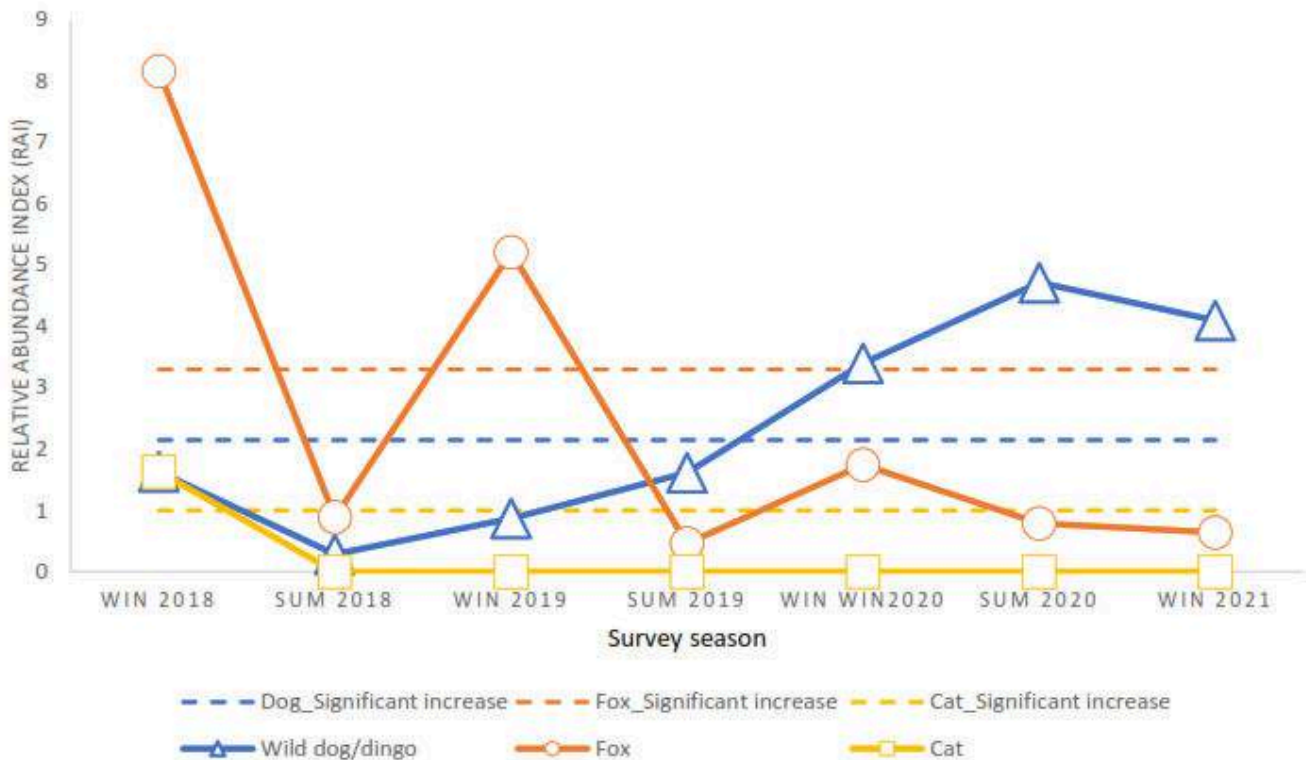
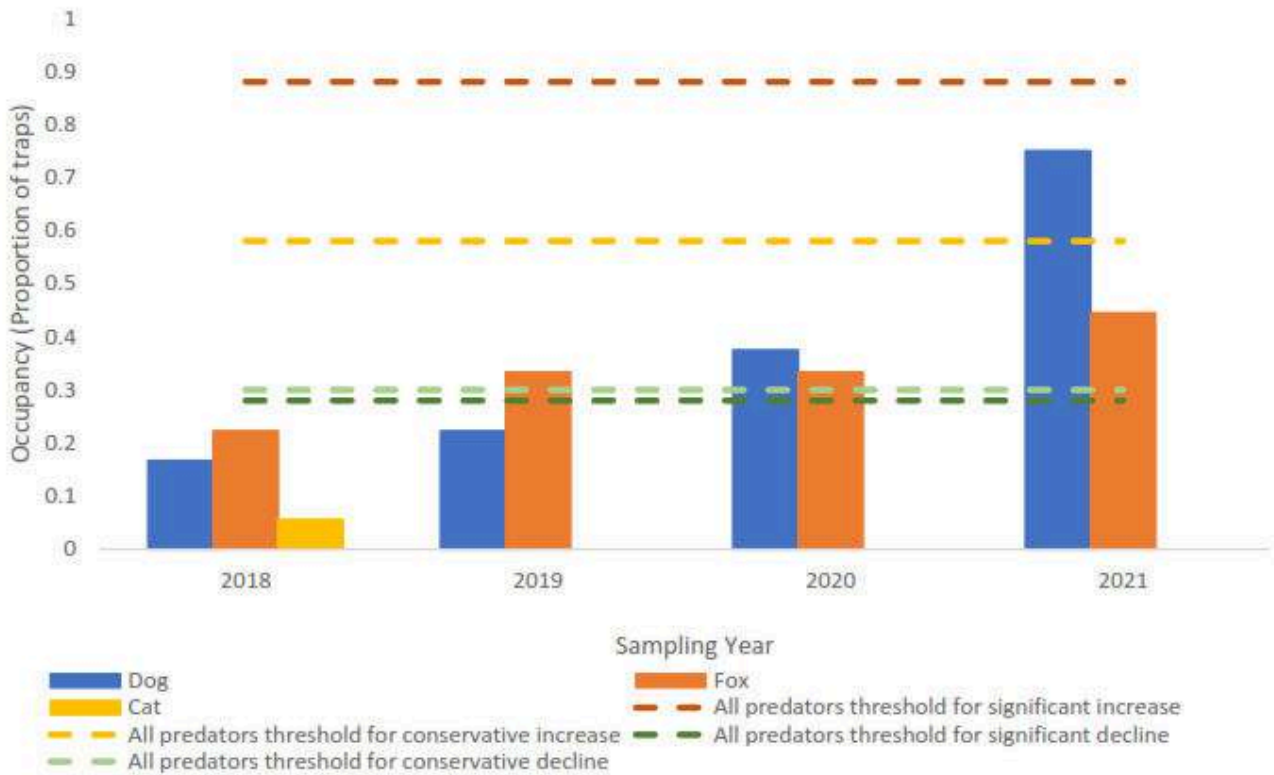


Figure 3: Occupancy (top) and Relative abundance (bottom) of Wild Dogs/dingo, foxes and cats (Extract: Year 4 Offset Report- Figure 3)

Predator scats continue to be found across the Koala Crossing site and within the EPBC 2016/7723 offset area. Although both foxes and dogs remain on-site, predatory scats collected within this sampling period suggest that neither predator is consuming Koala, and the diets of most individuals is composed of macropods and vegetation (refer **Table 4**). As in previous years, no listed threatened species has appeared in the collected predator scats.

3. EPBC Conditions and Compliance

Table 2 documents the compliance with EPBC Act conditions for the Project for the Year 4 reporting period, being 4 February 2021 to the 5 February 2022. The compliance assessment relates to the approval conditions in force at the time of the four-year anniversary.

Table 2: Compliance Audit of EPBC 2016/7723 Conditions for Torhaven

Condition Number / Reference	Condition	Is the Project compliant with this condition?	Evidence/ Comments
Part A – Conditions Specific to the action			
1	The approval holder must not clear more than 15 hectares of koala habitat within the project site.	Compliant	<p>During Year 4, the clearing of critical habitat occurred. Total clearing of critical habitat to 5 February 2022 is 14.88 ha (less than 15 ha).</p> <p>Refer to Plan 2 which shows the clearing extent of Koala habitat for the Project to 5 February 2022. Impacts to Koala habitat were limited to the Project site.</p>
2	<p>To compensate for the loss of 29.7 hectares of koala habitat within, and adjacent to the project site, the approval holder must:</p> <p>a. Prior to commencement of the action, legally secure for the life of the approval a minimum of 53.6 hectares of koala habitat at the offset site.</p>	Compliant	In response to Condition 2a, third party offset provider QTFN legally secured the offset via a voluntary declaration under the <i>Vegetation Management Act 1999</i> (PMAV 2017/006736) on 12 January 2018, which was reported in the Year 1 ACR.
	<p>b. Within 10 business days of legally securing the offset site, provide the Department with evidence of when and how it was legally secured, what mechanism was used,</p>	Compliant	In response to Condition 2b, the Department was provided with the offset attributes, shapefiles and maps and a copy the acceptance of the voluntary declaration on the 16 January 2018, which was reported in the Year 1 ACR.

Condition	Number / Condition	Reference	Is the Project compliant with this condition?	Evidence/ Comments
				and appropriate coordinates to enable the Department to map the offset site.
	c.	Within one year of commencement of the action complete a baseline koala density survey over the entire offset site.	Compliant	In response to Condition 2c, the baseline Koala density survey was completed over the offset area in October 2018 and reported in the 'Koala Crossing Baseline Koala Assessment for Offset EPBC 2016/7723' prepared by QTFN (Oct 2018), which was appended to the Year 1 ACR.
	d.	Within nine years, commencing from the date condition 2c is completed, demonstrate achievement of a statistically significant increase, maintained for two consecutive years, in koala density over the entire offset site compared to the results of the baseline koala density survey required by condition 2c.	Compliant (ongoing)	<p>Baseline surveys were completed by QTFN in August 2018 (i.e., date of commencement of condition 2c). Year 4 surveys were completed between February 2021 and February 2022.</p> <p>Year 4 surveys (Koala scat (metric 1 and 2) and camera trap observations (metric 3)) suggest a stable population of Koalas at the Koala Crossing property. Ongoing monitoring for this condition is required before a statistically significant increase or decrease can be demonstrated.</p>
	e.	Within one year of commencement of the action complete a baseline koala food trees survey over the entire offset site.	Compliant	In response to Condition 2e, the baseline Koala tree survey was completed over the offset area in August 2018 and reported in the 'Koala Crossing Baseline Koala Assessment for Offset EPBC 2016/7723' prepared by QTFN (Oct 2018), which was appended to the Year 1 ACR. These surveys incorporated results from as far back as 2015 and were reported in the Year 1 Offset Report.
	f.	Within seven years, commencing from the date condition 2e is completed, demonstrate achievement of ongoing recruitment of koala food trees over the entire offset site, compared to the results of the baseline koala food trees survey required by condition 2e.	Compliant (ongoing)	<p>Baseline surveys were completed by QTFN in August 2018 (i.e., date of commencement of condition 2e). Year 4 surveys were completed between February 2021 and February 2022.</p> <p>Year 4 activities focused on annual weed monitoring and corrective actions. QTFN reported at a property wide scale, abundance of weeds continues in a downwards trajectory. Ongoing monitoring for this condition is required before a statistically significant increase or decrease can be demonstrated.</p>

Condition Number / Condition Reference	Is the Project compliant with this condition?	Evidence/ Comments
g. Within one year of commencement of the action complete a baseline survey of non-native koala predators over the entire offset site.	Compliant	In response to Condition 2g, the baseline survey for non-native predators was completed over the offset area in August 2018 and reported in the 'Koala Crossing Baseline Koala Assessment for Offset EPBC 2016/7723' prepared by QTFN (Oct 2018), which was appended to the Year 1 ACR.
h. Demonstrate achievement of a reduction, maintained for 10 consecutive years, in the number of non-native koala predators over the entire offset site, compared to the results of the baseline survey of non-native koala predators established by condition 2g.	Compliant (ongoing)	<p>Baseline surveys were completed by QTFN in August 2018 (<i>i.e.</i>, date of commencement of condition 2g). Year 4 surveys were completed between February 2021 and February 2022.</p> <p>The RAI data calculated for each species shows that between the 2018 baseline and the end of 2021 monitoring period there is no evidence for significant increase in foxes or cats. A significant increase in dogs was recorded. An increase in dog occupancy but stable abundance is attributed to the dogs utilising more of the landscape due to recent wet weather (refer Section 2.2.3). Actions have been taken to control the numbers of wild dogs.</p> <p>Ongoing monitoring for this condition is required before a statistically significant increase or decrease can be demonstrated.</p>
i. For the life of the approval, ensure there is no net loss in the extent of koala habitat over the entire offset site that is legally secured under condition 2a	Compliant	<p>In response to Condition 2h, the offset site has been legally secured via a voluntary declaration which legally protects the extent of koala habitat within the offset.</p> <p>Firebreak inspections were undertaken monthly during the 2021 monitoring period. There has been no clearing undertaken within the offset area, nor a change to site connectivity (refer Year 4 Offset Report). A net loss in the extent of koala habitat over the entire offset site has not occurred. Nearmap imagery shows the extent of Koala habitat within the offset area remains the same as that for Year 1 (refer Appendix C).</p>

Part B – Administrative Conditions

3	Within 20 business days after the commencement of the action, the approval holder must advise the Department of the actual date of commencement of the action.	Not applicable	The commencement of the action occurred prior to this reporting period.
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Condition	Number / Condition	Reference	Is the Project compliant with this condition?	Evidence/ Comments
4	The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement any management plans or monitoring programs required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media	Compliant	All records substantiating all activities associated with or relevant to the conditions of approval are maintained by the Proponent. If required by the Minister, these records can be made available to allow a third-party audit of the Project.	
5	Within 60 business days of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans or monitoring programs as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. The Minister may provide written consent to the approval holder to cease reporting under this condition if satisfied additional reports are not warranted.	Compliant	The Year 3 ACR was published on the approval holder's website (dha.gov.au) on 4 May 2021, which falls within the 60-day period of the 12 month anniversary of the commencement of the action. On 4 May 2021 the Department was notified of the publication.	
6	The approval holder must report any potential or actual contravention of the conditions of this	Compliant	A potential or actual contravention of the conditions of this approval did not occur during the reporting period, therefore there were nil notifications to the Department.	

Condition	Number / Condition	Reference	Is the Project compliant with this condition?	Evidence/ Comments
7		approval to the Department in writing within 5 business days of the approval holder becoming aware of the potential or actual contravention.	Not Applicable	A request for an independent audit of the Project was not made by the Minister during the reporting period.
8		Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor and criteria must be approved by the Minister prior to the commencement of the audit. The audit report must address the criteria to the satisfaction of the Minister	Not Applicable	The action commenced on 5 February 2018, therefore this condition is not applicable.
		If, at any time after 5 years from the date of this approval, the approval holder has not commenced the action, then the approval holder must not commence the action without the written agreement of the Minister.		

4. Correcting Non-Compliances

There were nil non compliances during the reporting period.

5. Appendices

Appendix A

Variation of Conditions Attached to Approval

Appendix B

Offset Area Management Report - Year 4

Appendix C

Nearmap Aerial of Offset Site (2018/2019– 2021/2022)

Appendix A

Variation of Conditions Attached to Approval



VARIATION OF CONDITIONS ATTACHED TO APPROVAL

Rawlings Road Development, Deebing Heights, Ipswich, Queensland (EPBC 2016/7723)

This decision to vary conditions of approval is made under section 143 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Approved action

Approval holder **Name:** Defence Housing Australia

ABN/ACN: ABN 72 968 504 934

Approved action Construct a residential development consisting of 295 new lots with 332 dwellings, with a development footprint of 25.37 ha, located in Ripley Valley, Ipswich Queensland. [See EPBC Act referral 2016/7723].

Variation

Variation of conditions attached to approval The variation is:

Delete definitions of **Clear/clearing** and **Department** attached to the approval and substitute with the definitions specified in the table below

Delete Attachment A attached to the approval substitute with the Attachment A specified in the table below.

Date of effect This variation has effect on the date this instrument is signed

Person authorised to make decision

Name and position Natasha Amerasinghe
A/g Assistant Secretary
Environment Assessments (Vic, Tas) and Post Approvals Branch

Signature

Date of decision 19 January 2022

Date of decision	Annexure A – Conditions of approval
	Part A – Conditions specific to the action
	Project site
Original dated 09/01/2018	1. The approval holder must not clear more than 15 hectares of koala habitat within the project site .
	Compensation for residual significant impact
Original dated 09/01/2018	2. To compensate for the loss of 29.7 hectares of koala habitat within, and adjacent to the project site , the approval holder must: <ul style="list-style-type: none"> a. Prior to commencement of the action, legally secure for the life of the approval a minimum of 53.6 hectares of koala habitat at the offset site. b. Within 10 business days of legally securing the offset site, provide the Department with evidence of when and how it was legally secured, what mechanism was used, and appropriate coordinates to enable the Department to map the offset site. c. Within one year of commencement of the action complete a baseline koala density survey over the entire offset site. d. Within nine years, commencing from the date condition 2.c is completed, demonstrate achievement of a statistically significant increase, maintained for two consecutive years, in koala density over the entire offset site compared to the results of the baseline koala density survey required by condition 2.c. e. Within one year of commencement of the action complete a baseline koala food trees survey over the entire offset site. f. Within seven years, commencing from the date condition 2.e is completed, demonstrate achievement of ongoing recruitment of koala food trees over the entire offset site, compared to the results of the baseline koala food trees survey required by condition 2.e. g. Within one year of commencement of the action complete a baseline survey of non-native koala predators over the entire offset site. h. Demonstrate achievement of a reduction, maintained for 10 consecutive years, in the number of non-native koala predators over the entire offset site, compared to the results of the baseline survey of non-native koala predators established by condition 2.g. i. For the life of the approval, ensure there is no net loss in the extent of koala habitat over the entire offset site that is legally secured under condition 2.a.
	Part B – Standard administrative conditions
Original dated 09/01/2018	3. Within 20 business days after the commencement of the action , the approval holder must advise the Department of the actual date of commencement of the action .
Original dated 09/01/2018	4. The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement any management plans or

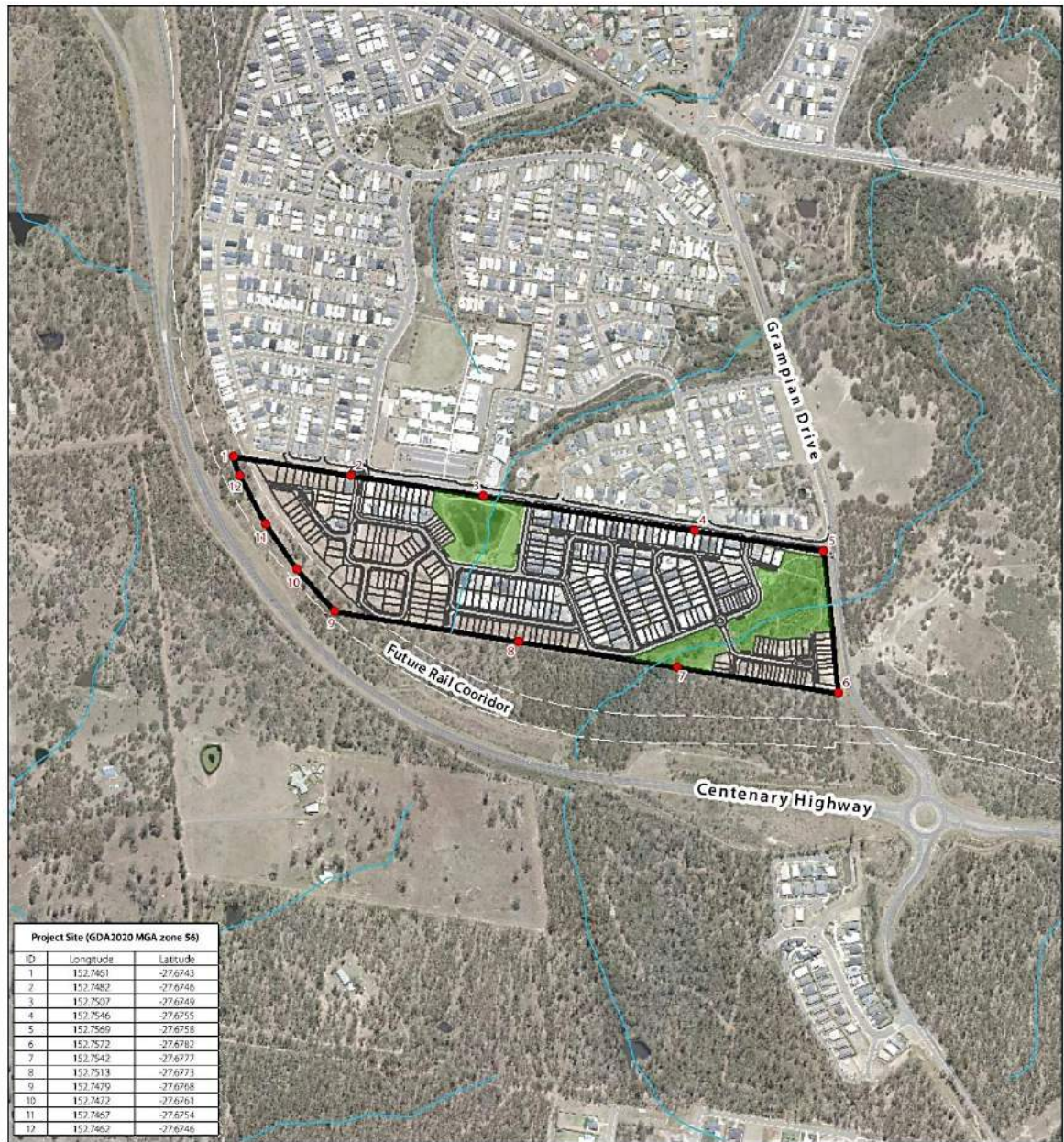
Date of decision	Annexure A – Conditions of approval
	Part A – Conditions specific to the action
	Project site
	monitoring programs required by this approval, and make them available upon request to the Department . Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act , or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.
Original dated 09/01/2018	5. Within 60 business days of every 12 month anniversary of the commencement of the action , the approval holder must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans or monitoring programs as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. The Minister may provide written consent to the approval holder to cease reporting under this condition if satisfied additional reports are not warranted.
Original dated 09/01/2018	6. The approval holder must report any potential or actual contravention of the conditions of this approval to the Department in writing within 5 business days of the approval holder becoming aware of the potential or actual contravention.
Original dated 09/01/2018	7. Upon the direction of the Minister , the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister . The independent auditor and criteria must be approved by the Minister prior to the commencement of the audit. The audit report must address the criteria to the satisfaction of the Minister .
Original dated 09/01/2018	8. If, at any time after 5 years from the date of this approval, the approval holder has not commenced the action , then the approval holder must not commence the action without the written agreement of the Minister .

Date of decision	Definitions attached to approval
	In these conditions, except where contrary intention is expressed, the following definitions are used:
Original dated 09/01/2018	Approval holder means the name of the person to whom the approval is granted, or any person acting on their behalf, or to whom the approval is transferred under section 145B of the EPBC Act .
Original dated 09/01/2018	Baseline koala density survey means a field survey measuring the number of koalas per unit area, undertaken by a suitably qualified person using a scientifically robust and repeatable methodology and completed prior to the commencement of the action .

Date of decision	Definitions attached to approval
Original dated 09/01/2018	Baseline koala food trees survey means a field survey measuring the number of koala food trees , undertaken by a suitably qualified person using a scientifically robust and repeatable methodology and completed prior to the commencement of the action .
Original dated 09/01/2018	Baseline survey of non-native koala predators means a field survey measuring the number of non-native koala predators , undertaken by a suitably qualified person using a scientifically robust and repeatable methodology and completed prior to the commencement of the action .
Original dated 09/01/2018	Business days means a day that is not a Saturday, a Sunday or a public holiday in the location of the action.
As varied on the date this instrument was signed	Clear/clearing means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation, but not including weeds. For further guidance, see the <i>Australian Weeds Strategy 2017 to 2027</i> , Commonwealth of Australia, 2017 (available via https://www.awe.gov.au/sites/default/files/sitecollectiondocuments/pests-diseases-weeds/consultation/aws-final.pdf).
Original dated 09/01/2018	Commencement of the action means the point at which any clearing for the purposes of the action occurs.
As varied on the date this instrument was signed	Department means the Australian Government agency responsible for administering the EPBC Act .
Original dated 09/01/2018	EPBC Act means the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth).
Original dated 09/01/2018	Koala means <i>Phascolarctos cinereus</i> .
Original dated 09/01/2018	Koala density means the number of koalas per unit area.
Original dated 09/01/2018	Koala food tree means any tree known to be part of the normal diet for koalas .
Original dated 09/01/2018	Koala habitat means any vegetation that scores five or more using the Koala habitat assessment tool from the EPBC Act referral guidelines for the vulnerable koala.
Original dated 09/01/2018	Legally secure/secured/securing means long-term protection under a voluntary declaration as provided for in the <i>Vegetation Management Act 1999</i> (Qld) or establishing a Nature Refuge under the <i>Nature Conservation Act 1992</i> (Qld).
Original dated 09/01/2018	Life of the approval means the period for which the approval has effect.
Original dated 09/01/2018	Minister means the Minister administering the EPBC Act including any delegate of the Minister.

Date of decision	Definitions attached to approval
Original dated 09/01/2018	Non-native koala predators means any animal not native to Australia that is known to predate on koalas of any age.
Original dated 09/01/2018	Offset site means the area designated as <i>EPBC 2016_7723 DHA offset</i> on the map at <u>Attachment B</u> .
Original dated 09/01/2018	Project site means the areas defined as <i>Project Site DCDB</i> on the map, and by the coordinates, at <u>Attachment A</u> .
Original dated 09/01/2018	Records means all documentation or other material in whatever form, including without limitation any correspondence, reports, assessments, methodologies, operations manuals, specifications, training materials and instructions or data.
Original dated 09/01/2018	Recruitment means new individuals added to an existing population.
Original dated 09/01/2018	Suitably qualified person means a person who has professional qualifications, training, skills and/or experience related to 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.
Original dated 09/01/2018	Statistically significant means a result that's not attributed to chance, as determined using methodologies and statistical analysis appropriate to the data being analysed.

Date of decision	Attachment A
As varied on the date this instrument was signed	Project site



- Legend**
- Project site DCD8
 - Project development layout
 - Project openspace
 - Future rail corridor boundary
 - VMA Watercourses/drainage features

Attachment A - Map 1

Fileref. 8122 E Attachment A B
 Date 20/12/2021
 Project Toihaven - Rawlings Road, Deebing Heights

0 50 100 200 300 m
 Scale (A4): 1:10,000 [GDA 2020 MGA Z56]

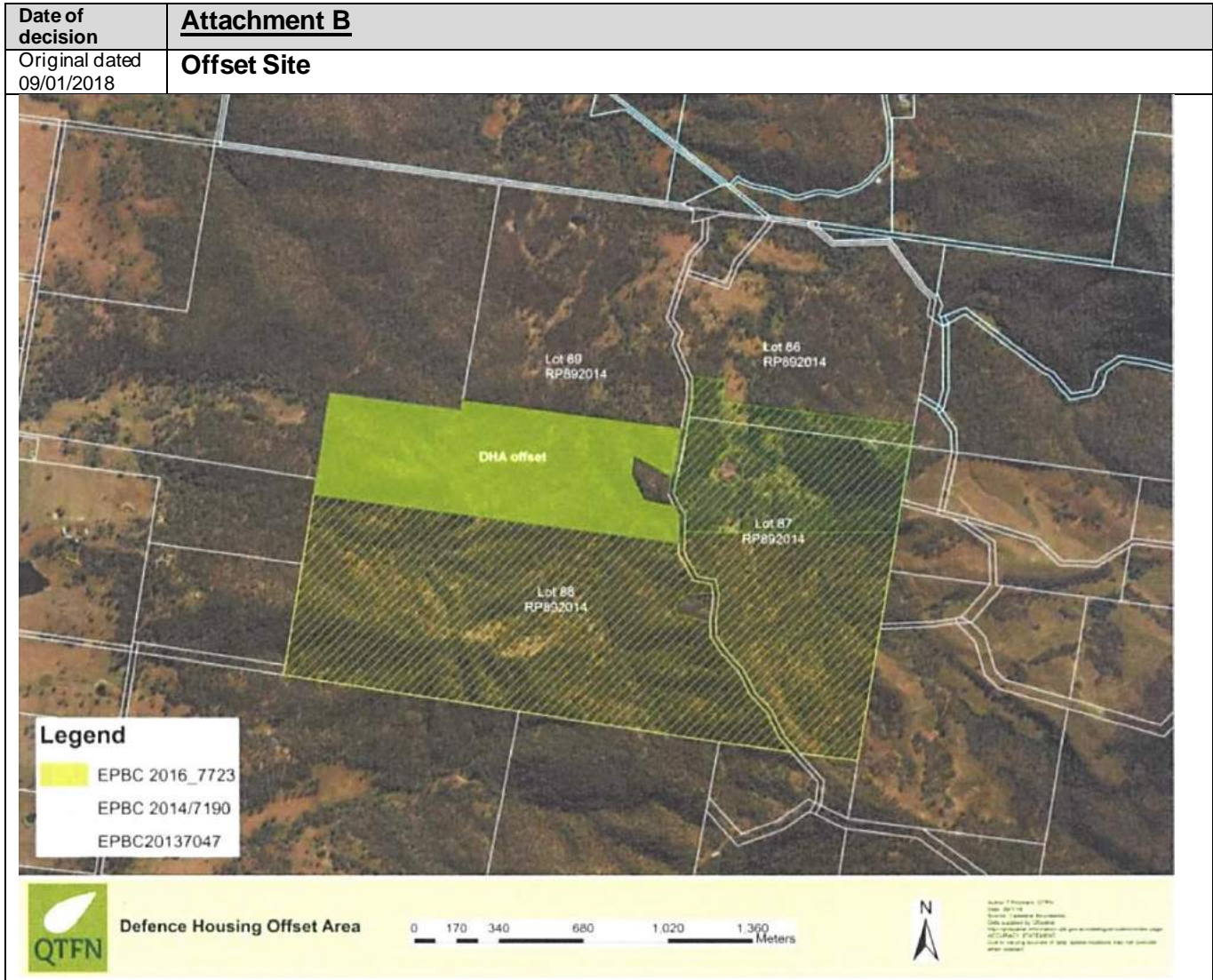


Defence Housing
 Australia -
 Property
 Provisioning
 Group



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Layer Source: © State of Queensland (Department of Resources) 2021, Metromap 2021.



Appendix B

Offset Area Management Report - Year 4



Koala Crossing Offset Area Management Report

EPBC 2016/7723

V3 | 10 March 2022

Document Control

Current document

Title	Koala Crossing Offset Area Management Report Year4 EPBC2016/7723
Date	10/03/2022
Prepared by	Georgina Braun – QTFN

Document Issue

<i>Issue</i>	<i>Date</i>	<i>Prepared by</i>	<i>Checked by</i>
Draft	08/02/2022	Georgina Braun	Jaime Kruusmaa
Final	10/03/2022	Georgina Braun	Lisa van den Berg

Disclaimer

This report has been prepared for Defence Housing Australia by the Queensland Trust for Nature. QTFN cannot accept any responsibility for any use of or reliance upon the contents of this report by any third party.

Reports and/or Plans by Others

Reports and/or plans by others may be included within this Offset Area Management Report to support the document.

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CHAPTER 1: INTRODUCTION

The purpose of this document is to report on the management actions and outcomes required for the provision of koala (*Phascolarctos cinereus*) habitat offset, by Approval EPBC 2016/7723 issued pursuant to sections 130 and 133 of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC 1999). The focus of the plan is the protection and enhancement of the koala habitat associated with the secured offset for EPBC ref. 2016/7723. This document will report in accordance with stipulations and requirements laid out in the Offset Area Management Plan, for the reporting period ending 5th February 2022.

The structure of the document reflects the requirements of the Department of Agriculture, Water and Environment (nee Department of Environment and Energy), and details the key threatening processes which could impact on the existing koala population. The chapters that comprise the document report on the overall health of the koala population, vegetation composition, and actions to minimise threats to Koalas. The management regime put in place by the Queensland Trust for Nature will enhance existing koala habitat through the exclusion of land practices detrimental to the site and will track improvements and progress in the annual offset report over the active management period.

This management report is the fourth submitted to date since the approval date for the offset (EPBC 2016/7723) on the 9th of January 2018 and commencement of the action on 5th February 2018. Annual reporting periods commence and end on the anniversary date of the commencement of the action. The past and future reporting requirements are listed below.

Milestone	Anniversary Date	Status
Approval of EPBC 2016/7723	-	Approved 9 th January 2018
Legal Security	-	12 th January 2018
Supp. Koala Baseline	October 2018	Submitted October 2018
Year 1	February 2019	Submitted April 2019
Year 2	February 2020	Submitted May 2020
Year 3	February 2021	Submitted April 2021
Year 4	February 2022	Submitted March 2022
Year 5		
Year 6		
Year 7		
Year 8		
Year 9		
Year 10		

Summary of compliance

This document stands as a compliance report for the agreed upon approval conditions (Table 1) outlined in the EPBC 2016/7723 Offset Area Management Plan and final approval conditions.

It is acknowledged that any non-compliance with the conditions must be reported by no later than 5 business days after becoming aware.

Table 1. Compliance summary of approval conditions, relevant for this reporting period.

Approval Condition	Compliant
2a. Prior to commencement of the action, legally secure for the life of the approval a minimum of 53.6ha of koala habitat at the offset site	Yes. Legally secured 12 th January 2018.
2b. Within 10 business days of legally securing the offset, provide the Department with evidence of when and how it was legally secured, what mechanism was used, and appropriate coordinates to enable the Department to map the offset site.	Yes
2c. Within one year of commencement of the action, complete a baseline koala density survey over the entire offset site	Yes – completed
<p>Metric 1 – SAT results. Koala SAT results show an average activity rating of 13.75% ± 6.4% adjusted for confidence intervals</p> <p>Metric 2 – Average number of trees searched before scat found. Scats were found within the EPBC2016/7723 site after searching 7±1.2 trees</p> <p>Metric 3 – Photographic evidence of koala activity. Photo monitoring stations are positioned throughout the Koala Crossing property.</p>	
2d. Within nine years, commencing from the date condition 2c is completed, demonstrate achievement of a statistically significant increase, maintained for two consecutive years, in koala density over the entire offset site compared to the results of the baseline koala density survey required by condition 2c.	Yes – ongoing
2e. Within one year of commencement of the action complete a baseline koala food trees survey over the entire offset site	Yes – completed
<p>Metric 1 – Percentage of search sites with recruitment of young food trees. 86% of sites have evidence of recruitment occurring.</p> <p>Metric 2 – Percentage of search sites sustaining midsize food trees. On average 61±0.03% of trees at sites where koala scat was found are in the 51-100cm circumference category.</p> <p>Metric 3 – Reduction in weed coverage across the site. Weed coverage does not exceed baseline levels by more than 10%</p>	
2f. Within seven years, commencing from the date condition 2e is completed, demonstrate achievement of ongoing recruitment of koala food trees over the entire offset site, compared to the results of the baseline koala food trees survey required by condition 2e.	Yes – ongoing
2g. Within one year of commencement of the action complete a baseline survey of non-native koala predators over the entire offset site	Yes – completed

<p>Metric 1 – Relative Abundance Indices (RAI). RAI and confidence intervals developed for predators to show trends in data:</p> <p>Metric 2 – Occupancy data. Occupancy data metrics developed. Baseline occupancy set at 40% of cameras with predators recorded.</p>	<table border="1"> <thead> <tr> <th>Species</th> <th>Strong increase</th> <th>Low increase</th> <th>Low decrease</th> <th>Strong decrease</th> </tr> </thead> <tbody> <tr> <td>Dingo</td> <td>2.6</td> <td>1.6</td> <td>1.4</td> <td>0.4</td> </tr> <tr> <td>Fox</td> <td>3.3</td> <td>2.4</td> <td>2.2</td> <td>1.3</td> </tr> <tr> <td>Cat</td> <td></td> <td>0.1</td> <td></td> <td></td> </tr> </tbody> </table>	Species	Strong increase	Low increase	Low decrease	Strong decrease	Dingo	2.6	1.6	1.4	0.4	Fox	3.3	2.4	2.2	1.3	Cat		0.1		
	Species	Strong increase	Low increase	Low decrease	Strong decrease																
Dingo	2.6	1.6	1.4	0.4																	
Fox	3.3	2.4	2.2	1.3																	
Cat		0.1																			
<p>2h. Demonstrate achievement of a reduction, maintained for 10 consecutive years, in the number of non-native koala predators over the entire offset site, compared to the results of the baseline survey of non-native koala predators established by condition 2g.</p>	<p>Yes – ongoing. Corrective action taken to address wild dog increase.</p>																				

Table 2. Compliance summary and checklist for all conditions relevant to this reporting interval under the OAMP.

Key Actions and Monitoring Requirements	Reporting Requirements	Compliance
Koala Occurrence		
<ul style="list-style-type: none"> Baseline koala density survey completed June 2015. Repeat at years 5 and 10. 	Incorporate the koala density survey results within the relevant Annual Offset Area Assessment Report (only for years 0, 5 and 10).	Y
<ul style="list-style-type: none"> Record opportunistic koala sightings and scat findings (location and date). 	Incorporate opportunistic koala sightings into the Annual Offset Area Assessment Report.	Y
Vegetation Composition, Habitat Connectivity and Dispersal Barriers		
<ul style="list-style-type: none"> Conduct baseline assessment of koala food tree species richness. Implement revegetation program in cleared areas representative of pre-clearing regional ecosystems, with photo monitoring points. Measure average canopy height and plant survival rates. 	Declared weed cover does not exceed baseline levels by more than 10%	Y
<ul style="list-style-type: none"> Conduct baseline assessment of weed infestation levels. Develop and implement a property wide Weed Management Plan, with a focus on declared weeds impacting koala dispersal. Undertake annual weed surveys during spring or summer. 	Monitor for any (illegal) clearing in the area (highly unlikely) or any natural events that might impact on habitat connectivity.	Y
<ul style="list-style-type: none"> Retain all vegetation in remnant and mature regrowth areas except where necessary for the removal of weeds, fencing or fire break trails. Monitor for illegal clearing in the area of any natural events that may impact habitat connectivity. 	Monitoring results to be recorded in annual Offset Area Assessment Report.	Y
<ul style="list-style-type: none"> Offset it legally secured as an area of High Conservation Value under section 19F of the <i>Vegetation Management Act 1999</i>. 		Y
Predators		
<ul style="list-style-type: none"> Conduct a baseline survey to establish feral animal abundance and location on the property. Repeat annually. 		Y
<ul style="list-style-type: none"> Implement a property wide feral animal control program. The control program and techniques (trapping, baiting, shooting) will be informed based on the results of the abundance survey. 	Annual report to include all feral animal survey data.	Y
<ul style="list-style-type: none"> Monitoring of the presence of feral pest animals through the use of remote motion-activated cameras; survey the site every six months to record presence/absence of signs of feral animals (sightings, killings and/or scats and tracks). 	Annual report to include all records of koala injury or death related to feral animal attacks.	Y
<ul style="list-style-type: none"> Establish and maintain a koala-predator interaction register 		Y
Vehicle Strike		
<ul style="list-style-type: none"> Install koala awareness signage on Mount Flinders Road within 6 months of securing offset area 	Report any koala injuries/deaths to Local Government authority and relevant State Government department	Y
<ul style="list-style-type: none"> Implement a slow speed requirement (40km/h) in offset area and install signs 	Incidents to be recorded in annual Offset Area Assessment Report.	Y
<ul style="list-style-type: none"> Record any koala injury/mortality on roads within offset area of Flinders Road. Report injuries/deaths to LGA. 		Y
Fire		

<ul style="list-style-type: none"> Develop an Offset Area Bushfire Management Plan within 6 months of the offset being legally secured. 	Report on prescribed burn results (area covered, any potential negative impact, intensity of burn, learnings)	Y
<ul style="list-style-type: none"> Install firebreaks and fire trails. Inspect and undertake maintenance in compliance with OABMP. 	Report any high intensity (wildfire) to the relevant authorities and report on any impact on the offset area.	Y
<ul style="list-style-type: none"> Prescribed burning will be undertaken in consultation with, and under the guidance of the Queensland Rural Fire Brigade. 	Monitoring results and maintenance log will be detailed within the annual Offset Area Assessment Report.	Y

Disease and pathogens

<ul style="list-style-type: none"> Document baseline condition survey to include assessment for signs of <i>Phytophthora cinnamomi</i> and Myrtle Rust. 	Baseline data concerning observations around koala and koala habitat diseases and pathogens is to be documented within initial annual Offset Area Assessment Report.	Y
<ul style="list-style-type: none"> To reduce the risk of introducing Chlamydia and Koala retrovirus into the resident population, uncontrolled translocation of koala is not permitted within the offset area. 	Confirmation of koala translocation activity within the offset area (if approved) is to be included within annual Offset Area Assessment Reports.	Y
<ul style="list-style-type: none"> Enforce biosecurity procedures for all persons and vehicles that may carry vegetation pathogens known to affect koala food and shelter trees. 	Incidence of koalas exhibiting symptoms of disease to be reported within annual Offset Area Assessment Report.	Y
<ul style="list-style-type: none"> Monitor neighbouring habitat to identify disease once per annum. 		Y

Hydrological Change

If any actions are proposed that may significantly impact the current hydrological regime and therefore potentially impact koala habitat within the offset area, then actions are required.	Monitoring of the impact to the site's vegetation communities will be a component of an annual site assessment.	Y
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CHAPTER 2: SETTING AND LOCALITY

By way of Deed, Defence Housing Australia secured delivery of an Offset Area Management Plan and registration of a Voluntary Declaration (under the *Vegetation Management Act 1999* (QLD) of a 53.616ha offset imposed by EPBC Approval 2016/7723.

The offset area pertaining to EPBC 2016/7723 is managed as part of a larger conservation property located on Mount Flinders Road, Peak Crossing, Queensland, comprised of eight lots; 86, 87, 88, 89 on RP892014, Lot 119 on CH311527, Lot 107 on CH311135, Lot 137 on CH311786 and Lot 138 on CC127 totalling approximately 654 ha (Map 1). The whole site, henceforth referred to as ‘Koala Crossing’, was purchased by the Queensland Trust for Nature (QTFN) in 2014 to protect regrowth vegetation from future development, with the aim of utilising the property for offsets.

The tenure of the site is freehold, wholly owned by QTFN. It is included within the Scenic Rim Regional Council Local Government Area. On a regional scale, the site is part of the Flinders Karawatha Corridor, the largest remaining contiguous stretch of open eucalypt forest in South-East Queensland (SEQ) (EHP 2014). The corridor stretches for 60km from the Karawatha forest in Brisbane, through Flinders Peak to Wyaralong Dam near Boonah, and encompasses 56,350 ha of land. It is an important wildlife corridor, providing habitat for a number of vulnerable species including the tusked frog (*Adelotus brevis*), glossy black-cockatoo (*Calyptorhynchus lathami*), powerful owl (*Ninox strenua*), black-breasted button-quail (*Turnix melanogaster*), spotted-tailed quoll (*Dasyurus maculatus maculatus*), brush-tailed rock-wallaby (*Petrogale penicillata*) and koala (*Phascolarctos cinereus*).

Climate data for the area gives a mean maximum and minimum temperature of 27.0°C and 13.0°C respectively for 2021, to date. The average annual rainfall for 1991-2022 is 842mm. The year 2021 recorded above average rainfall of 1084mm, to date (BoM 2022), with the wettest month in November and the driest month in August. Data is collected from the Amberley weather station (040816, 04004). The site contains four Regional Ecosystems (REs):

- 12.8.24 Endangered: *Corymbia citriodora subsp. Variegata* open forest on Cainozoic igneous rocks especially trachyte
- 12.9-10.7 Of concern: *Eucalyptus crebra* +/- *E. tereticornis*, *Corymbia tessellaris*, *Angophora spp*, *E. melanophloia* woodland on sedimentary rocks
- 12.9-10.2 Of least concern: *Corymbia citriodora subsp. Variegata* +/- *Eucalyptus crebra* open forest on sedimentary rocks
- 12.9-10.17 Of least concern: *Eucalyptus acmenoides*, *E. major*, *E. siderophloia* +/- *Corymbia citriodora subsp. Variegata* woodland on sedimentary rocks

The highest point of the site is 210m above sea level on the eastern side, close to the border of lots 86 and 87 RP892014. The Geological Survey of Queensland 1:100,000 Ipswich Geological Map (DME 2008) lists the geology as:

- Qa SEQ: Quaternary; clay, silt, sand, gravel, flood plain alluvium
- Tit SEQ: Tertiary: trachyte (anorthoclase and riebeckite trachyte)
- Jbmk: Jurassic; lithofeldspathic labile and sublabile to quartzose sandstone, siltstone, shale, minor coal, ferruginous oolite marker
- Jbmg: Jurassic; lithic labile and feldspathic labile sandstone

CHAPTER 3: OFFSET AREA REPORT

This chapter outlines the agreed requirements outlined in the Offset Area Management Plan (OAMP) and the final Approved Conditions set by the relevant parties. For each asset, monitoring and results are discussed in line with the reporting requirements, and notes on conservation management actions stated.

Reporting period

This document reports on monitoring and works completed within the reporting period, ending 5th February 2022.

3.1 KOALA OCCURRENCE

Relevant actions	Reporting requirement	Compliant
	BASELINE	
Replicated koala density/occurrence surveys undertaken within the offset area at years 5 and 10 from the date at which the offset it legally secured.	Metric 1 – SAT results Koala SAT results show an average activity rating of 13.75% ± 6.4% adjusted for confidence intervals	
	Metric 2 – Average number of trees searched before scat found Scats were found within the EPBC2016/7723 site after searching 7±1.2 trees	Y – Not an intensive year.
	Metric 3 – Photographic evidence of koala activity Photo monitoring stations are positioned throughout the Koala Crossing property.	

Koalas are under significant threat in SEQ, due to habitat encroachment by urbanisation, predation by feral and domestic animals and traffic accidents caused by increased road networks and motor vehicles. Koala Crossing was purchased by QTFN with the intention of finding sustainable funding models to preserve koala habitat and provide linking territories to the Flinders-Goolman Conservation Estate and the Flinders-Karawatha Corridor. The delivery of third-party project impact offsets has provided a means of funding ongoing restoration and revegetation of large parts of the property.

Surveys from 2015 to 2018 and the baseline survey conducted in 2018 (and reported on in the Year 1 Offset Area Management report) indicated a population of between 10 to 15 koalas using the Koala Crossing site. Koala scat searches detected koala presence at 76% of plots examined in a variety of habitats across the Koala Crossing site. Since 2015, five rehabilitated koalas have been released on the site, and koala scats and camera trap observations suggest a stable population of koalas.

i. Monitoring in this period

This report will document the continued koala observations and monitoring within the offset area, in line with the requirement of the OAMP between February 2021 and February 2022. In this reporting period, ongoing opportunistic observations regarding koalas have been made in the form of scat searches and camera trapping. Thirteen camera trapping stations were deployed across the site (see Section 3.4 for locations – one located within offset area), and scat searches were conducted opportunistically across the offset area.

Methodologies remain unchanged from previous reports. Trees were selected at random throughout the property and searched for Koala scratch marks and scats within 1m of the base. As recommended by the Koala Ecology Group in the original baseline survey, a maximum search effort of 11 trees was conducted in any one site before a site was considered to have no evidence of recent koala activity. Where very fresh scats were found, a brief visual search of the immediate area was conducted to determine if a koala was still present. Relative Activity Indices (RAI) are calculated for koala in the same manner as for feral predators, the methods for which are detailed in Section 3.4.

ii. Results and Management Outcomes

Scat searches

Scat searches from the 2021/2022 monitoring period show koala scats around the offset area (Map 2) in similar locations to past scat occurrences. To prevent resampling the same tree, different trees are searched each visit.

Camera trap observation

One koala was observed as part of the bi-annual predator monitoring in the period relevant to this report (Figure 1). It was observed outside of the offset area, but within the Koala Crossing property (Map 3).

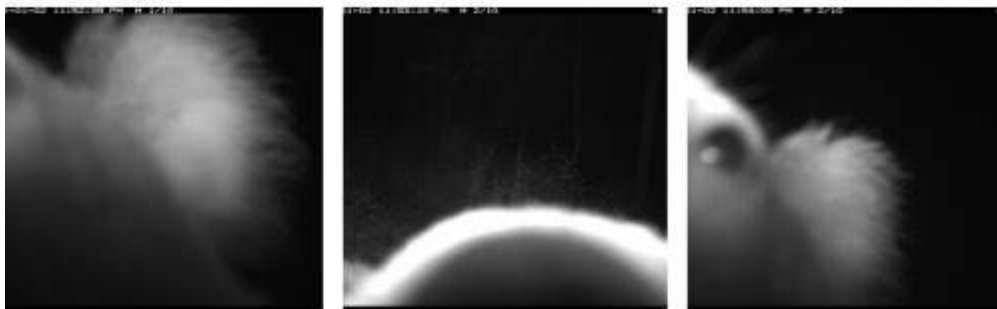


Figure 1. Koala observed on monitoring camera H.

Koala-predator interactions

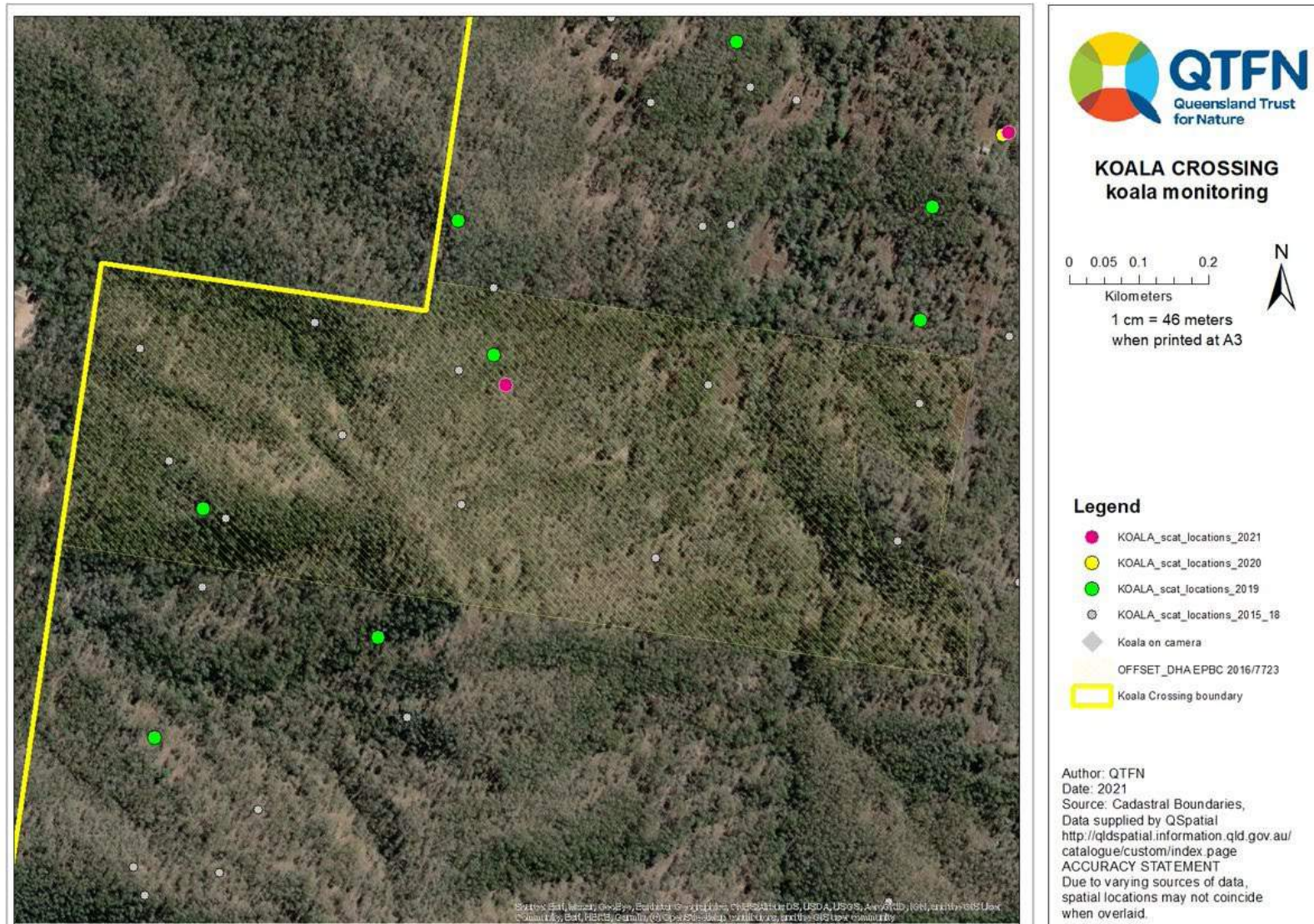
No koala predator interactions were recorded during the period relevant to this report.

Management outcomes

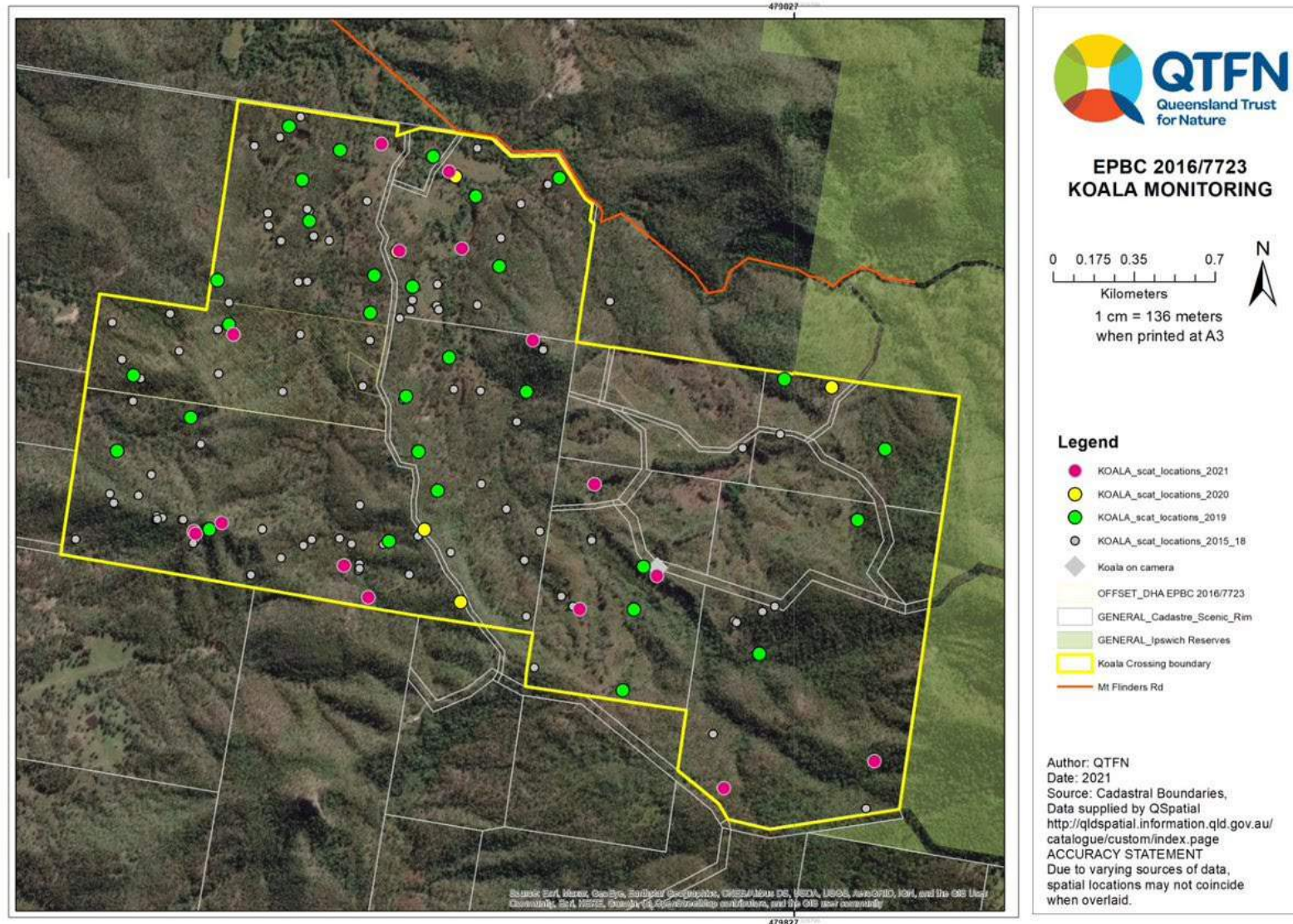
Koala scats indicate a stable and active population of koalas in the site. Opportunistic surveys will continue annually. The next intensive site-wide scat surveys, spotlighting surveys and tracking activities are planned for the Year 10 reporting period (2024).

Should koala density be found to significantly reduce (as defined by the applied survey method or expert) between survey events, a supplementary assessment will be implemented to review the likely cause of the reduced occurrence of koala within the offset area in accordance with the Offset Area Management Plan requirements (Appendix 1 action #2.1.5.1). In addition to the existing population, the property will continue to act as a release site for recuperated koalas that were found close to the property.

Map 2. Koala Monitoring within offset site



Map 3. Koala Monitoring within Koala Crossing



3.2 VEGETATION COMPOSITION

Relevant actions	Reporting requirement	Compliant
BASELINE		
Monitoring of weed infestations; adaptive management of shrub, tree and vine weed species if required.	Metric 1 – Percentage of search sites with recruitment of young food trees 86% of sites have evidence of recruitment occurring.	
Koala food tree monitoring to occur every 5 years. For full OAMP see Appendix 2.	Metric 2 – Percentage of search sites sustaining midsize food trees On average 61±0.03% of trees at sites where koala scat was found are in the 51-100cm circumference category.	Y- not an intensive year
	Metric 3 – Reduction in weed coverage across the site Weed coverage does not exceed baseline levels by more than 10%	

The maintenance of the koala population is dependent on the health, age and distribution of koala food trees within the offset area. Monitoring and management of the vegetation is an essential part of the management plan.

In this period, activities focus on annual weed monitoring and corrective actions, ensuring there is no increase in weeds above the baseline.

i. Monitoring in this period

Weed assessments continue to be conducted annually and compared to results from the baseline survey of 2015. Permanently marked transects were surveyed according to Nelder *et al* 2015, in a 50 x 10m transect (Map 4). Photo points were recorded at each transect so that the progress of the site could be monitored (Appendix 3). The target weed species identified as a threatening process to koalas is *Lantana camara*. Whilst other weeds were measured for overall ecological health, the focus of the weed management is the control and eradication of *L. camara*, as it has the capacity to prevent koala movement and access to food and shelter trees.

ii. Results and Management Outcomes

Offset-specific trends

There are three (3) survey sites within the EPBC 2016/7723 offset area. Since 2018, *L. camara* has been observed at two sites and coverage has remained below 30%. Across the survey sites, one remains absent of lantana, one has shown a decline in abundance (treated in 2020), and one demonstrated a slight increase. Of all survey sites this highest coverage was 27%. Management actions to address this is outlined below.

Lantana is managed at a property wide scale, with a targeted and strategic approach to high-risk areas. Comparatively across Koala Crossing, the offset site demonstrates very low risk of limited dispersal pathways to koalas with low coverage of *L. camara*.

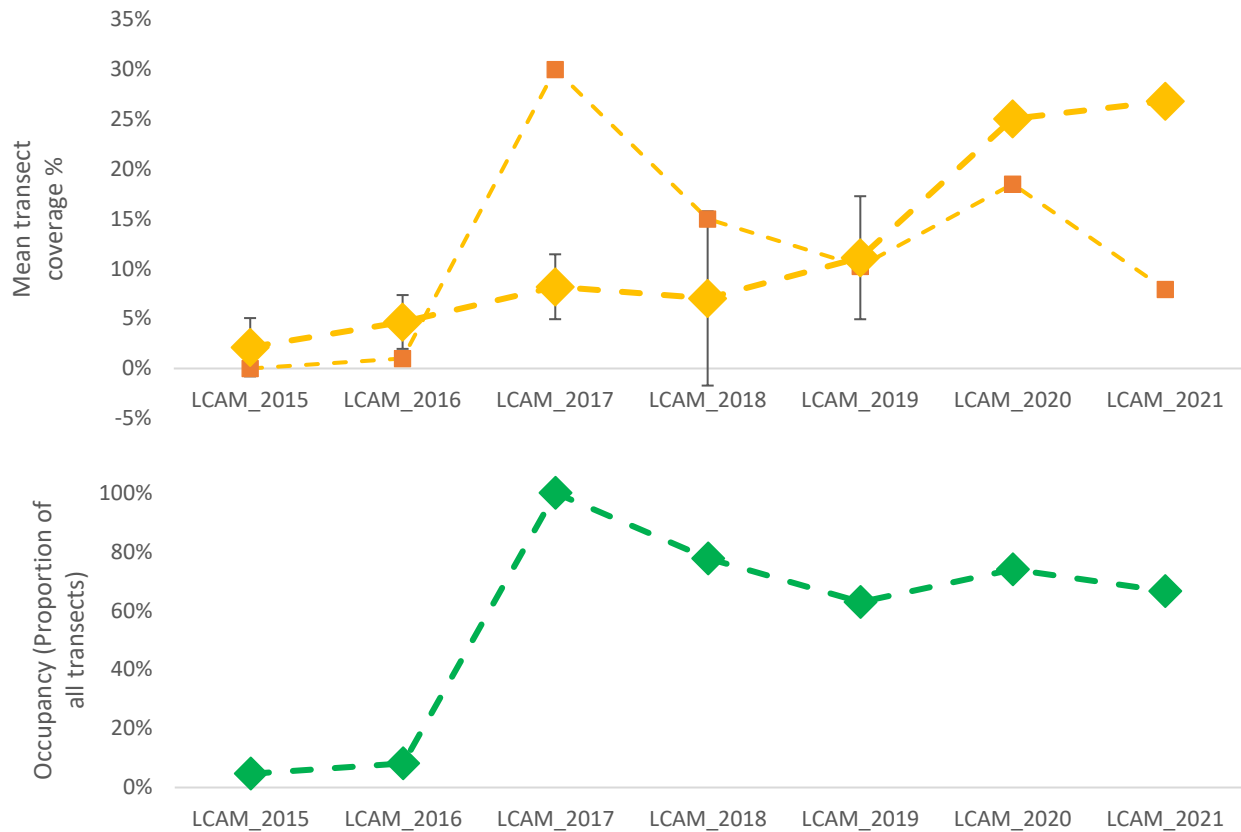


Figure 2. Weed transect results, baseline to present.

TOP: average % coverage for offset specific transects (orange square) compared to the property wide average (yellow diamond). BOTTOM: proportion of transects containing *L. camara*, property wide (green diamond).

Property-wide trends

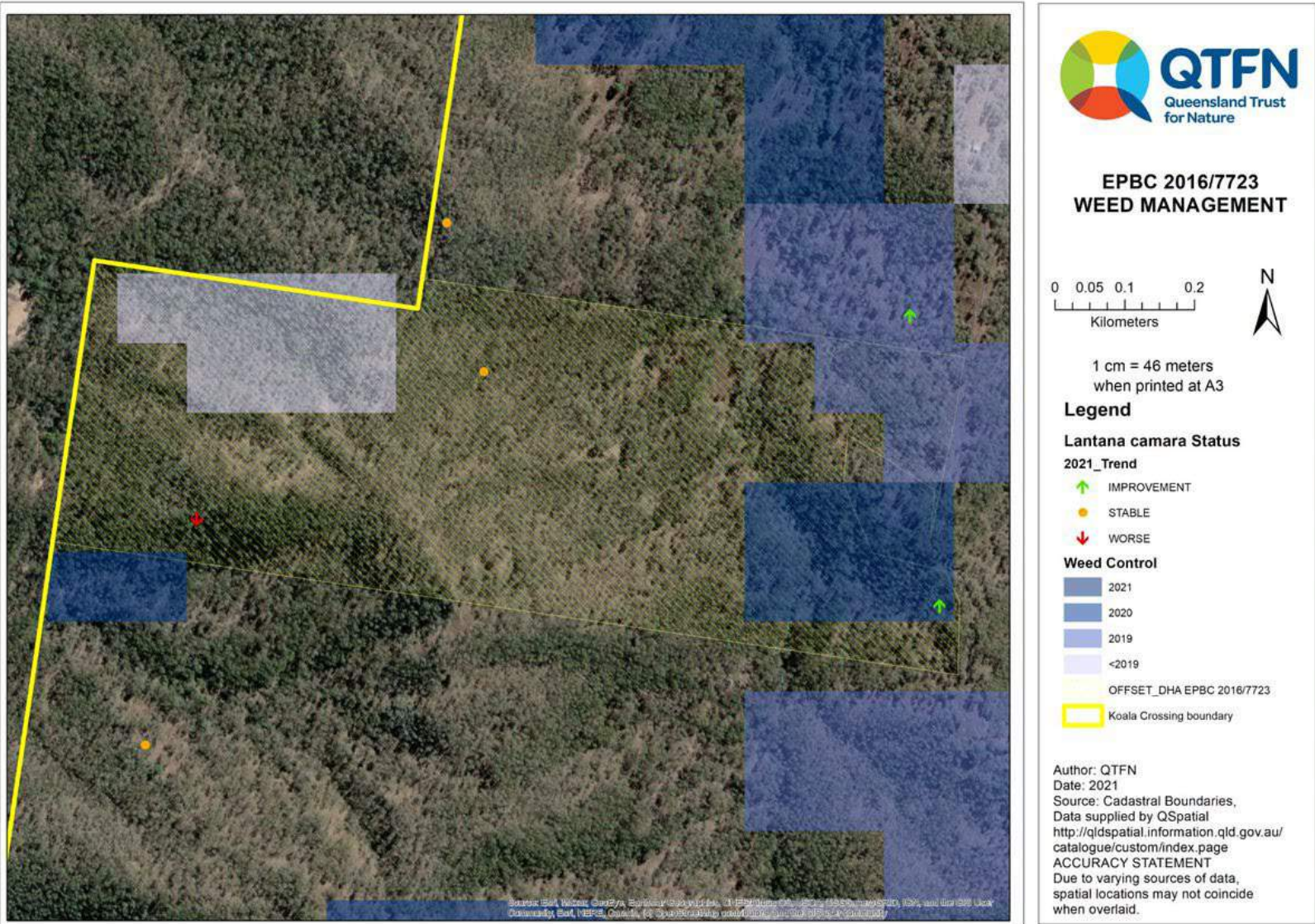
Lantana camara has reduced to 67% occupancy, meaning it is present at 18 of 27 transects monitored. This has decreased from 74% in 2020. Abundance of *L. camara* on average across transects has slightly increased, but remains around 25%. This demonstrates that isolated and outlier areas of lantana have been effectively reduced and that the larger infestations due for works this coming financial year are gradually increasing. This is not surprising, considering the significant rainfall in 2021 thus far, promoting increased growth rates. These areas of re-emergence have either been treated post monitoring (after March 2021) or will be treated within the next financial year. Over 100ha of lantana has been treated in 2021 (Map 4). *Lantana montevidensis* is now present in 100% of transects monitored at an average coverage of 60%. In areas of early invasion, coverage is approximately 46%, while the initial invasion point remains at 100% coverage

Management actions

The Koala Crossing Weed Strategy 2018-2020 was pivotal in reducing *L. camara* across Koala Crossing. QTFN has since revised this strategy and compiled the new Koala Crossing Weed Strategy 2020-2025, which follows the same principles, and actions weed control works targeting areas of re-emerging and highly infested *L. camara*. Considering emerging data, this strategy will also test and deploy methods for treating the emerging weed problem on site – *Lantana montevidensis*.

Follow up control works has been scheduled in the offset area to address the re-emergence. Overall, this offset site is in maintenance phase for weed control works, with previous controls demonstrating a successful reduction in dispersal limiting thickets of lantana.

Map 4. Weed Management within the offset area



3.3 HABITAT CONNECTIVITY

Relevant actions	Reporting requirement	Compliant
Vegetation clearing will not be undertaken within the offset area under any circumstances.	The location, extent and associated purpose for any vegetation clearing undertaken within the offset area will be detailed within the annual Offset Area Assessment Report.	Y
Firebreaks and fire control lines to be inspected at a minimum quarterly frequency or after major storm events.	Any change to site connectivity is to be detailed within the annual Offset Area Assessment Report.	
For full OAMP see Appendix 4.		

i. Monitoring and Management Outcomes

Firebreak inspection has been undertaken monthly during the 2021 monitoring period. There has been no clearing undertaken within the offset area, nor a change to site connectivity.

Management actions

Continue to follow the offset area management plan.

3.4 THREAT TO KOALA FROM DOGS, FOXES AND CATS

Relevant actions	Reporting requirement	Compliant												
<p>Post initial control event, abundance surveys for wild dogs to be undertaken bi-annually by a suitably qualified person (e.g. pest animal control professional or ecologist with at least two years relevant professional experience).</p> <p>Offset area-wide traverse by the landholder each two months to record the presence/absence of signs of wild dogs (including scats). The monitoring will take place along a set route utilising the existing network of tracks within the offsets area (e.g. fire control lines) to allow for replication of the monitoring events.</p> <p>Where post control surveys indicate there has been a recurrence of wild dogs within the offset area, control measures will be actioned using methods (controlled shooting or baiting) determined by a pest control professional in consideration of monitoring results.</p> <p>Any injured koala found on site will be sent to a veterinary clinic/wildlife rescue facility for rehabilitation.</p> <p>For full OAMP see Appendix 5 & 6.</p>	<p>Metric 1 – Relative Abundance Indices (RAI) RAI and confidence intervals developed for predators to show trends in data:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Species</th> <th>Baseline</th> <th>2019</th> </tr> </thead> <tbody> <tr> <td>Dingo</td> <td>1.1</td> <td>1.2</td> </tr> <tr> <td>Fox</td> <td>4.5</td> <td>2.8</td> </tr> <tr> <td>Cat</td> <td>1.6</td> <td>0</td> </tr> </tbody> </table> <p>Metric 2 – Occupancy data Occupancy data metrics developed. Baseline occupancy set at 40% of cameras with predators recorded.</p>	Species	Baseline	2019	Dingo	1.1	1.2	Fox	4.5	2.8	Cat	1.6	0	<p>Corrective action taken regarding wild dog numbers</p>
Species	Baseline	2019												
Dingo	1.1	1.2												
Fox	4.5	2.8												
Cat	1.6	0												

i. Monitoring in this period

Monitoring was conducted using remote sensing wildlife cameras (see Appendix 7 for examples of images) and offset area wide traverses for opportunistic scat collections. The report includes data from Summer 2020 through to Winter 2021.

This survey effort includes 13 camera stations (with Reconyx hyperfire HC600 remote-sensing cameras) capturing a comprehensive view of the landscape of Koala Crossing as a whole, with four stations located in their fixed locations within the EPBC 2016/7723 offset area.

Methodologies remain unchanged, but in contrast to previous reporting years, relative abundance indices (RAI) are now calculated using a standardised set of trapping days (40), with an independence threshold of 10mins (i.e. each observation of an animal ten minutes after the first observation is considered a new observation) analysed using the software ‘Camelot’.

Given that the movement range of these feral predators extends beyond the specific offset area, RAI are presented including the data from any camera trapping station with projected territories of any feral animal that overlap with the offset area. Observations specific to cameras within the offset area are presented in maps.

Estimating predator abundance using camera trapping, relies on assumptions regarding how the time that elapses between photos relates to the point at which we count a new observation (i.e. is a string of photos one dingo or three). This time is called the independence threshold (from here on IT). At present, abundance estimates for all species in QTFN’s camera trapping data are estimated using an IT of 10 seconds. If this threshold is too short, a string of photos of the same individual will be counted as multiple individuals (overestimation of abundance), too long and multiple individuals are counted as one (underestimation). To assess whether the current IT is appropriate we reviewed the number of seconds each individual dingo spends on camera across all sampling periods. Using the optimum IT recommended by the IT threshold assessment, RAI was calculated for each predator species.

Determining clear trends from RAI data can be problematic, due to the variability of presence absence of species, including variations in response to seasonal changes and year to year changes (rainy year or drought year) (Eyre et al 2018). For this reason, QTFN has determined a confidence interval to accurately test whether trends in predator numbers are increasing, decreasing or maintained at baseline. This was calculated through an estimate of the average maximum proportion of cameras that captured any predator and the standard deviation to estimate 95% confidence intervals (Table 3). Confidence intervals for RAI and occupancy were calculated based on data QTFN has collected since 2015. This allows a more accurate picture of overall populations of non-native predators and acceptable limits around trends.

Table 3. Confidence limits for estimates of occupancy by all introduced predators on Koala Crossing.

Offset	Strong Evidence of decrease	Conservative evidence of decrease	Conservative evidence of increase	Strong Evidence of increase
RAI limits: Dog; Fox; Cat	0.4; 1.3; n/a	1.4; 2.2; n/a	1.6; 2.4;0.1	2.6;3.3;n/a
Site-based estimate occupancy	The % occupied falls below the 2015 estimate minus the confidence interval <28%	Beyond the lowest estimate recorded on site <30%	Beyond the average for property in the 2015 survey >58%	The % occupied falls above the 2015 estimate plus the confidence interval >88%

Statistical inferences for RAI also contain no variance element, which limits analysis techniques for testing for a significant departure from baseline. At baseline, RAI estimates across summer and winter 2015 for each species were: *C. lupus* 0.8 ± 1.1 and *V. vulpes* 2.3 ± 0.99 . Therefore, this report will consider any estimate of RAI equal to the baseline estimate (± 0.1) as no evidence of change, an estimate beyond this, but within the confidence limits as conservative evidence of change (*C. lupus* between 0 - 1.9, *V. vulpes* 1.4 - 3.2 and *F. catus* anything over 0). Any estimate beyond the confidence limits is considered significant evidence of change.

ii. Results and Management Outcomes

During the reporting periods, Dogs (*Canis lupus*) have been recorded within the offset area. No cats or foxes were observed during this reporting period. However, foxes were recorded elsewhere on the property.

The RAI data calculated for each species shows that between 2018 baseline and the end of the 2021 monitoring period there is no evidence of a significant increase in foxes and cats, and a significant increase in dogs. This increase in wild dog relative abundance correlates with a decline in fox abundance.

Occupancy data is a measure of the proportion of cameras recording predators across the site, i.e a spatial measure of predator presence. Although, there is an increase in occupancy across the property, numbers remain below the significant increase threshold for all predators (Figure 3).

Dogs were captured on one camera trap that has potential foraging areas that overlap with EPBC2016/7723 offset area in this monitoring season (Map 5). Within the offset area, the one wild dog observed was located nearby a dam.

An increase in occupancy, but stable abundance may suggest that the dogs are utilising more of the landscape, due to the recent wet weather. Actions have been taken to control their numbers (see next section, page 21).

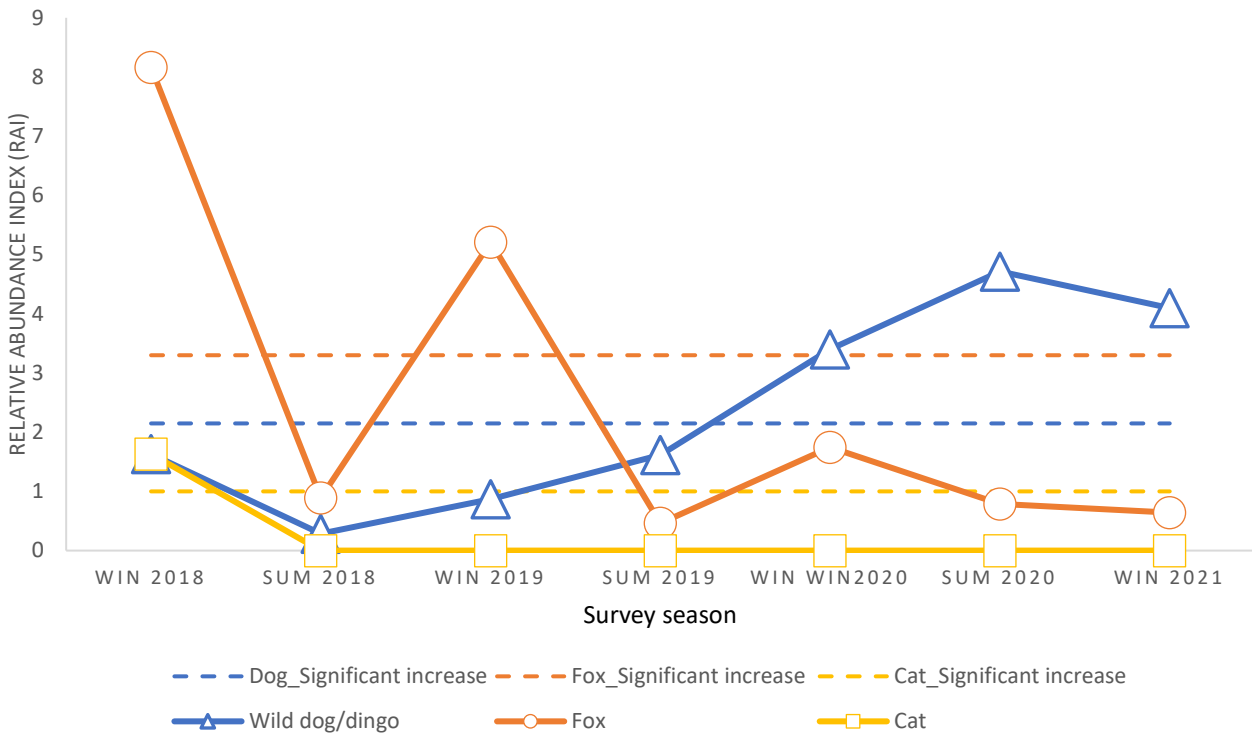
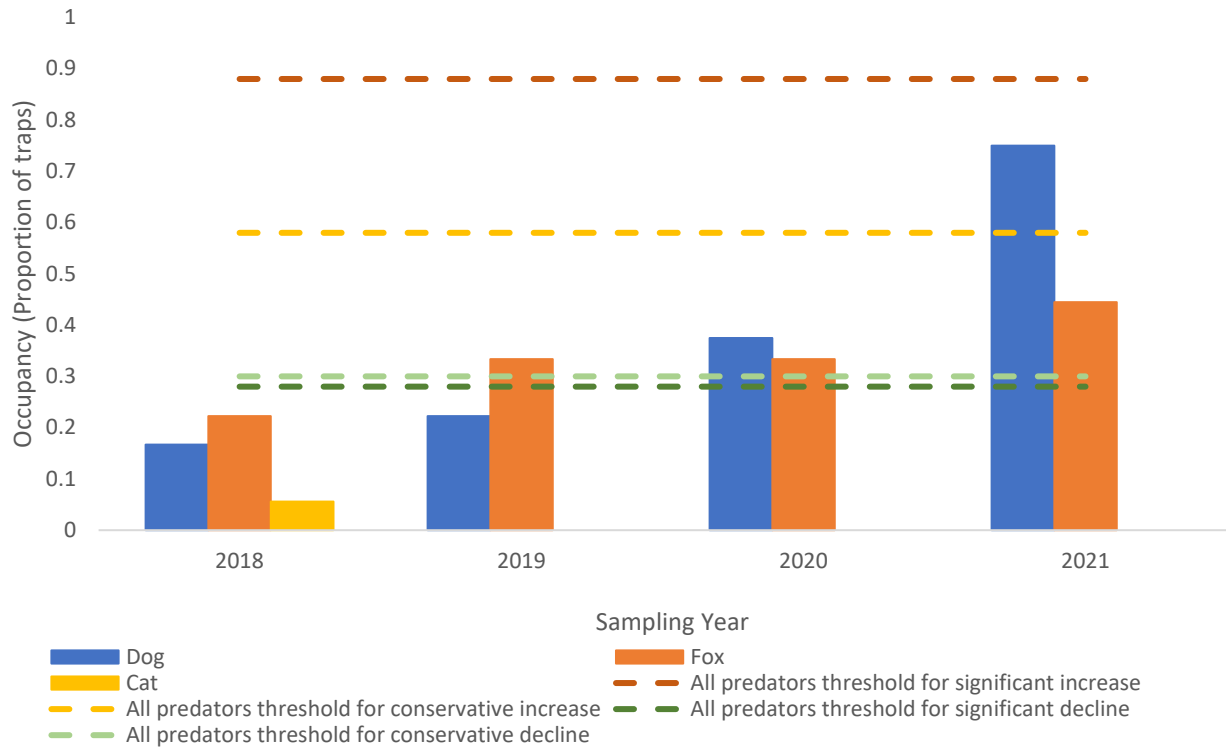


Figure 3. Occupancy (top) and relative abundance (bottom) of wild dogs/dingo (blue triangle), foxes (orange circle) and cats (yellow square). Significant thresholds shown in dashed line.

Analysis of predator scat

Predator scats continue to be found across the Koala Crossing site and within the EPBC 2016/7723 offset area (Map 5). Although both foxes and dogs remain on the site, predatory scats collected within this sampling period suggest that neither predator is consuming koala, and the diets of most individuals is composed of macropods and vegetation (Table 4).

As in previous years, no listed threatened species has appeared in the collected predator scats.

Table 4. The types of prey item identified from fox and dog scat collected within the site from February 2021 to February 2022, sorted by the frequency of individual predators whose scat contained each prey type.

Species name	Common name	Frequency
<i>Wallabia bicolor</i>	Swamp wallaby	0.35
<i>Macropus giganteus</i>	Eastern Grey Kangaroo	0.15
<i>Trichosurus vulpecula</i>	Brush-tailed possum	0.15
<i>Sus scrofa</i>	Pig	0.15
<i>Macropus rufogriseus</i>	Red-necked Wallaby	0.05
<i>Aepyprymnus rufescens</i>	Rufus bettong	0.05
<i>Isodon macrourus</i>	Northern Brown Bandicoot	0.05
	Wild Dog	0.05
	Sheep	0.05
	Invertebrates	0.05
	Unidentified bird	0.05
	Vegetation	0.05

Other observations

No pigs were observed in the offset area in the last monitoring season, except for evidence within scat collected within the property.

Management actions

A pest animal contractor has been engaged to deliver the Koala Crossing animal predator management plan with a primary focus on reducing the number of dogs and foxes throughout the property. Biannual monitoring using camera traps will continue, and the pest animal contractor will target their works along the creek line within the offset area. The camera traps along the creek line historically capture predators regularly. To date, both foxes and dogs have been removed from Koala Crossing within the reporting period.

The inherent nature of controlling introduced predators over an unfenced site means some years will see an increase in numbers, regardless of measures put in place to control them.

Conclusions regarding abundance of predators

Feral animal management on Koala Crossing has been occurring for a relatively short period, and the numbers of animals living on or utilising this relatively small property is low. However, during this time the relationship between predatory species and space, and between species can be inferred. These trends relate strongly to evidence from the prevailing literature.

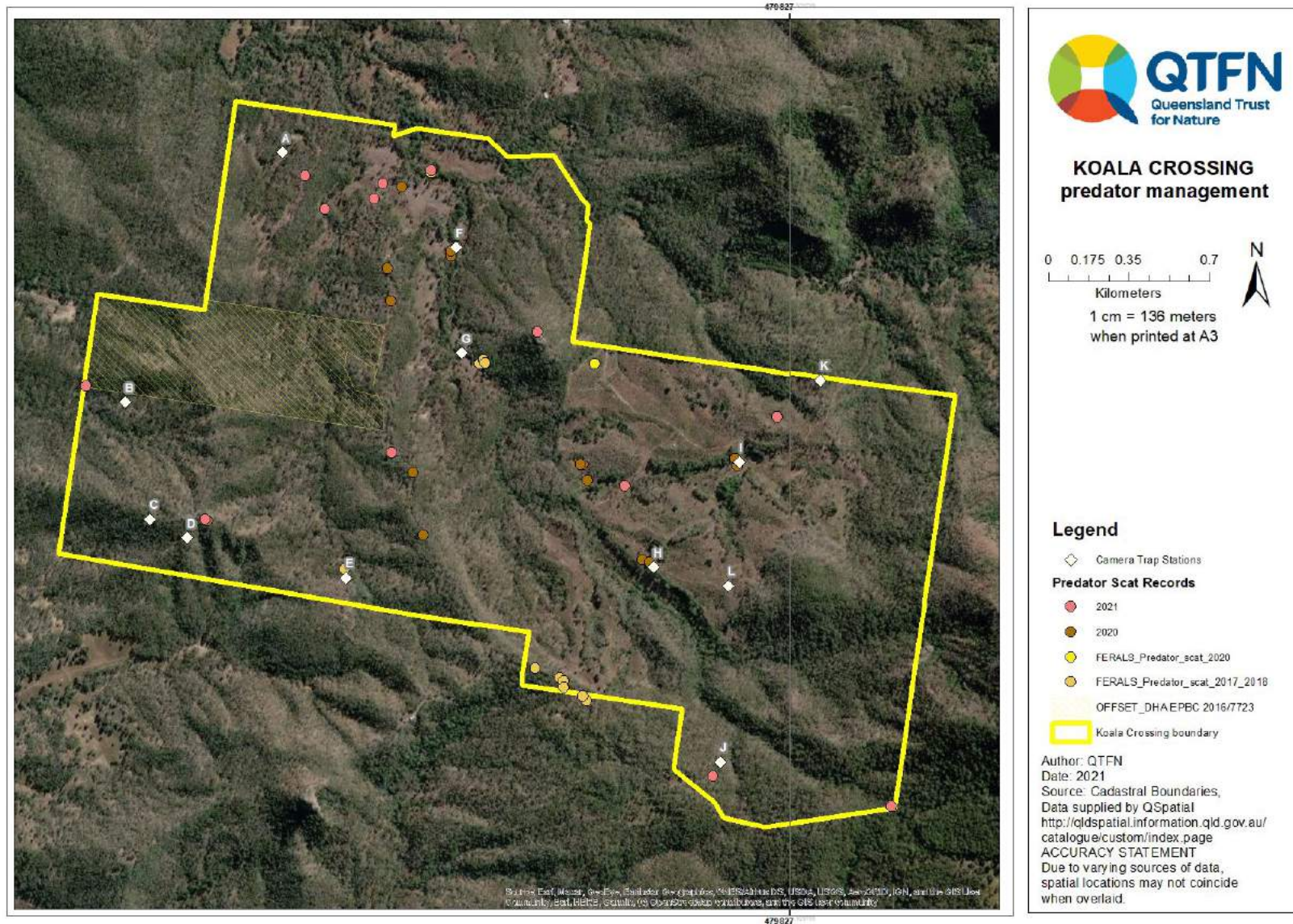
Predator abundance and diversity has remained highest at the three camera trap stations within the cleared section adjoining Sandy Creek within the western parcel of Koala Crossing (stations A, G and F). These areas are topographically the most alluvial, are the most disturbed, are situated on a creek and have nearby access to permanent water. Outside of this area, *C. lupus* has been recorded in the ridgeline area of the western parcel, where another dam has existed (camera station B) since 2015. Whilst *V. vulpes* were absent in this high-country area until 2017. The only sighting of *F. cattus* is within the lowland area of the site, where foxes and dogs have been observed sympatrically, albeit less so for foxes in recent years.

There is growing evidence to suggest that the presence of dingoes, or dingo-wild dog hybrids, results in reduced abundance of introduced meso-predators (cats and foxes) (Johnson and Ritchie 2013, Newsome et al 2017). The data

presented in this report aligns with this paradigm – generally referred to as meso-predator release theory – and highlights potential subtleties in predator management that QTFN may need to consider (Figure 3). The literature concerning dingo-wild dog management generally favours more remote or desert contexts, and whilst conclusions are conflicting, the presence of *C. lupus* generally results in lower abundance of meso-predators and particularly foxes, benefits small native mammals, and control of larger macropods.

As detailed above, no dog scat found on site to date has contained a threatened species. There is considerable dietary overlap between these *C. lupus* and *V. vulpes*, and *F. cattus*, however scat analysis from Koala Crossing indicates that fox scats from this site contained higher proportions of bird and reptile remains than dogs. There is also evidence in the literature to suggest the narrower home-ranges and tendency to surplus kill in both meso-predators warrants a stronger focus on their removal. Numerous conservation organisations are shifting their philosophy regarding predator management away from the removal of *C. lupus* toward a stronger focus on their retention and targeted control of meso-predators.

Map 5. Predator sightings within the offset area and whole of property.



3.5 THREAT TO KOALA FROM VEHICLE STRIKE

Relevant actions	Reporting requirement	Compliant
Any observed koala injury/mortality on roads/tracks within the offset area or roads that front Lots 86, 87, 88 or 89 RP892014 to be recorded. For full OAMP see Appendix 8.	Incident to be recorded in annual Offset Area Assessment Report.	Y

There were no vehicle strike incidents in any part of the property.

3.6 THREAT TO KOALA VIA BARRIERS TO DISPERSAL

Relevant actions	Reporting requirement	Compliant
Vegetation clearing will not be undertaken within the offset area under any circumstances. For full OAMP see Appendix 9.	The location, extent and associated purpose for any vegetation clearing or damage through natural disaster within the offset area will be detailed within the annual Offset Area Assessment Report.	Y

There was no vegetation clearing (excluding weeds) undertaken in any part of the offset area.

There was no damage associated with a natural disaster within any part of the offset area.

3.7 THREAT TO KOALA HABITAT THROUGH HYDROLOGICAL CHANGE

Relevant actions	Reporting requirement	Compliant
If any actions are proposed that may significantly impact the current (at time of offset area being legally secured) hydrological regime and therefore potentially impact koala habitat within the offset area then actions are required. For full OAMP see Appendix 10.	Where DoE approved hydrological change has occurred within the offset area, monitoring of the impact to the sites vegetation communities will be a component of an annual site assessment.	Y

There have been no hydrological changes made on any part of the property.

3.8 THREAT TO KOALA THROUGH FIRE

Relevant actions	Reporting requirement	Compliant
Except for prescribed burning, which will only be undertaken for the purposes of biodiversity enhancement, the offset area is to be managed to avoid the occurrence of fire by maintaining fire control lines.	To be informed by an Offset Area Bushfire Management Plan.	
Prescribed burning will be undertaken in consultation with, and under the guidance of the Queensland Rural Fire Brigade.	Monitoring results and maintenance log will be detailed within the annual Offset Area Assessment Report.	Y
For full OAMP see Appendix 11.		

Threats to koala from fire was addressed in accordance with Table 2.9 (OAMP), by referring to the 'Koala Crossing Fire Management Plan'.

The Koala Crossing Fire Management Plan divides the property into Fire Management Zones: Land Management Zones, Exclusion Zones and Asset Protection Zones. Within the Land Management Zones, the landscape is broken up into subzones or Fire Management Areas (FMAs) according to practicable containment lines. The Fire Management plan details burning intervals recommended for these FMAs (KCFMP 2015 p.16). The EPBC2016/7723 offset area is located in FMA 2.

i. Results and Management Outcomes

No burns were conducted during this reporting period. Fire break trails were traversed, monitored and maintained at regular intervals.

3.9 THREAT TO KOALA AND KOALA HABITAT FROM DISEASE AND PATHOGENS

Relevant actions	Reporting requirement	Compliant
To reduce the risk of introducing Chlamydia and Koala retrovirus into the resident population; uncontrolled translocation of koala is not permitted within the offset area.	Incidence of koalas exhibiting disease to be recorded if encountered during any monitoring events within the offset area.	
Vegetation management activities which include tree lopping/felling, weed removal, tree planting (including nursery suppliers) are deemed to be high risk in the context of introducing pathogens that may potentially impact koala habitat. As such, any person engaged to undertake these activities must satisfy the landholder that they have undertaken all reasonable steps to prevent the introduction of a pathogen/disease to the site (e.g. vehicle and equipment washdown prior to site entry).	Confirmation of translocation activity within the offset area is to be included within annual Offset Area Assessment Reports.	Y
For full OAMP see Appendix 12.		

i. Monitoring in this period

The initial baseline survey for koala health (July 2015) indicated no incidence of koala diseases within the population at Koala Crossing, however subsequent surveys indicated two instances of koalas infected with chlamydia. Chlamydia is a bacterial infection which affects most koalas within SEQ. The disease weakens the immune system and causes various problems, including blindness and female infertility. Stress within a population can cause outbreaks of Chlamydia. Stressors include habitat clearing, fragmentation and lack of food resources.

Monitoring continues with incidental sightings and monitoring events carried out by QTFN Ecologists and UQs KEG researchers. An ongoing program is in place to continue monitoring Koala Crossing's koala population to ensure they are healthy and thriving.

ii. Results and Management Outcomes

No new observations of disease have been made in this reporting interval. No new translocations have occurred.

Intensive koala health and disease monitoring is due to be completed again in 2024, five years from the baseline.

No signs of plant disease have been observed on site.

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APPENDIX

Appendix 1. Occurrence of Koala OMP

Table 2.1 Occurrence of Koala within offset area from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 12.

Outcome	2.1.1.1 Increase koala density within offset area
Actions	<p>2.1.2.1 Baseline koala density survey completed in June 2015 using Koala Rapid Assessment Method (Woosnam-Merches et al. 2012) and SAT and line transect surveys (Phillips and Callaghan. 2011; Dique et al. 2003)</p> <p>2.1.2.2 Replicated koala density/occurrence surveys undertaken within the offset area at years 5 and 10 from the date at which the offset is legally secured</p> <p>2.1.2.3 Koala density surveys to be undertaken by a suitably qualified environmental scientist</p>
Performance Indicators	<p>2.1.3.1 Baseline koala density/occurrence survey undertaken and documented</p> <p>2.1.3.2 Koala density/occurrence surveys (years 5 and 10) records an increase in koala density/activity within offset area</p> <p>2.1.3.3 Offset area is legally secured for conservation purposes</p>
Monitoring	<p>2.1.4.1 Baseline assessment of koala density to be undertaken in June 2015</p> <p>2.1.4.2 Outside of the formal koala density survey event, opportunistic koala sightings to be recorded (location and date) within the Annual Offset Area Assessment Report</p>
Reporting	<p>2.1.5.1 Results of pre-survey methodology review is to be documented within the Annual Offset Area Report</p> <p>2.1.5.2 Details of expert that undertook the review and the survey study term are also be included</p> <p>2.1.5.3 The koala density survey results will be incorporated within the relevant Annual Offset Area Assessment Report (years 0, 5 and 10)</p> <p>2.1.5.4 Opportunistic koala sightings to be incorporated into the Annual Offset Area Assessment Report</p> <p>2.1.5.5 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of the initial baseline survey</p> <p>2.1.5.6 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective Action	2.1.5.7 Should the koala density be found to significantly reduce (as defined by the applied survey method or koala expert) between survey events; a supplementary assessment will be implemented to review the likely cause of the reduced occurrence of koala within the offset area. The outcomes of the review inform adaptation of the management approach

Appendix 2. Vegetation composition OMP

Table 2.2 Vegetation composition from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 13-15.

<p>Outcomes</p>	<p>2.2.1.1 Vegetation composition maintains a ‘high’ score value in relation to habitat that is critical to the survival of the koala</p> <p>2.2.1.2 No significant increase in weed cover for species that could adversely affect the structural composition of vegetation within the offset area in relation to koala habitat value (i.e. weed species that are shrubs, trees or vines)</p> <p>2.2.1.3 Retain and enhance the structure and floristic diversity of canopy vegetation</p> <p>2.2.1.4 Retain and enhance the structure and floristic diversity of middle and understorey vegetation</p> <p>2.2.1.5 Ongoing retention and recruitment of Koala food trees</p> <p>2.2.1.6 Permanently remove existing threat of habitat degradation associated with clearing, development or other incompatible land uses</p> <p>2.2.1.7 Domestic livestock excluded from offset area (unless controlled grazing required for fire risk management)</p>
<p>Actions</p>	<p>2.2.2.1 Monitoring of canopy composition with respect to koala food tree species; adaptive management if required. Monitoring to include representative surveys of all applicable (koala habitat) vegetation communities within the offset area. For example, tertiary-level vegetation surveys in accordance with Neldner et al (2012)</p> <p>2.2.2.2 Monitoring of weed infestations; adaptive management of shrub, tree and vine weed species if required</p> <p>2.2.2.3 Flora surveys to be undertaken by a suitably qualified environmental scientist</p> <p>2.2.2.4 To remove the risk of habitat degradation associated with clearing, development or other incompatible land uses, the entire 161.11 ha offset area will be managed for conservation purposes</p> <p>2.2.2.5 Given that the subject property boundary is currently fenced in koala-permeable fencing, livestock will be excluded from the offset area through at least one of the following mechanisms:</p> <p>Livestock will not be kept within balance areas of Lots 87 or 88 RP892014 or,</p> <p>Koala-friendly fencing will be erected along the northern boundary of the offset area to exclude livestock grazing outside of the offset area yet within the subject property in accordance with a relevant guidelines</p> <p>2.2.2.6 Domestic livestock will only be introduced in the event that a fire risk professional and a suitably qualified environmental scientist deem that conditions are not suitable for an ecological burn and that grazing is appropriate to manage a high level of fire risk. In the event, a maximum head of 12 domestic livestock may be introduced for no more than three consecutive weeks. Level of risk is to be re-assessed by the aforementioned professionals following the grazing event</p> <p>2.2.2.7 Vegetation clearing will not be undertaken within the offset area under any circumstances, except the following:</p> <p>Removal of weeds</p> <p>To establish and maintain fencing around the boundary of the offset area</p> <p>To establish and maintain firebreaks and fire trails in accordance with an Offset Area Bushfire Management Plan that has been prepared by a suitably qualified professional</p>

	To remove or reduce imminent risk of serious personal injury or damage to infrastructure posed by the vegetation and only to the extent necessary to mitigate the risk. This action to be undertaken in accordance with the relevant legislative requirements in place at the time of clearing
Performance Indicators	<p>2.2.3.1 Vegetation composition retains structural attributes of forest or woodland, and maintains koala food tree species diversity recorded by baseline survey</p> <p>2.2.3.2 Weed cover (shrub, tree and vine) does not exceed baseline levels by more than 10%</p> <p>2.2.3.3 Offset area is legally secured as an area of High Conservation Value under section 19F of the vegetation management act 1999</p>
Monitoring	<p>2.2.4.1 Baseline assessment of koala food tree species richness conducted March 2015.</p> <p>2.2.4.2 Baseline assessment of offset area weed infestation levels (shrub, tree and vine species) conducted March 2015.</p> <p>2.2.4.3 Weed assessment and monitoring to be undertaken annually, during spring or summer to optimise detection</p>
Reporting	<p>2.2.5.1 Monitoring results to be recorded in annual Offset Area Assessment Report</p> <p>2.2.5.2 The location, extent and associated purpose for any vegetation clearing undertaken within the offset area will be detailed within the annual Offset Area Assessment Report</p> <p>2.2.5.3 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of the initial baseline survey</p> <p>2.2.5.4 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective Action	<p>2.2.6.1 Supplementary planting/assisted natural regeneration of koala food trees to be undertaken where koala food tree species diversity is recorded to have declined from baseline levels</p> <p>2.6.2 Weed control to be undertaken in accordance with accepted best practice principles</p> <p>2.2.6.3 If livestock-proof fencing is breached:</p> <p>Within 7 days livestock will be removed from offset area and temporary fencing measures put in place to ensure livestock are excluded and permanent repairs can be completed</p> <p>Within 28 days: repairs to fencing undertaken to achieve a koala-friendly livestock-proof standard</p>
Term	<p>2.2.7.1 Baseline monitoring for koala food tree species richness undertaken July 2015</p> <p>2.2.7.2 Subsequent koala food tree species richness monitoring to be undertaken every 5 years for the life of the offset</p> <p>2.2.7.3 Baseline monitoring for weed cover (shrub, tree and vine species) undertaken March 2015.</p> <p>2.2.7.4 Subsequent weed assessments and monitoring to be undertaken annually during the active management period</p>

Appendix 3. Photos of weed monitoring transects

2020

2021

Transect 07 – no change



L. camara 0%



L. camara 0%

Transect 09 – decline



L. camara 19%



L. camara 24%

2020

2021

Transect 31 – improvement



L. camara 37%



L. camara 0%

Appendix 4. Habitat connectivity

Table 2.3 Habitat connectivity from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 16-17.

Outcomes	<p>2.3.1.1 Maintain contiguous landscapes to allow koalas to establish new territories, facilitate gene flow and respond to environmental changes</p> <p>2.3.1.2 Permanently remove existing threat of habitat degradation associated with clearing, development or other incompatible land uses</p> <p>2.3.1.3 Contribute to koala movement and dispersal through the Flinders Karawatha corridor through the establishment of a protected habitat corridor (minimum 700m width)</p>
Actions	<p>2.3.2.1 To remove the risk of habitat degradation associated with clearing, development or other incompatible land uses, the entire 53.616 ha offset area will be managed for conservation purposes</p> <p>2.3.2.2 Vegetation clearing will not be undertaken within the offset area under any circumstance, except the following: Where necessary for the removal of weeds To establish and maintain fencing around the boundary of the offset area in accordance with relevant legislation To establish and maintain firebreaks and fire trails in accordance with an Offset Area Bushfire Management Plan that has been prepared by a suitably qualified professional and relevant legislation To remove or reduce imminent risk of serious personal injury or damage to infrastructure posed by the vegetation and only to the extent necessary to mitigate the risk. This action to be undertaken in accordance with the relevant legislative requirements in place at the time of clearing</p> <p>2.3.2.3 The subject property boundary is currently fenced in koala-permeable fencing. Any new or replacement fencing is to be 'fauna-friendly' in accordance with a relevant guidelines</p>
Performance indicators	2.3.3.1 Offset area is legally secure as an area of High Conservation Value under section 19F of the Vegetation Management Act 1999
Monitoring	2.3.4.1 Firebreaks and fire control lines to be inspected at a minimum quarterly frequency or after major storm events
Reporting	<p>2.3.5.1 The location, extent and associated purpose for any vegetation clearing undertaken within the offset area will be detailed within the annual Offset Area Assessment Report</p> <p>2.3.5.2 Any change to site connectivity is to be detailed within the annual Offset Area Assessment Report</p> <p>2.3.5.3 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of the initial baseline survey</p> <p>2.3.5.4 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective Action	2.3.5.5 Any fencing within or adjoining the offset area is koala permeable, and any fencing installed or replaced within the offset area is to be fauna friendly in design as per a relevant guideline such as Wildlife Friendly Fencing Project (2014) or Land for Wildlife (nd).

Appendix 5. Threat to koala from wild dogs

Table 2.4 Threat to koala from wild dogs from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3,, pp. 17-19.

Outcome	2.4.1.1 Reduction of risk of koala mortality or injury by dog attack within the offset area through reduction in wild dog abundance
Actions	<p>2.4.2.1 Initial survey to establish a baseline of wild dog abundance within the offset area was conducted in June 2015 with subsequent monitoring occurring every six months. The survey method used for the initial abundance survey will be informed using best practice methodology and applicable guidelines available at the time of survey (e.g. DoE, 2007 and Mitchell and Balogh, 2007).</p> <p>2.4.2.2 Baseline predator abundance survey is to be undertaken by a suitably qualified person</p> <p>2.4.2.3 Offset area wide wild dog control program to be undertaken following the monitoring period in June 2015. Where practicable and to increase the effectiveness of a control program the landholder will seek to coordinate control programs with comparable activities being undertaken by neighbouring landholders.</p> <p>2.4.2.4 Post the initial control event, presence/absence surveys for wild dogs to be undertaken each two months</p> <p>2.4.2.5 Post initial control event, abundance surveys for wild doges to be undertaken bi-annually by suitably qualified person</p> <p>2.4.2.6 Where post control surveys indicate there has been a recurrence of wild doges within the offset area, control measures will be actioned using methods (controlled shooting or baiting) determined by a pest control professional in consideration of monitoring results</p> <p>2.4.2.7 Any injured koala found on the site will be sent to a veterinary clinic/wildlife rescue facility for rehabilitation</p> <p>2.4.2.8 Installation of appropriate hazard warning signage indicating the offset area is subject to dog control for the purpose of managing the offset site for the benefit of koalas</p>
Performance Indicators	<p>2.4.3.1 Data collected from the initial control action to indicate the successful reduction of wild dog density (based on control method data e.g. bait takes, kills from shooting)</p> <p>2.4.3.2 No records of feral dog abundance within the site</p> <p>2.4.3.3 No records of injury and or death to koala relating to dog attacks recorded from within the offset area</p>
Monitoring	<p>2.4.4.1 Offset area-wide traverse every two months to record the presence/absence of signs of wild doges (including scats). The monitoring will take place along a set route utilising the existing network of tracks within the offsets area (e.g. fire control lines) to allow for replication of the monitoring events</p> <p>2.4.4.2 Bi-annual abundance surveys to be undertaken by a suitably qualified professional</p> <p>2.4.4.3 Opportunistic monitoring of koala/dog interactions in the form of injured, koala mortality records</p>
Reporting	<p>2.4.5.1 Wild dog abundance baseline survey results will be incorporated within the initial annual Offset Area Assessment Report</p> <p>2.4.5.2 Results of all presence/absence surveys will be reported upon on an annual bases as a component on the Annual Offset Areas Assessment Report</p> <p>2.4.5.3 All records of koala injury or death resulting from a dog attack are to be reported within the annual Offset Areas Assessment Report</p>

	<p>2.4.5.4 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of initial baseline survey</p> <p>2.4.5.5 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective action	<p>2.4.6.1 Should the efficacy of the initial and ongoing wild dog control measure no result in a reduction of wild dog numbers (based on initial baseline survey), alternative and/or additional control measures will be implemented and the efficacy evidenced through the ongoing monthly/quarterly monitoring survey results</p> <p>2.4.6.2 Any incidence of koala injury/mortality resulting from a dog attack will initiate supplementary monitoring and control measures in addition to the scheduled monthly and quarterly monitoring</p> <p>2.4.6.3 Any required adaptation to wild dog management measures in response to failure to meet the objectives of the OAMP are to be approved by a suitably qualified person</p>

Appendix 6. Threat to koala from feral cats and foxes

Table 2.5 Threat to koala from feral cats and foxes from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 19-20.

Outcome	2.5.1.1 Reduction of risk of koala mortality or injury by feral cat or fox attack within the offset area through reduction in feral cat or fox abundance
Actions	<p>2.5.2.1 Initial survey to establish a baseline of feral cats and fox abundance within the offset area was conducted for the entire property in June 2015, with subsequent monitoring occurring every six months. The survey method used for the initial abundance survey is informed using best practice methodology and applicable guidelines available at the time of survey (e.g. DoE, 2007 and Mitchell and Balogh, 2007).</p> <p>2.5.2.2 Offset area wide feral cat or fox control program to be undertaken with the aim of removing all feral cat or foxes from the offset area. The specific control method will be informed by the results of the initial feral cat or fox abundance survey. Where practicable and to increase the effectiveness of a control program the landholder will seek to coordinate control programs with comparable activities being undertaken by neighbouring landholders.</p> <p>2.5.2.3 Post the initial control event, presence/absence surveys for feral cat or foxes to be undertaken each two months</p> <p>2.5.2.4 Post initial control event, abundance surveys for feral cat or foxes to be undertaken bi-annually by suitably qualified person</p> <p>2.5.2.5 Where post control surveys indicate there has been a recurrence of feral cat or foxes within the offset area, control measures will be actioned using methods (controlled shooting or baiting) determined by a pest control professional in consideration of monitoring results</p> <p>2.5.2.6 Any injured koala found on the site will be sent to a veterinary clinic/wildlife rescue facility for rehabilitation</p> <p>2.5.2.7 Installation of appropriate hazard warning signage indicating the offset area is subject to feral cat or fox control for the purpose of managing the offset site for the benefit of koalas</p>
Performance Indicators	<p>2.5.3.1 Data collected from the initial control action to indicate the successful reduction of feral cat or fox density (based on control method data e.g. bait takes, kills from shooting)</p> <p>2.5.3.2 No records of feral cat or fox abundance within the site</p> <p>2.5.3.3 No records of injury and or death to koala relating to feral cat or fox attacks recorded from within the offset area</p>
Monitoring	<p>2.5.4.1 Offset area-wide traverse every two months to record the presence/absence of signs of feral cat or foxes (including scats). The monitoring will take place along a set route utilising the existing network of tracks within the offsets area (e.g. fire control lines) to allow for replication of the monitoring events</p> <p>2.5.4.2 Bi-annual abundance surveys to be undertaken by a suitably qualified professional</p> <p>2.5.4.3 Opportunistic monitoring of koala/feral cat or fox interactions in the form of injured, koala mortality records</p>
Reporting	<p>2.5.5.1 Method and results pertaining to initial offset area-wide baseline abundance survey to be documented within initial annual Offset Area Assessment Report.</p> <p>2.5.5.2 Results of all presence/absence surveys will be reported upon on an annual bases as a component on the Annual Offset Areas Assessment Report</p> <p>2.5.5.3 All records of koala injury or death resulting from a feral cat or fox attack are to be reported within the annual Offset Areas Assessment Report</p>

	<p>2.5.5.4 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of initial baseline survey</p> <p>2.5.5.5 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective action	<p>2.5.6.1 Should the efficacy of the initial and ongoing feral cat or fox control measure no result in a reduction of feral cat or fox numbers (based on initial baseline survey), alternative and/or additional control measures will be implemented and the efficacy evidenced through the ongoing monthly/quarterly monitoring survey results</p> <p>2.5.6.2 Any incidence of koala injury/mortality resulting from a feral cat or fox attack will initiate supplementary monitoring and control measures in addition to the scheduled monthly and quarterly monitoring</p> <p>2.5.6.3 Any required adaptation to feral cat or fox management measures in response to failure to meet the objectives of the OAMP are to be approved by a suitably qualified person</p>

Appendix 7. Images of predators from wildlife monitoring cameras

Dogs – *Canis lupus*



Summer



Winter

Fox – *Vulpes vulpes*



Summer



Winter

Appendix 8. Threat to koala from vehicle strike

Table 2.6 Threat to koala from vehicle strike from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 20-21.

Outcome	2.6.1.1 Contribute to the reduction of risk of injury or death to koala in relation to vehicle strike both within the offset area and on adjacent roads
Actions	<p>2.6.2.1 Signs were installed on the property boundary adjacent to unnamed public road that bisects offset area to alert traffic of the koala offset area and the presence of koalas in the local area.</p> <p>2.6.2.2 Signs were installed on the property boundary adjacent to the unnamed public road along the frontage to Lot 89 RP892014 to alert east bound traffic of the presence of koalas in the local area.</p> <p>2.6.2.3 Signs were installed on the property boundary adjacent to Mount Flinders Road along the frontage to Lot 86 RP892014 to alert west-bound traffic of the presence of koalas in the local area.</p> <p>2.6.2.4 Implementation of a slow speed requirement (40km/h) for vehicles traversing the offset area</p> <p>2.6.2.5 Implementation of a slow speed requirement (40km/h) for vehicles traversing the offset area.</p> <p>2.6.2.6 Signs were installed indicating a slow speed area at the main entry points to the offset area.</p>
Performance Indicators	2.6.3.1 No koala mortalities from vehicle strike within the offset area
Monitoring	2.6.4.1 Any observed koala injury/mortality on roads/tracks within the offset area or roads that front Lots 86, 87, 88 or 89 RP892014 to be recorded
Reporting	<p>2.6.5.1 Incident to be reported to:</p> <p>Local Government authority (e.g. currently Beaudesert Regional Council)</p> <p>Relevant State Government department (e.g. currently the DoEHP)</p> <p>2.6.5.2 Incident to be recorded in annual Offset Area Assessment Report</p> <p>2.6.5.3 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of the initial baseline survey</p> <p>2.6.5.4 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective Action	<p>2.6.6.1 Injured animals to be transported to a vet or suitably qualified and experienced wildlife carer as soon as possible</p> <p>2.6.6.2 Capture and method of transport for injured animals will be in accordance with accepted best practice principles at time of incident:</p> <p>Relevant local or state government websites</p> <p>Non-profit koala organisations</p>

Appendix 9. Threat to koala via barriers to dispersal

Table 2.7 Threat to koala via barriers to dispersal from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 22-23.

Outcomes	<p>2.7.1.1 Maintain and improve contiguous landscapes to allow koalas to establish new territories, facilitate gene flow and respond to environmental changes</p> <p>2.7.1.2 Retain and enhance the structure and floristic diversity of canopy vegetation</p> <p>2.7.1.3 Retain and enhance the structure and floristic diversity of middle and understorey vegetation</p> <p>2.7.1.4 Ongoing retention and recruitment of koala food trees</p> <p>2.7.1.5 Permanently remove existing threat of habitat degradation associated with clearing, development or other incompatible land uses</p> <p>2.7.1.6 Contribute to koala movement and dispersal through the Flinders Karawatha through the establishment of a protected habitat corridor (minimum 700m width)</p>
Actions	<p>2.7.2.1 To remove the risk of habitat degradation associated with clearing, development or other incompatible land uses, the entire 161.11ha offset area will be legally secured as an area of High Conservation Value under section 19F of the vegetation management act 1999</p> <p>2.7.2.2 Given that the subject property boundary is currently fenced in koala permeable fencing, livestock will be excluded from the offset area through at least one of the following mechanisms:</p> <p>Livestock will not be kept within the balance areas of Lots 87 or 88 RP892014</p> <p>Koala friendly fencing will be erected along the northern boundary of the offset area to exclude livestock grazing outside of the offset area yet within the subject property in accordance with a relevant guideline</p> <p>2.7.2.3 Domestic livestock will only be introduced in the event that a fire risk professional (e.g. representative of Qld Rural Fire Service) and a suitably qualified environmental scientist deem that conditions are not suitable for an ecological burn and that grazing is appropriate to manage a high level of fire risk (and any need to repeat this grazing cycle) is to be re-assessed by the aforementioned professionals following the grazing event.</p> <p>2.7.2.4 Any fencing installed or replaced within the offset area is to be fauna-friendly in design as per a relevant guideline</p> <p>2.7.2.5 Vegetation clearing will not be undertaken within the offset area under any circumstances except the following:</p> <p>Where necessary for the removal of weeds</p> <p>To establish and maintain fencing around the boundary of the offset area</p> <p>To establish and maintain firebreaks and fire trails in accordance with an Offset Area Bushfire Management Plan that has been prepared by a suitably qualified professional</p> <p>To remove or reduce imminent risk of serious personal injury or damage to infrastructure posed by the vegetation and only to the extend necessary to mitigate the risk</p>
Performance indicators	<p>2.7.3.1 Offset area is legally secured as an area of High Conservation Value under section 19F of the vegetation management act 1999</p>
Monitoring	<p>2.7.4.1 Offset area fencing to be monitored on a monthly basis.</p> <p>2.7.4.2 Firebreaks and fire control lines to be inspected at a minimum quarterly frequency and after major storm events</p>

Reporting	<p>2.7.5.1 The location, extent and associated purpose for any vegetation clearing or damage through natural disaster within the offset area will be detailed within the annual Offset Area Assessment Report</p> <p>2.7.5.2 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of the initial baseline survey</p> <p>2.7.5.3 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective Action	<p>2.7.5.4 If livestock are kept on the balance of the property and livestock proof fencing is breached:</p> <p>Within 7 days: livestock will be removed from offset area and temporary fencing measures put in place to ensure livestock are excluded until permanent fence repairs can be completed</p> <p>Within 28 days: Repairs to fencing undertaken to achieve koala-friendly livestock-proof standard</p>

Appendix 10. Threat to koala habitat through hydrological change

Table 2.8 Threat to koala habitat through hydrological change from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 23-24.

Outcome	2.8.1.1 To ensure the koala habitat within the offset area is maintained and the potential carrying capacity of the area is not reduced due to anthropogenic hydrological change
Actions	2.8.2.1 If any actions are proposed that may significantly impact the current (at time of offset area being legally secured) hydrological regime and therefore potentially impact koala habitat within the offset area then the following actions will be required: Presentation of proposed hydrological change to DoE, detailing the potential impact koala habitat within the offset area. This will include specialist reports detailing the nature of the hydrological change and the expected impact to the offset areas vegetation communities Only DoE approved hydrological change will be permitted within the offset area
Performance Indicators	2.8.3.1 The overall performance indicator resulting from the stated actions will be no significant impact to koala habitat as a result of hydrological change within the site
Monitoring	2.8.4.1 Where DoE approved hydrological change has occurred within the offset area, monitoring of the impact to the sites vegetation communities will be a component of annual site assessment
Reporting	2.8.5.1 The annual Offset Area Assessment Report will present details relating to requested hydrological change requests made to DoE 2.8.5.2 Assessment of vegetation in relation to potential impacts resulting from hydrological change will be presented within the Annual Offset Area Assessment Report
Corrective Action	2.8.6.1 Only DoE-approved actions which could potentially significantly impact the hydrological status quo within the offset area are permissible. Should it be determined that there is an impact to koala habitat from hydrological change (as evidenced through annual vegetation assessments) then corrective actions, as determined by a suitably qualified professional within affected areas will occur

Appendix 11. Threat to koala through fire

Table 2.9 Threat to koala through fire from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 24-26.

Outcomes	<p>2.9.1.1 Minimise the risk of high intensity fire within the offset area</p> <p>2.9.1.2 Minimise the risk of koala mortality within the offset area due to prescribed burning</p>
Actions	<p>2.9.2.1 A suitably qualified professional will prepare an Offset Area Bushfire Management Plan, detailing: current vegetation condition and fire risk, locations of current and required firebreaks and fire control lines, current fuel loads, recommended actions and timeframes for maintenance of bushfire risk within the context of the adapted Regional Ecosystem Description Database guidelines (refer below) and biodiversity outcomes sought for the offset area.</p> <p>2.9.2.2 With the exception of prescribed burning, which will only be undertaken for the purposes of biodiversity enhancement, the offset area is to be managed to avoid the occurrence of fire by:</p> <p>Maintaining fire control lines relative to the offset area; and</p> <p>Co-locating fire control lines with existing tracks and fence lines on the property where possible</p> <p>2.9.2.3 Existing fencing, firebreaks and fire control lines are to be kept clear of encroaching vegetation to a width as defined by the Offset Area Bushfire management Plan and in accordance with relevant legislation (e.g. Sustainable Planning act 2009)</p> <p>2.9.2.4 Vegetation within the offset area will be managed in accordance with the following specifications, which are adapted from the Regional Ecosystem Description Database fire management guidelines for the two vegetation types that occur within the offset area (RE 12.9-10.2 RE 12.9-10.7 and 12.8.24)</p> <p>SEASON: Summer to winter</p> <p>INTENSITY: Low to moderate</p> <p>INTERVAL: 4-25 years</p> <p>STRATEGY: 40-60% mosaic burn. Burn with soil moisture and with a spot ignition strategy so that a patchwork of burn/unburn country is achieved</p> <p>ISSUES: The fire regime will maintain a mosaic of grassy and shrubby understoreys. Ground litter and fallen timber habitats will be maintained by burning only with sufficient soil moisture. Burning will produce fine scale mosaics of unburnt areas. Variability in season and fire intensity will occur, as well as spot ignition in cooler or moister periods to encourage mosaics.</p> <p>2.9.2.5 The following parameters will be adhered to throughout the planning and implementation of any prescribed burning:</p> <p>Undertake pre-burn survey to identify areas of high koala activity;</p> <p>No prescribed burning will be undertaken when female koalas are likely to be carrying dependent young</p> <p>Prescribed burning will only be carried out during appropriate weather conditions (e.g. low temperature, low wind, high soil moisture)</p> <p>Post-fire practices will be implemented to mitigate the risk of uncontrolled fire damage (e.g. extinguishing burning of large trees)</p> <p>Minimise the extent of burning so that the risk of injury or mortality to koalas is reduced, the risk of canopy scorch is lowered, whilst other biodiversity benefits to other species are achieved</p>

	<p>2.9.2.6 Prescribed burning will be undertaken in consultation with, and under the guidance of the Queensland Rural Fire Brigade</p> <p>2.9.2.7 Domestic livestock will only be introduced in the event that a fire risk professional and environmental scientist deems that conditions are not suitable for an ecological burn. In this even, a maximum of 12 head of domestic livestock may be introduced for no more than 3 consecutive weeks.</p>
Performance Indicators	2.9.3.1 Fuel levels and burning regime maintained in accordance with Offset Area Bushfire Management Plan
Reporting	<p>2.9.4.1 Offset Area Bushfire Management Plan will be prepared within 6 months of the offset area being legally secured</p> <p>2.9.4.2 Monitoring results and maintenance log will be detailed within the annual Offset Area Assessment Report</p> <p>2.9.4.3 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of the initial baseline survey</p> <p>2.9.4.4 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective action	<p>2.9.5.1 If a wildfire occurs, the following actions will be taken by the landowner to remedy the situation:</p> <p>Inspect the fencing, undertake any repairs required to ensure livestock-proof standard</p> <p>Inspect fire control lines, undertake maintenance required to achieve compliance with the Offset Area Bushfire Management Plan</p> <p>Remove all livestock from the offset area within 7 days of commencing remedial action</p> <p>Engage suitably qualified professional to assess offset area and update Offset Area Bushfire Management Plan</p>

Appendix 12. Threat to koala and habitat from disease and pathogens

Table 2.10 Threat to koala and habitat from disease and pathogens from the Offset Area Management Plan EPBC 2016/7723, QTFN 2017, version 3, pp. 26-27.

Outcome	<p>2.10.1.1 Reduce risk of the spread of koala and vegetation diseases within the offset area and adjacent areas of koala habitat</p> <p>2.10.1.2 Third party contractors do not enter the site carrying pathogens</p>
Actions	<p>2.10.2.1 Baseline offset area condition survey is to include assessment for signs of <i>Phytophthora cinnamomi</i> and myrtle rust and is to be undertaken within six months of securing the offset area</p> <p>2.10.2.2 To reduce the risk of introducing Chlamydia and Koala retrovirus into the resident population; uncontrolled translocation of koala is not permitted within the offset area</p> <p>2.10.2.3 Vegetation management activities which include tree lopping/felling, weed removal, tree planting (including nursery suppliers) are deemed to be high risk in the context of introducing pathogens that may potentially impact koala habitat. As such, any person engaged to undertake these activities must satisfy the landholder that they have undertaken all reasonable steps to prevent the introduction of pathogen/disease to the site (e.g. vehicle equipment washdown prior to site entry)</p>
Performance Indicators	<p>2.10.3.1 In the event that regulator approved translocation of koala is proposed on the site the animal is to be assessed by a veterinarian prior to introduction</p> <p>2.10.3.2 Incidence of koala feed trees exhibiting disease to be recorded if encountered during any monitoring events within the offset area</p>
Monitoring	<p>2.10.4.1 Incidence of koalas exhibiting disease to be recorded if encountered during any monitoring events within the offset area</p>
Reporting	<p>2.10.4.1 Baseline data concerning observations around koala and koala habitat diseases and pathogens is to be documented within initial annual Offset Area Assessment Report</p> <p>2.10.4.2 Confirmation of translocation activity within the offset area is to be included within annual Offset Area Assessment Reports</p> <p>2.10.4.3 Incidence of koalas exhibiting symptoms of disease to be reported within annual Offset Area Assessment Report</p> <p>2.10.4.4 All annual Offset Area Assessment Reports are to be submitted to DoE on an annual basis within three months of the anniversary of the completion of the initial baseline survey</p> <p>2.10.4.5 All annual Offset Area Assessment Reports and any records of non-compliance are to be submitted to DoE via email</p>
Corrective action	<p>2.10.5.1 Should there be an increase in trees exhibiting disease symptoms and/or evidence of vegetation dieback (as noted during annual offset area assessments) the following corrective actions will take place:</p> <p>Review of the efficacy of current biosecurity measures</p> <p>Review of plant stock/management services suppliers should it be suspected plant pathogens have been introduced via external sources.</p>

Appendix 13. KOALA MANAGEMENT AND RESCUE PROTOCOL QTFN-KC-010115

If injured or orphaned koalas are found, note its condition and location and contact the following emergency phone number:

- Ipswich Koala Protection Society (IKPS) operate two 24/7 ambulances
- RUTH LEWIS - 0419 760 127/ 5464 6274.

IKPS is licenced with Department of Environment and Science (DES) to care for injured and orphaned wildlife, specialising in koala rescue and rehabilitation. They have appropriate facilities and members who are appropriately skilled and have access to reliable sources of a variety of recognised koala food tree species and an ability to collect it.

Other wildlife emergency numbers:

- RSPCA Qld on 1300 ANIMAL, 1300 264 625. RSPCA will usually refer calls to IKPS.
- Australia Zoo Wildlife Hospital 1300 369 652. Based on the Sunshine Coast.

SYMPTOMS OF SICK OR INJURED KOALAS

- Puffy or inflamed eyes, which may have a crust or a weepy discharge surrounding them;
- Dribbling saliva from the mouth;
- Fur that appears constantly wet or matted;
- A dirty tail with brown staining;
- Weakness or unusual behaviour;
- Remaining in the same tree for more than a few days;
- Sitting on the ground or very low down in a tree and not moving when approached. (This may indicate that the animal is too weak to climb);
- Not using all four limbs normally while walking or climbing;
- Very skinny and emaciated appearance;
- Signs of trauma such as cuts or blood on fur.

Signs of a dog attack could be wet, matted fur from the dog's saliva, and bleeding. Because koalas have very little fat under their skin, their internal organs can be easily punctured by the sharp teeth of a dog even though there may be very little damage to the skin surface, so it is very important that the animal is assessed by a vet or carer if a koala is found that is suspected to have been the victim of a dog attack.

PROTOCOL FOR ROAD INJURIES OR DOG ATTACKS

Follow the instructions below for road injuries in handling sick or orphaned koalas or koalas which have been attacked by dogs or injured in some other way. However, unless the koala is in immediate danger, it is better to leave it to the experts to catch it if they think it necessary.

For road injuries:

- Pull off the road safely. If possible, phone the IKPS for instructions.
- Make sure it is safe before you go onto the road to attend to the animal. Stop any traffic if necessary.
- Approach the animal carefully from behind.
- Place a sack, blanket, towel or box over the koala, enclosing its arms and head. Remember, the koala is frightened and has very sharp claws, so be careful. Injured or orphaned animals need immediate dark, warmth

and quiet. They may never have been touched by humans and any stress can cause further injury and death from shock. Also you may be injured.

- Move the animal to a safe place away from any traffic.
- Handle the koala as little as possible and keep the environment quiet. Keep it contained until help arrives or you get it to a Vet or Carer.
- Keep people and dogs away from the animal. Do not allow people to peek at or touch it.
- Do not try to feed the koala or give it anything to drink.

PROTOCOL FOR DEAD KOALAS

The information on the death of a koala is valuable to record, and samples from these koalas can contribute to research. IKPS will collect dead koalas as well as sick/injured/orphaned. Accurate records can and have made significant impacts and changes to the future conservation and protection of koala habitat. IKPS collects and records data, statistics and produces mapping of koala habitat and populations.

Look for ear tags which may have been placed by wildlife authorities or researchers so they can be notified of the death. Collect all relevant information, where possible, such as location, cause of death, date, sex and age of koala (age can only be determined by looking at teeth – this is done postmortem).

Samples can be made available for research, where possible. All koalas should be necropsied where cause of death is not positively known. An option that can possibly be utilised is, calling the Moggill Koala Hospital, (07) 3202 0267. The Moggill Koala Hospital is involved in ongoing koala research alongside University of Queensland researchers and scientists. Australian Zoo Wildlife Hospital on the Sunshine Coast (1300 369 652) also conducts necropsies.

Always check in the pouch of a dead female koala for the presence of a joey which may have survived. Call one of the wildlife emergency phone numbers and ask for instructions on what to do. If not able to contact someone, follow the procedure below:

- If the joey is still attached to the teat, do not remove it as you may cause injury to the joey. Take the dead mother and joey to a vet, or carer as soon as possible.
- If the joey is not attached, gently remove it from the pouch and wrap it in a towel or article of clothing and place it somewhere warm, such as under your jumper. (Very young joeys rely on their mother's body heat for warmth.) Alternatively use a warm hot water bottle or a plastic bottle filled with warm water. Use warm, not hot, water and cover the bottle with a jumper or other fabric so that you do not overheat or burn the joey. A backpack lined with soft towels or fabric is a good way to transport the infant.
- Handle the infant as little as possible and do not let other people peek at it or handle it. Remember, these tiny infants can die very easily from stress and noise.
- Do not give the joey anything to drink. Young koalas need a specialised diet and feeding the wrong formula could cause the infant to die.
- Get the joey to a vet or carer as soon as possible (Contact IKPS as soon as possible.)

RECORD KEEPING

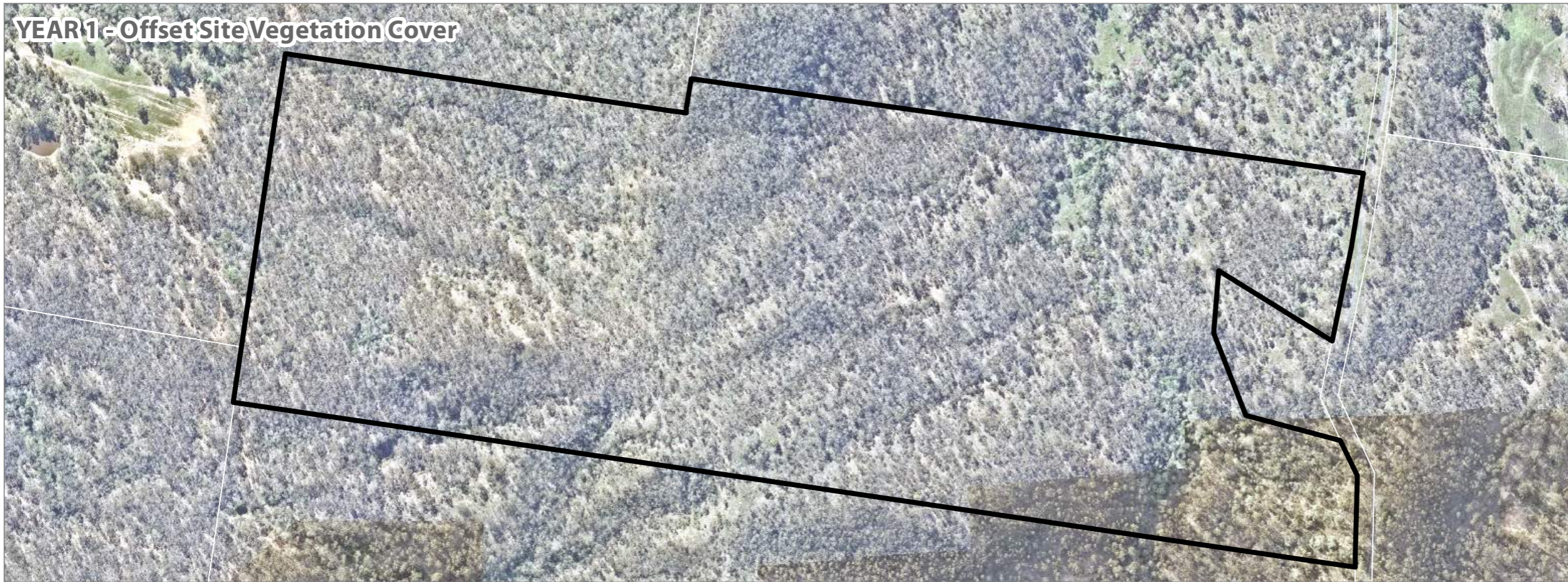
All koalas observed on the property will be recorded. Information to be collected includes date, time, GPS location, type of tree, condition of koala, sex if known and behaviour.

Copies of records will be provided to the Moggill Koala Hospital, State Government database, Wildnet, and to the Ipswich Koala Protection Society on a regular basis. Sightings will be recorded on Koala Record Sheets provided by DES.

Appendix C

Nearmap Aerial of Offset Site
(2018/2019– 2021/2022)

3. Year 4 Offset Koala Habitat





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

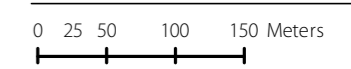
Layer Sources
 Qld State Cadastre and Mapping layers © State of Queensland (Department of Resources) 2022. Updated data available at <http://qldspatial.information.qld.gov.au/catalogue/>
 Aerial Imagery © Nearmap, 5 May 2019 and © Aerometrex, 14 November 2021

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Legend

-  Offset site
-  Old DCDB

Issue	Date	Description	Drawn	Checked
A	28/03/2022	Preliminary	LS	MS



Transverse Mercator | GDA 1994 | Zone 56 | 131,538,470 @A3



Rawlings Road, Deebing Heights