PART A – EPBC ACT APPROVAL (EPBC2019/8539)

Australian Government
Department of Agriculture, Water and the Environment

APPROVAL

Residential Development, 357 Ripley Road, Ripley, Qld (EPBC 2019/8539)

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

Details

Person to whom the approval is granted (approval holder)	HB Doncaster Pty Ltd
ACN or ABN of approval holder	ABN: 15 164 200 533
Action	The development of a residential subdivision and associated infrastructure at 357 Ripley Road, Ripley, Queensland [See EPBC Act referral 2019/8539]

Proposed Approval decision

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

Controlling Provisions

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

Period for which the approval has effect

This approval has effect until 31 December 2045.

Decision-maker

Name and position	Kim Farrant Assistant Secretary of Environment Assessments Queensland and Sea Dumping Branch Department of Agriculture, Water and the Environment
Signature	
Date of decision	9/11/2020

Conditions of approval

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

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

1. To minimise impacts to the **Koala** and **Grey-headed Flying-fox**, the approval holder must:
   a. not **clear** more than 56.20 ha of **Koala habitat** and **Grey-headed Flying-fox habitat** within the **development area**; and,
   b. not clear outside the **development area.**
2. To minimise the risk of injury or death to **Koalas** and **Grey-headed Flying-foxes** within the **development area** during **clearing** and **construction**, the approval holder must:
   a. ensure that a qualified **fauna spotter catcher** is present during all **clearing** and empowered to guide all **clearance** to ensure that **Koalas** and **Grey-headed Flying-foxes** have safely moved out of the **development area** of their own volition before **Koala habitat** and **Grey-headed Flying-fox habitat** is **cleared**; and,
   b. install temporary **Koala exclusion fencing** around **construction** works. Temporary **Koala exclusion fencing** must be installed immediately after **clearing** and prior to the commencement of **construction.** Temporary **Koala exclusion fencing** must remain in place around any **construction** area until all **construction** activities within that fenced area are completed.
3. For the ongoing protection of the local **Koala** population at the proposed impact site, the approval holder must:
   a. install and maintain, for the duration of the approval, **Koala awareness signage** in no less than four locations along the edge of the esplanade road that faces the **on-site open space area** at indicative locations shown by the red dots on Attachment B; and,
   b. install traffic calming measures and install prominent signage to limit vehicle speeds to minimise the risk of injury or deaths of **Koalas** occurring on residential roads in the **development area.**
4. To compensate for the **clearing** and **functional loss** of 56.20 ha of **Koala habitat** and **Grey-headed Flying-fox habitat,** the approval holder must:
   a. **Legally secure** at least 66 ha of land at the **Cherry Gully East Offset Area** and commence **management activities** prior to the **commencement of the action**;
   b. within 20 **business days** of **legally securing** the **Cherry Gully East Offset Area**, provide the **Department** with written evidence demonstrating that the **Cherry Gully East Offset Area** has been **legally secured** (e.g. **legal security documentation**), and **shapefiles** of the **offset attributes**; and,
   c. complete all **management activities** as described in the **Cherry Gully East Offset Area Management Plan** by 31 January 2045.

   Note: Uses or activities at the offset site are not permitted if they are not compatible with the primary purpose of conservation.

5. During **Year 1**, the approval holder must complete baseline surveys of the entire **Cherry Gully East Offset Area** to determine the:

   a. **vegetation condition attributes** for each **Regional Ecosystem**;

   b. **extent of weed cover**; and,

   c. seasonal **feral animal** abundance.

   The baseline surveys must be undertaken by a **suitably qualified field ecologist** in accordance with a scientifically valid, robust, and repeatable methodology.

6. Within three months of completion of the baseline surveys required under Condition 5, the approval holder must engage a **suitably qualified field ecologist** to update the **Cherry Gully East Offset Area Management Plan** to include the following:

   a. include the results of the baseline surveys required under Condition 5;

   b. provide details of how the outcomes specified in Conditions 9 – 12 will be achieved; and,

   c. specify a program of monitoring, and reporting progress against, performance and completion criteria in respect of achieving the ecological outcomes specified in Conditions 9 – 12.

7. The updated **Cherry Gully East Offset Area Management Plan** referred to in Condition 6 must be published on the **website** and remain published for the duration of the approval. The approval holder must implement the published updated **Cherry Gully East Offset Area Management Plan** for the duration of the approval, and must achieve the outcomes required under Conditions 9 – 12.

8. In accordance with the Offset Area Management Plan, the approval holder must publish each **Cherry Gully East Offset Area Management Plan Annual Report** on the **website** within 40 **business days** following the end of the 12 month reporting period. The approval holder must keep each **Cherry Gully East Offset Area Management Plan Annual Report** published from the date it is first published for the duration of the approval.

Pest and Weed management

9. The approval holder must:

   a. demonstrate, by the end of **Year 5**, that the abundance of **feral animals** at the **Cherry Gully East Offset Area** is reduced by 95% relative to the abundance of **feral animals** determined by the baseline surveys,

   b. for the rest of the period of effect of the approval, ensure that the abundance of **feral animals** is less than 5% of the abundance of **feral animals** determined by the baseline surveys; and,

   c. ensure that zero **Koala** injuries or mortalities occur as a result of the presence of **feral animals**.

10. The approval holder must demonstrate that the **extent of weed cover** at the **Cherry Gully East Offset Area** is:

    a. by the end of **Year 5,** reduced by 80% relative to the **extent of weed cover** determined by the baseline surveys;

    b. by the end of **Year 10,** reduced by 95% relative to the **extent of weed cover** determined by the baseline surveys; and,

    c. for the remainder of the approval, no more than 5% of the **extent of weed cover** determined by the baseline surveys.

Stock Exclusion

11. For the protection of **Koala Habitat** and **Grey-headed Flying-fox habitat**, the approval holder must demonstrate by the end of **Year 1** that **fauna friendly stock exclusion fencing** has been installed around the entire perimeter of the **Cherry Gully East Offset Area**. The approval holder must ensure that the **fauna friendly stock exclusion fencing** is maintained and effective for its purpose for the duration of the approval, and ensure that zero stock incursions occur.

Habitat Quality Improvement

12. For the protection of the **Koala** and **Grey-headed Flying-fox** the approval holder must achieve the following outcomes at the **Cherry Gully East Offset Area** by 31 January 2045:

    a. Undertake ecological work to restore **vegetation condition attributes** to the **benchmark** for each **Regional Ecosystem** at the **Cherry Gully East Offset Area** specified in the **Cherry Gully East Offset Area Management Plan**; and,

    b. Achieve the **rehabilitation success criteria** by **Year 10** as a result of planting, and maintaining trees of appropriate species, and once the **rehabilitation success criteria** are achieved, maintain for the duration of the approval.

    The approval holder is responsible to achieve and maintain the outcomes specified under Condition 12 for the period of effect of the approval.

13. If, at any time during the period of effect of the approval, the **Minister** is not satisfied that any of the requirements or outcomes under Conditions 9 – 12 have been or are likely to be achieved or maintained, the **Minister** may request (in writing) further evidence from the approval holder as to how the requirements or outcomes of these Conditions will be achieved or maintained. If requested by the **Minister**, the approval holder must:

    a. provide a report to the **Department** that documents the cause of the potential or actual non-achievement of required outcomes, the corrective actions to be taken (including timeframes for reporting to the **Department** the success of those actions) and the contingency measures that will be implemented to prevent further occurrences;

    b. revise the updated **Cherry Gully East Offset Area Management Plan**, applying the advice of a **suitably qualified field ecologist** and within a timeframe determined by the **Minister**, to include the corrective actions and contingency measures and a program of when and how the relevant contingency measures and corrective actions will be implemented;

    c. submit the revised **Cherry Gully East Offset Area Management Plan** to the **Department** for the **Minister**'s approval, within a timeframe determined by the **Minister**; and,

    d. implement the approved revised **Cherry Gully East Offset Area Management Plan** as required by Condition 13.c.

Part B – Standard administrative conditions

Notification of date of commencement of the action

14. The approval holder must notify the **Department** in writing of the date of **commencement of the action** within ten **business days** after the date of **commencement of the action.**

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

Compliance records

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

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

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

Annual compliance reporting

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

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

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

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

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

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

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

Reporting non-compliance

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

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

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

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

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

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

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

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

Independent audit

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

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

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

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

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

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

Completion of the action

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

Part C - Definitions

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

Benchmark means the quantitative value for the relevant BioCondition attribute specified for each **Regional Ecosystem** by the Queensland Herbarium, as described in *the BioCondition Benchmarks of Southeast Queensland (10/1/2019)* or a subsequent version approved by the Queensland Government.

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

Cherry Gully East Offset Area means the area located within the red dotted line on Attachment C. The **Cherry Gully East Offset Area** is located at Lot 1 on CSH1549, on Littles Road, Toogoolawah, Queensland.

Cherry Gully East Offset Area Management Plan means the *Cherry Gully East Offset Area Management Plan 2020*, prepared by One Environment and dated 26 June 2020 or the revised version approved by the **Minister**.

Cherry Gully East Offset Area Management Plan Annual Report means each annual report compiled by the Offset provider (to report on all **management activities,** surveys, results and outcomes within the previous 12-month operational period), as required in the **Cherry Gully East Offset Area Management Plan**.

Clear/clearing/clearance/cleared means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation (but not including weeds – see the *Australian weeds strategy 2017 to 2027* for further guidance).

Commencement of the action means the first instance of any specified activity associated with the action including **clearing** and **construction**. **Commencement of the action** does not include minor physical disturbance necessary to:

a. undertake pre-clearance surveys or monitoring programs;

b. install signage and /or temporary fencing;

c. protect environmental and property assets from fire, weeds and pests, including erection of temporary fencing, and use of existing surface access tracks; and

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

Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met. The **Department**'s preferred spatial data format is **shapefile**. This includes but is not limited to information detailing:

a. the date, location and extent of **protected matter** habitat **cleared** within the **development area**;

b. the location, extent and quality of **protected matter** habitat within the **Cherry Gully Station East Offset Area**;

c. **weed extent** within the **Cherry Gully Station East Offset area**;

d. **feral animal** numbers within the **Cherry Gully Station East Offset area**; and,

e. **Koala density** and **Grey-Headed Flying-fox** presence at the **Cherry Gully Station East Offset area.**

Completion of the action means the time at which all approval conditions (except Condition 24) have been fully met.

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

Compliance reports means written reports:

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

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

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

iv. annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

Construction means the erection of a building or structure that is or is to be fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; preliminary site preparation work which involves breaking of the ground (including pile driving); the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding minor physical disturbance as specified in the definition of **Commencement of the action**.

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

Development area means the 56.20 ha area enclosed by the black line designated as 'Referral Area' on Attachment A comprising Lot 2 on RP196154, Lot 1 on RP196152, Lot 1 on RP196150, Lot 342 on S3173 at 357 Ripley Road, Ripley Queensland.

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

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

Fauna spotter catcher means a person licenced under the Queensland *Nature Conservation Act 1992* to detect, capture, care for, assess, and release wildlife disturbed by vegetation **clearance** activities who has at least three years' experience undertaking this work with **Koala**.

Fauna friendly stock exclusion fencing means fencing designed to prevent access by grazing animals to offset areas while providing for the free movement of **Koalas** and **Grey-headed Flying-foxes**.

Feral animals means non-native feral animals known to predate on the **Koala**.

Functional loss means the isolation of a small area of habitat due to the clearance of surrounding connective vegetation, which results in the loss of ecological function for a protected matter.

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

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

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

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

Koala(s) means the Koala (*Phascolarctos cinereus*) *(combined populations of Qld, NSW and the ACT)* listed as a threatened species under the **EPBC Act**.

Koala awareness signage means prominent, legible, clearly understood signage for the purposes of alerting drivers that **Koalas** may be in the vicinity.

Koala density means the number and/or utilisation and distribution of **Koalas** per hectare as determined in field surveys over the entire **Cherry Gully East Offset Area** undertaken by a **suitably qualified field ecologist** using a scientifically robust and repeatable methodology over a timeframe that serves as a sound basis for comparison.

Koala exclusion fencing means fencing which prevents the movement of **Koalas**. Suitable examples of **Koala exclusion fencing** design are provided in *Koala Sensitive Design Guideline: A guide to koala sensitive designed measures for planning and development activities, version 2.0 (Queensland Department of Environment and Science, 2020).*

Koala food trees means a species of tree of genus *Angophora, Corymbia, Eucalyptus, Lophostemon* or *Melaleuca*, with a height of more than 4 metres or with a trunk circumference more than

31.5 centimetres at 1.3 metres above the ground, the leaves of which are known to be consumed by the **Koala**.

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

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

Legally secure(d/ing) means to provide ongoing conservation protection on the title of the land, under an enduring protection mechanism, such as a voluntary declaration under the *Vegetation Management Act 1999* (Qld) or another enduring protection mechanism agreed to in writing by the **Department**.

Legal security documentation means any documentation associated with **legally securing** offset site(s), including (but not limited to) management plans. **Legal security documentation** must include (at a minimum) the following:

a) Details of the **management activities** to be undertaken to achieve the outcomes prescribed under conditions 4 – 12; and,

b) A commitment that **legal security** of the **Cherry Gully East Offset Area** and **management activities** to achieve and maintain the outcomes prescribed under conditions 4 – 12 will be in place for the duration of the impact.

Management activities means activities to be undertaken at the **Cherry Gully East Offset Area**, including (but not limited to):

a. detailed baseline surveys to determine **extent of weed cover** and seasonal **feral animal** abundance;

b. management of weeds and **feral animals**;

c. installation of **fauna friendly stock exclusion fencing**;

d. ecological work to restore the **Regional Ecosystems** at the **Cherry Gully East Offset Area**

e. activities associated with planting new **Koala habitat** and **Grey-headed Flying-fox foraging habitat**; and,

f. activities associated with seed collection and propagation of planting stock.

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

Offset attributes means an '.xls' file capturing relevant attributes of the offset area, including:

a. **EPBC Act** reference number;

b. physical address of the **Cherry Gully East Offset Area**;

c. coordinates of the boundary points in decimal degrees;

d. **protected matters** that the offset compensates for;

e. any additional **EPBC Act** listed threatened species and communities that are benefiting from the offset; and,

f. size of the **Cherry Gully East Offset Area** in hectares.

On-site open space area means the shaded light-green area located in the south-west corner of the **development area**, north of Monterea Road, as shown on Attachment B.

Plan(s) means any of the documents required to be prepared, approved by the **Minister**, and/or implemented by the approval holder and published on the **website** in accordance with these conditions (includes action management plans and/or strategies).

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

Regional Ecosystem means a vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil as classified by the Queensland Government under the *Vegetation Management Act, 1999.*

Rehabilitation success criteria means to have successfully established a minimum of 150 **Koala food trees** per hectare, including a minimum of 100 **Grey-Headed Flying-fox foraging habitat** trees per hectare.

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

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

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

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

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

Year 1 means the period within 12 months from the date of this approval.

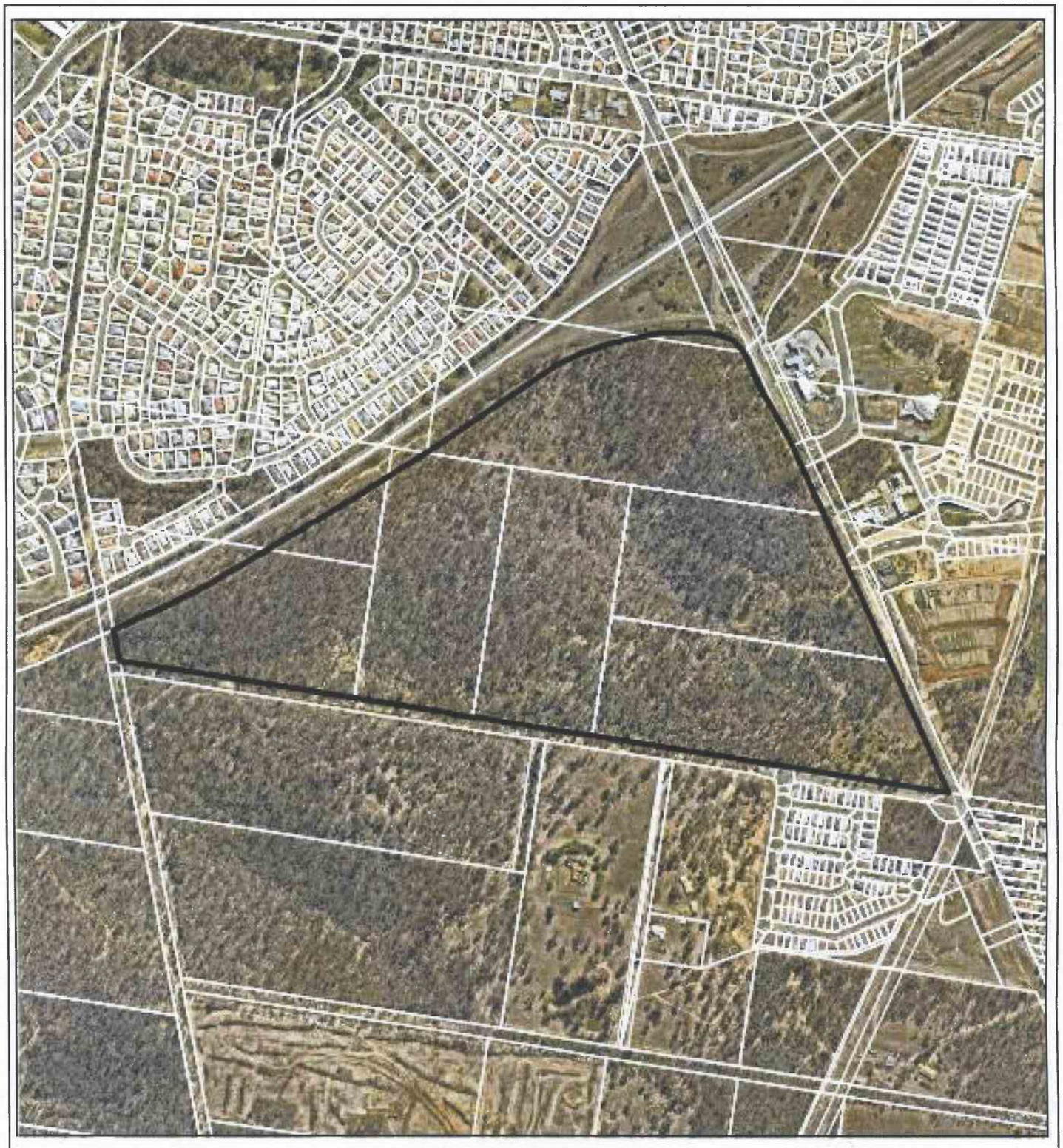
Year 2 means the period within two years from the date of this approval.

Year 5 means the period within five years from the date of this approval.

Year 10 means the period within ten years from the date of this approval.

ATTACHMENTS

Attachment A: Site aerial of **development area**, as delineated by the black line.



Legend

Qld DCDB

Referral area

Figure A2

Site Aerial

HB Doncaster Pty Ltd

File ref: 9780 E Figure A2 Site Aerial A
Date: 2/04/2020
Project: Ripley Road, Ripley

0 50 100 200 300 400 m

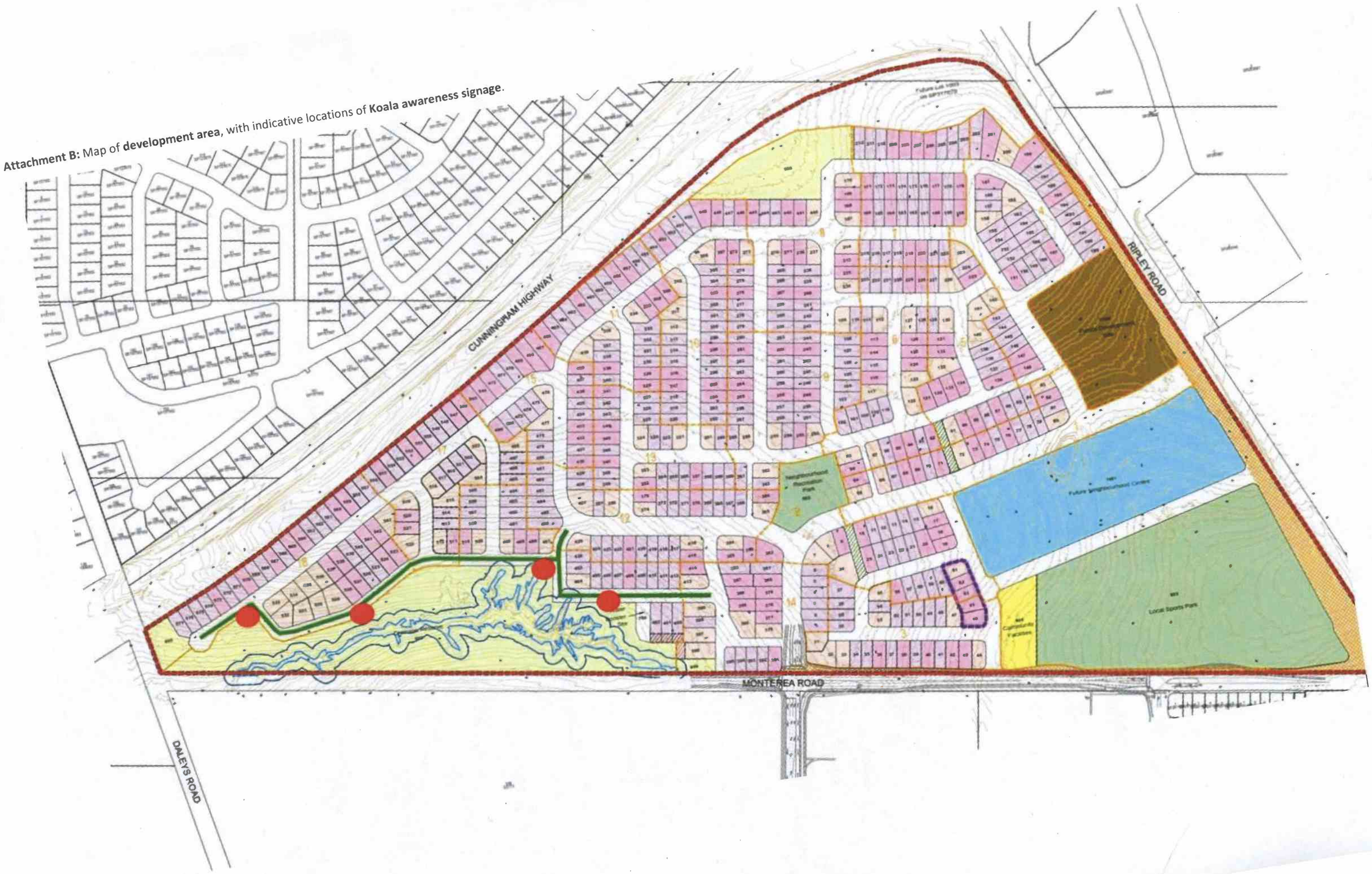
N

Scale (A4): 1:9,000 [GDA 1994 MGA Z56]

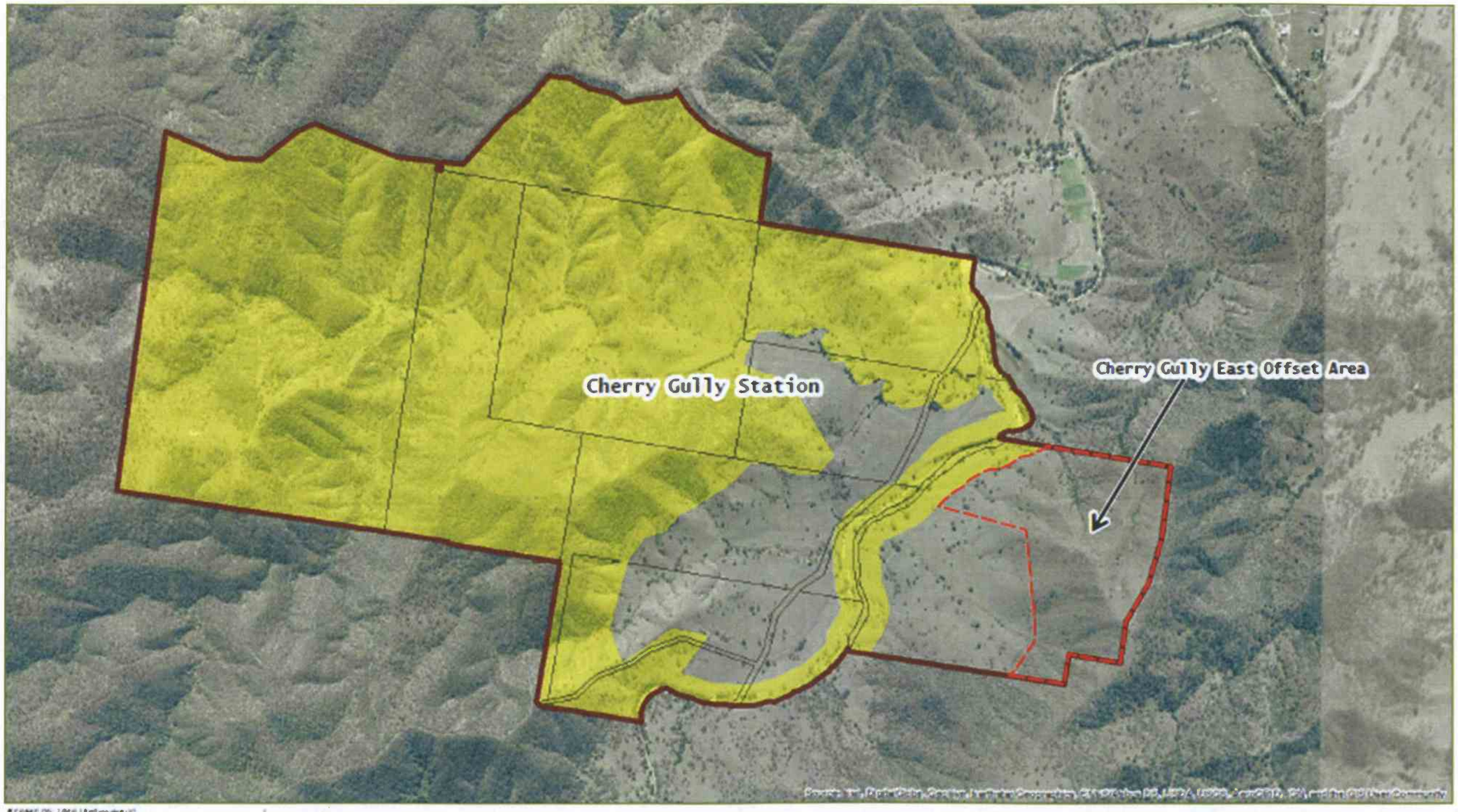
saunders havill group

Layer Source: © State of Queensland (Department of Natural Resources, Mines and Energy) 2019; Aerial (Nearmap 2019)

Attachment B: Map of **development area**, with indicative locations of **Koala awareness signage**.



Attachment C: Map of the **Cherry Gully East Offset Area**.



PART B – OFFSET MANAGEMENT PLAN 2022

One Environment

CHERRY GULLY EAST

OFFSET AREA MANAGEMENT PLAN 2022

Cherry Gully East – Offset Area Management Plan	Title
OEs1:v1.2(a) – February 2022	OMP Reference
EPBC 2019/8539	EPBC Reference
HB Doncaster Pty Ltd	Client
9th February 2022	Date

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Figures

Tables

Plans

Glossary / Abbreviations

ACR	Annual Compliance Report
Commencement of the Management Activites	4 March 2021
Conservation Gain	EPBC Act Policy – *maintains or increases the viability or reduces threats or damage to a protected matter*
DAF	Queensland Government Department of Agriculture and Fisheries
DAWE	Commonwealth Government Department of Agriculture, Water and the Environment
DES	Queensland Government Department of Environment & Science
DEHP	Queensland Department of Environment and Heritage (Now DES)
EPBC	*Environment Protection & Biodiversity Conservation Act 1999*
EPBC Act Offset Policy	*Environment Protection & Biodiversity Conservation Act 1999 – Environmental Offset Policy – October 2012 (Australian Government)*
EDQ	Queensland Government Department of Economic Development Queensland
EMZ	Environmental Management Zone (The Offset Area is described in 1 EMZ)
Functional Loss	Where habitat is not being directly cleared or removed, however due to barriers, threats or fragmentation will no longer function for the use of the protected matter.
GHFF	Grey-headed Flying-fox
GHFF FHA	Grey-headed Flying-Fox Foraging Habitat Assessment – Hybrid based assessment tool for valuing GHFF foraging habitat at the impact and offset site.
MNES	Matters of National Environmental Significance
MQHA	Modified Quality Habitat Assessment – Tool for assessing koala habitat value based on an amalgamation of the Queensland Government & Commonwealth Government Offset Assessment Criteria.
Offset Provider	Somerset Offset Solutions Pty Ltd (One Environment)
Offset Land	Cherry Gully East (66 ha)
Offset Area	66ha – portion within the Offset Land committed to the Offset Outcomes
Offset Period	Maximum of 20 years
OMP / Offset Management Plan	Cherry Gully East – Offset Area Management Plan 2022 [Ref: OEs:1.2(a) – dated 09/02/22]
OAAR	Offset Area Annual Report (9 February anniversary date)
PDA	Priority Development Area (As declared by the Queensland Government)
PD	Preliminary Documentation Submission by the Saunders Havill Group 2020
Proponent	HB Doncaster Pty Ltd
SPP	State Planning Policy (Queensland Government)
The Guide	*Environment Protection & Biodiversity Conservation Act 1999 – Environmental Offset Policy – October 2012 (Australian Government) – Assessment Guide*
GTHQ	Guide to determining Terrestrial Habitat Quality (Queensland Government – Version 1.2 April 2017)
Ripley Road Project	Ripley Road, Ripley, Queensland (EPBC 2019/8539)
UQ	University of Queensland
VDEC	Voluntary Declaration (Offset Area legally secured on 2 March 2021)
VMA	*Vegetation Management Act 1999*
WONS	Weeds of National Significance

1. Introduction

The Proponent has engaged the Offset Provider to coordinate and deliver a Koala and Grey-headed Flying-fox habitat environmental offset as compensation for significant impacts to Matters of National Environmental Significance (**MNES**) as part of the Ripley Road, Ripley Residential Development (**Ripley Road Project**). An offset prepared in accordance with the Commonwealth Government's, Department of Agriculture, Water and the Environment (**DAWE**) *EPBC Act 1999 – Environmental Offset Policy – October 2012* (**EPBC Offset Policy**) is a requested requirement of the Preliminary Documentation submission for EPBC Application 2019/8539.

The Offset Provider will deliver the overall *'conservation gain'* for the species as part of a single site offset solution located on Cherry Gully East (**Offset Site –** Refer to PLAN 1). The offset site forms part of the Avonvale and Cherry Gully stations which contains other EPBC approved offsets. Approximately 66 ha of the Offset Site will be legally secured as direct compensation for impacts on the Ripley Road Project (66 ha – **Offset Area**). The Offset Site is located approximately 5km west of the Toogoolawah Township and 53km north west of Brisbane. The land holding is entirely based within the Local Government jurisdiction of the Somerset Regional Council (Formerly the Esk Shire Council).

This Cherry Gully East Offset Area Management Plan 2022, dated the 9th February 2022 (**Offset Management Plan / OMP**) outlines the existing values and proposed management actions to be completed at the Offset Site. The OMP does not include detailed analysis on the value or assessment of the actions, risks or threats at the offset land relative to the *Offset Assessment Guide* (**The Guide**). A response to The Guide is provided within the technical chapters of the Ripley Road Project Preliminary Documentation Report (*Saunders Havill Group, 2020*). This OMP focuses on the direct management actions aligning with the principles and structure outlined in the DAWE's *Environmental Management Plan Guidelines* (2014).

The vegetation surrounding the offset site is known to support Koalas, while the offset site retains a number of key existing threats and supports areas with all necessary essential habitat factors for the reinstatement and creation of new high functioning koala habitat. Similarly, the dominant tree species existing and proposed for revegetation on the land are highly ranked as food species for the Grey-headed Flying-fox and located within 16.6km of the Esk and 35km of the Lowood Flying-fox camps, both of which report consistently high numbers (>3,000-4,000) of animals. The portion of the offset landholding proposed for offset in this OMP is predominantly located within the strategically designated bioregional biodiversity corridor of the recently adopted *ShapingSEQ - South East Queensland Regional Plan 2017*, (State of Queensland, 2017). The corridor mapping in this document is non regulatory, however aspirationally is included through the Offset Site to link the *Deongwar State Forest*, *Esk National Park* in the south to the *Bernarking State Forest* and *Mount Binga National Park* to the north.

Cherry Gully East did not form part of the other offset solutions, and as such, it is still utilised for cattle grazing. The Offset Provider has entered into commercial terms to legally secure, improve and long-term manage 66 ha of land at Cherry Gully East for the sole purpose of delivering the environmental offset outcomes documented in this OMP.

1.1. Purpose of Offset Management Plan

The Offset Site and Offset Area have been selected and designed to compensate for 100% of the Ripley Road Project significant impact on Koala and 100% of the impact on Grey-headed Flying-fox foraging habitat. The offset proposal is a direct land-based solution which consists entirely of establishment of new habitat Importantly the HB Doncaster offset will combined with existing approved and commenced offsets on the land to consolidate a large conservation outcome for a number of protected matters.

The Purpose of this Offset Management Plan (OMP) is to:

1. Provide details and timing on the legally binding mechanism to secure the Offset Area values at the Offset Site.
2. Provide baseline values for a range of key habitat quality indicators in the offset Environmental Management Zone (EMZ) for repetitive use in measuring and monitoring habitat improvement commitments.
3. Outline the specific management actions and tasks to be undertaken in the EMZ for managing threats, pests and improving Koala and Grey-headed Flying-fox habitat values.
4. Outline restrictions and operational controls on existing agricultural and grazing land uses.
5. Establish robust and scientifically driven metrics, monitoring and reporting procedures to ensure the offset delivery achieves the predicted *conservation gain* for the species.
6. Assign responsibilities for tasks, actions, operational controls, measuring, reporting, corrective actions and funding for all works at the offset land.
7. Identify, account for and manage risks associated with all or part of the offset outcomes not succeeding (Adaptive Management).

1.2. Offset Management Plan Limitations

This document is an Offset Management Plan (OMP). The OMP aligns with relevant principles and sections of the Environmental Management Plan Guideline, 2014, Australian Government, Department of Environment, however is designed for on-ground implementation and not specific value assessment against the EPBC Offset Assessment Guide. The assessment of values for Risk of Loss and Quality are included and justified within the Preliminary Documentation (Saunders Havill, 2020) submission for the Ripley Road project. Quality value changes in this assessment are derived from specific actions listed in this OMP and thus where applicable assessment metrics have been listed in the measurement targets of Management Action Tables included in Section 5.0.

Assessment methodologies have remained consistent with this broader approved EPBC offsets. Survey methods deployed over the land incorporate standard practices from the Guide to Determining Terrestrial Habitat Quality: A toolkit for assessing land based offsets under the Queensland Government Offsets Policy, Version 1.2, April 2017, Queensland Government, combined with the specific stocking rate factors from the How to use the offsets assessment guide, Australian Government (Combined in this OMP to be referred to as the Modified Quality Habitat Assessment – MQHA for the Koala and the Grey-Headed Flying-fox Foraging Habitat Assessment GHFF FHA).

1.3. Responsible Person(s) for this OMP

Excluding the regulatory role completed by the Commonwealth Government for the assessment and approval of the offset and the Queensland Government for registering and declaring the Voluntary Declaration the following entities retain key responsibilities for implementation of this OMP:

1. Project Proponent – Contact Mr. Peter Johnson – National Development Director

The Proponent is the developer of the Greater Ripley Master Planned Community Project (**Ripley Road Project**). Responsibilities include:

- Obtain and comply with all conditions of the EPBC approval for the project.
- Enter into a commercial agreement with One Environment for the delivering of EPBC compliant offsets.
- Fund all management actions / tasks as listed in the approved OMP at the offset land.
- Report on the EPBC approval in Annual Compliance Reports or as triggered within conditions.

2. Offset Provider – Mr. Darren Jonsson

The Offset Provider a purpose-built environmental offset company which is responsible for:

- All on-ground implementation of the OMP.
- Monitoring and reporting on OMP actions, tasks and outcomes.
- Appointment of relevant experts or experienced contractors to undertaken specified tasks within the Offset Area.
- Corrective actions for any non-compliance activities.
- Stakeholder relationships – Adjoining grazing operations, Somerset Regional Council, local school and community environmental groups.
- Review, Amendment and Adaptive Management changes of the approved OMP over the life of the offset.

3. Saunders Havill Group (Environmental Consultant) – Mr. James Gautrey

Saunders Havill Group provide the tertiary trained and experienced field ecologists in support of approval and ongoing compliance for the offset land and Environmental Management Zones. Responsibilities include:

- Collection, interrogation and analysis of robust scientifically justified survey data for use as the baseline values at the offset site.
- Repeating surveys as per the currency in this Offset Management Plan or as per conditions of approval for measuring improvement outcomes.
- Preparation and lodgement of the Legally Binding Mechanism (VDEC) with the Queensland Government.
- Audit offset reports against approval conditions as part of the Ripley Road Project Annual Compliance Reports.

1.4. Structure of this OMP

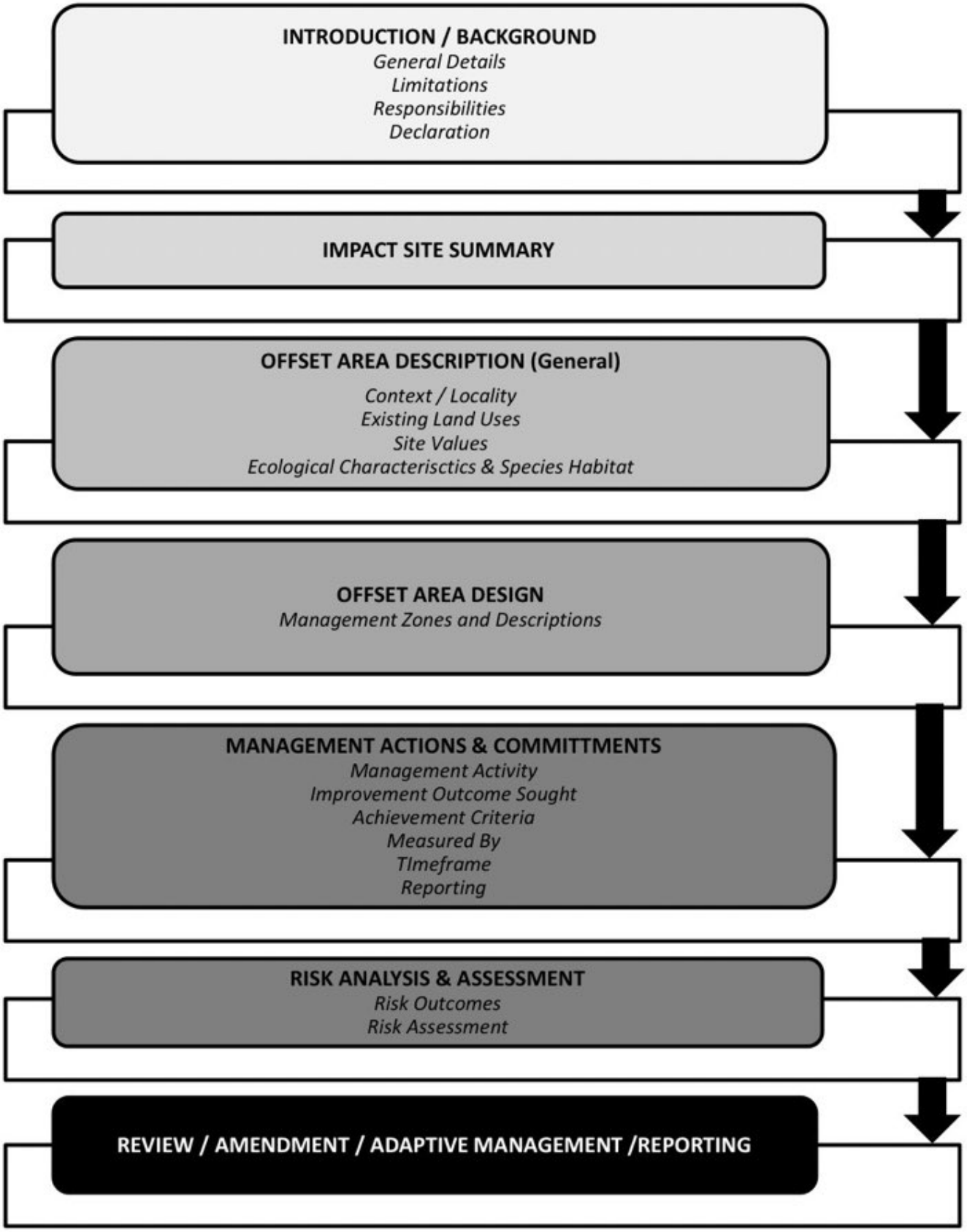
There are seven (7) core chapters to this OMP as highlighted in FIGURE 1 – OMP Structure Diagram. **Chapter 1** outlines background information to the OMP setting the overall principles designed to be achieved at the Offset Site. **Chapter 2** provides a brief context to the Ripley Road project and the impacts triggering the need for compensation of Koala and Grey-headed Flying-fox habitat.

Sections 3 and **4** cover the general suitability of the Offset Land and discuss the specific design of Environmental Management Zone within the Offset Area. **Chapter 5** is wholly concerned with 7 separate management action areas itemised through a tabulated format. The management tables have been drafted as a stand-alone template that can be extracted from the broader document for direct implementation on-site.

Section 6 outlines a number of key risks and threatening processes that were considered in the preparation of the management tables.

The final chapters of this OMP (**section 7**) outline the adaptive management principles adopted for corrective actions and the specific Offset Area Management Plan Reporting requirements.

Figure 1: OMP Structure Diagram



1.5. OMP Declaration of Accuracy

Declaration of accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed _____

Full name (please print) Darren Jonsson

Organisation (please print) One Environment

Date 09 / 02 / 2022

491 Providing false or misleading information to authorised officer etc.

(1) A person is guilty of an offence if the person:

(a) provides information or a document to another person (the ***recipient***); and

(b) knows the recipient is:

(i) an authorised officer; or

(ii) the Minister; or

(iii) an employee or officer in the Department; or

(iv) a commissioner;

performing a duty or carrying out a function under this Act or the regulations; and

(c) knows the information or document is false or misleading in a material particular.

(2) The offence is punishable on conviction by imprisonment for a term not more than 1 year, a fine not more than 60 penalty units, or both.

Note: Subsection 4B(3) of the *Crimes Act 1914* lets a court fine a body corporate up to 5 times the maximum amount the court could fine a person under this subsection

1.6. Legally Securing the Offset Area

The V-DEC was lodged and legally secured by evidence of encumbrance on Registered Land Title on 2 March 2021. The legal security of the offset area occurred prior to the commencement of any clearing works on the Impact Site (Ripley Road Project) (which commenced on 12 July 2021).

The legally securing of the land will be made through declaring the areas as having High Nature Conservation Values. Based on the VMA criteria the Offset Area will be declared as achieving items (a), (c), (d) and (f) below:

To be considered for declaration as an area of high nature conservation value, the area must be one or more of the following:
a) a wildlife refugium—an area where a species or a group of species has retreated due to a threatening process (e.g. climatic change)
b) a centre of endemism—an area containing concentrations of species that are largely restricted to the area
c) an area containing a vegetation clump or corridor that contributes to the maintenance of biodiversity
d) an area that makes a significant contribution to the conservation of biodiversity
e) an area that contributes to the conservation value of a wetland, lake or spring
f) another area that contributes to the conservation of the environment.

2. Impact Site (Summary)

The impact site is located at Ripley Road, Ripley, Queensland, and is located approximately 6 km south of the Ipswich Town Centre. The north-east and north-west subject site boundaries are bound by major arterial roads (Ripley Road and Cunningham Highway), while to the south-east a recent residential development is under construction, and to the south-west exists vacant bushland, of which, all parcels that share a common boundary with the site possess EPBC determinations (EPBC 2010/5638 & EPBC 2012/6644). The land comprises of the following cadastral allotments (refer to FIGURE 2 – Impact Site Allotments & Aerial):

- Lot 2 on RP196154;
- Lot 1 on RP196152;
- Lot 1 on RP196150;
- Lot 342 on S3173;
- Lot 343 on S3173; and
- Lot 344 on S3173.

The land tenure is freehold and is located within Ipswich City Council Local government jurisdiction, however is included in the Declared Ripley Valley Priority Development Area (**PDA**) where it retains an *urban living* land use zoning (refer to TABLE 1 - Impact Site Details).

2.1. Proposed Action

The Ripley Valley PDA master planned residential development covers 56.20 ha (of which all 56.20 ha contains habitat) of the 56.20 ha site and will provide approximately 570 residential lots, local sports park, neighbourhood recreational park, environmental park, community facilities and a future neighbourhood centre (refer to FIGURE 3 – Proposed Plan of Development for the Ripley Road Project).

2.2. MNES Impact Summary

The assessment of the construction and operational impacts associated with the proposed development indicate that the entirety of the site will either be directly cleared or indirectly 'functionally lost'. Residual impacts will be created from the direct loss of approximately 53 hectares of critical Koala habitat and Grey-headed Flying-fox foraging habitat and the additional 'functional loss' of 3.20 hectares of critical Koala habitat and Grey-headed Flying-fox foraging habitat.

Results of the Modified Habitat Quality Assessment (**MHQA**) tool indicate that the critical Koala habitat on the impact site scored a value of 5 (out of 10), while the results of the Grey-headed Flying-fox Foraging Habitat Assessment (GHFF FHA) tool indicate that the GHFF foraging habitat on the impact site scored a value of 5 (out of 10). Refer the Ripley Road, Ripley Residential Development - Preliminary Documentation, *Saunders Havill Group, 2020.*

Overall, the Ripley Road Development will see the direct removal or fragmentation of approximately 53 hectares of *critical habitat* for the Koala and *foraging habitat* for the GHFF, and the additional *'functional loss'* of 3.20 hectares

of Koala habitat and Grey-headed Flying-fox foraging habitat. As such, the residual impacts on the Koala as a result of the development will be the loss and 'functional loss' of 56.20 hectares of critical habitat with a MHQA score of 5 and the residual impact on the GHFF as a result of the development will be the loss of 56.20 hectares of foraging habitat with a GHFF FHA score of 5.

Table 1: Impact Site (Summary Details)

Attribute	Site Summary Details
EPBC Reference	2019/8539
Locality	Ripley – Ripley Valley Priority Development Area
Lot / Plan	Lot 2 on RP196154, Lot 1 on RP196152, Lot 1 on RP196150, Lot 342 on S3173 Lot 343 on S3173 and Lot 344 on S3173.
Land Size	56.20 hectares (138.87 acres)
Proposal Description	The proposed master planned residential development covers the entirety of the 56.20 ha site and will provide approximately 570 residences Ripley Valley region.
Impact Summary	Removal of approximately 53 ha of critical Koala habitat and the 'functional loss' of 3.20 ha of critical Koala habitat at a MHQA score of 5. Removal of approximately 53 ha of GHFF foraging habitat and the 'functional loss' of 3.20 ha of foraging habitat at a GHFF FHA score of 5.
Mean Temperature Range (°C)	13.9 – 27.3°C
Mean Annual Rainfall (mm)	878.50 mm
2019 Rainfall (mm)	377 mm
Topography	The referral area gently slopes from a high point in the central aspect of the site (77 m AHD) to a low point in the south-western aspect of the site associated with the mapped watercourse (54 m AHD) and to another low point in the south-eastern corner of the site (48 m AHD).
Soils (Land Zone Classifications)	Land Zone 3 – Alluvium (river and creek flats) Land Zone 9 – 10 – Undulating country on fine grained sedimentary rocks and sandstone ranges
VMA Vegetation Classification	Category X (non-remnant) Category B (remnant) ('least concern')
Broad Vegetation Group Koala Habitat Suitability (Rhodes *et al.* 2015)	BVG 10b 'low suitability' (majority of impact site)

Dominant Tree Species	*Corymbia citriodora* (Spotted Gum), *Eucalyptus crebra* (Narrow-leaved Ironbark) *Eucalyptus tereticornis* (Forest Red Gum) and *Corymbia tessellaris* (Moreton Bay Ash).
MHQA Results	Koala Habitat Score of 5 / 10
GHFF FHA Results	Grey-headed Flying-fox Foraging Habitat Score of 5 / 10
Distance to Offset Site	76.50 km

Legend

Qld DCDB

Referral area

Figure A2

Site Aerial

HB Doncaster Pty Ltd

File ref. 9780 E Figure A2 Site Aerial A
Date 2/04/2020
Project Ripley Road, Ripley

0 50 100 200 300 400 *m*

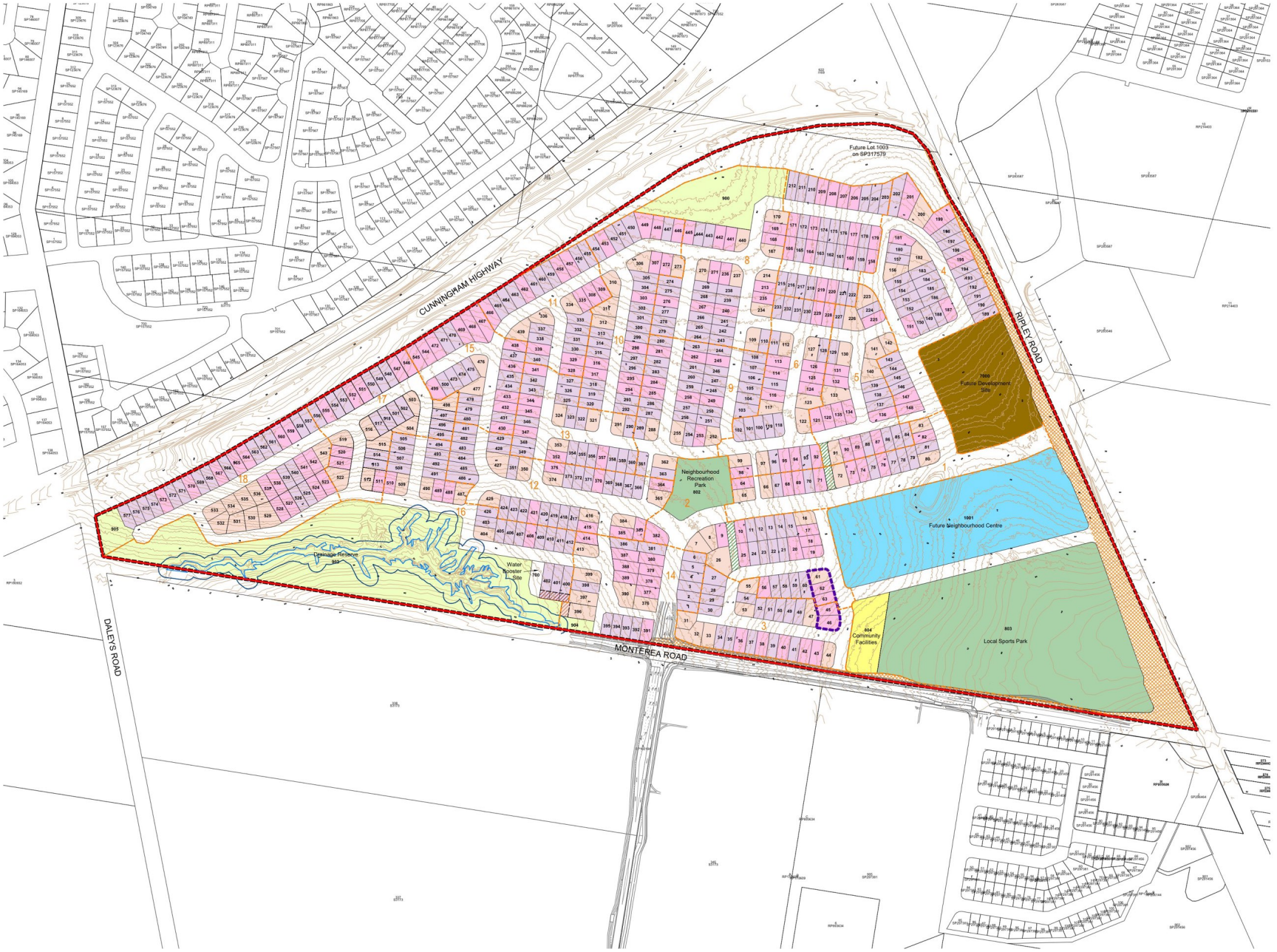
N

Scale (A4): 1:9,000 [GDA 1994 MGA Z56]

saunders havill group

Layer Source: © State of Queensland (Department of Natural Resources, Mines and Energy) 2019, Aerial (Nearmap 2019)

MASTER PLAN



NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

This plan was prepared as a provisional layout to accompany a development application. 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 subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

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.

LEGEND

- Site Boundary
- Major Contour (1.0m interval)
- Minor Contour (0.25m interval)
- Staging Boundary
- Plan of Development Area
- Possible Community Facilities Site - 4155m²
- 10m Wide Building Exclusion Zone
- Pedestrian Connection
- Top of Bank
- 10m Offset - Top of Bank

RESIDENTIAL ALLOTMENTS	Lots	%
12.5 - <14m frontage	308	53.3%
14m - <16m frontage	174	30.2%
>16m frontage & Irregular Lots	95	16.5%
Total No. of Lots	577	
Site Area	55.966 ha	
Drainage Reserve	5.49 ha	9.9%
Neighbourhood Recreation Park (Lot 802)	5047 m²	0.9%
Local Sports Park (Lot 803)	5.073 ha	9.1%
Community Facilities (Lot 804)	4000 m²	0.7%
Future Neighbourhood Centre	3.250 ha	5.8%
Future Development Site	1.69 ha	3.0%
Road Resumption / Dedication	1.874 ha	3.3%
Future Lot 1003 on SP317579	1.926 ha	3.4%

RP DESCRIPTION: Lot 2 on RP196150, Lot 1 on RP196152, Lot 2 on RP196154 & Lots 342 - 344 on S3173

SCALE @A1 1:2500 @A3 1:5000 - LENGTHS ARE IN METRES

20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

saunders havill group

HB DONCASTER PTY LTD

255-331 MONTEREA ROAD & 311-395 RIPLEY ROAD, RIPLEY ● 19/06/2020 ● 9780 P 09 Rev P-PRO 01

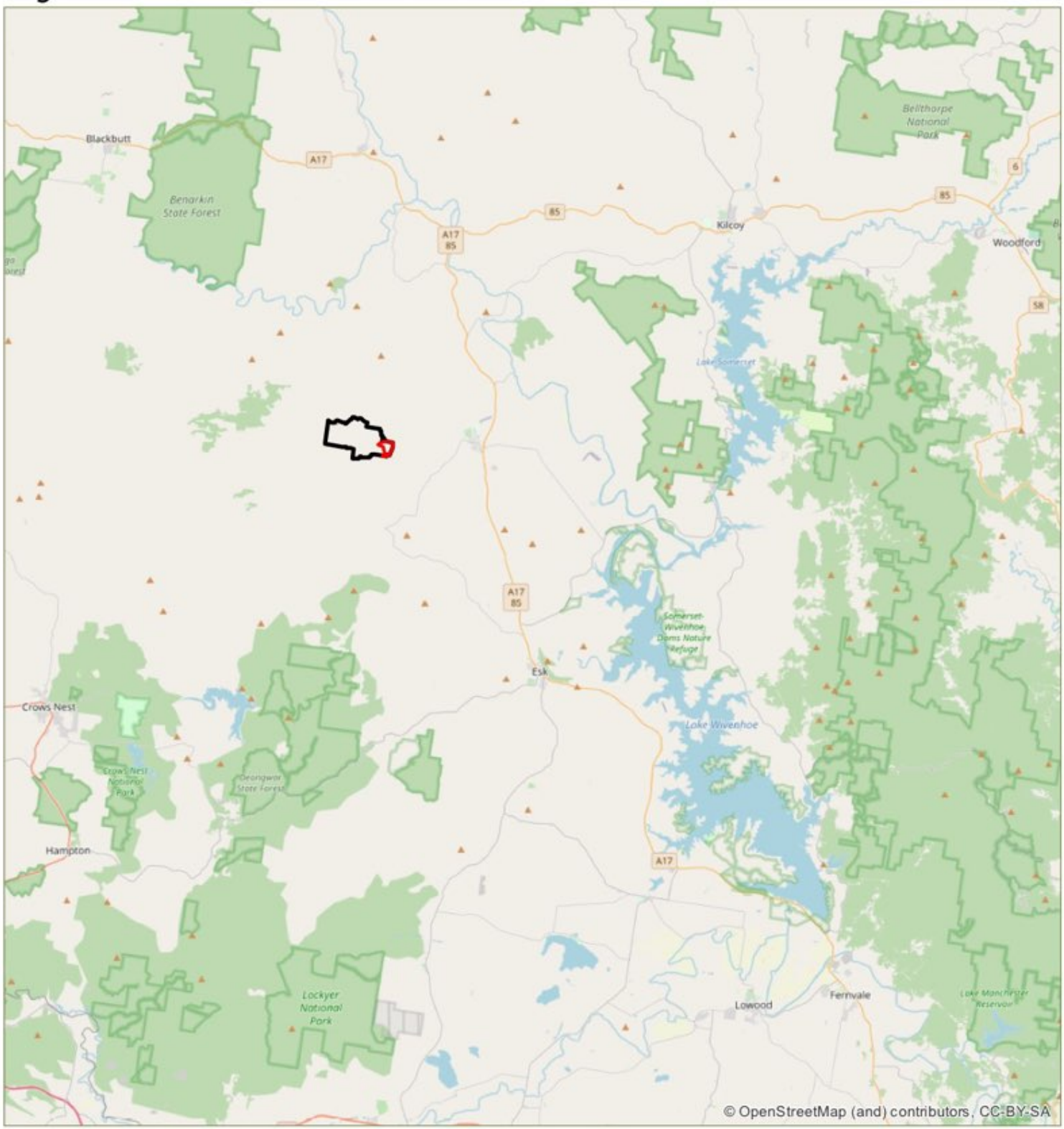
3. Offset Site (Summary)

Cherry Gully East forms part of the Cherry Gully Station which is located on Littles Road, Toogoolawah. The property is within the Somerset Regional Council and is approximately 5.8 km directly west of the Toogoolawah township. Cherry Gully East is balance land within the cadastral boundaries of the Avonvale and Cherry Gully Station approved to compensate for the significant residual impacts associated with another EPBC approval (Refer FIGURE 4 - Offset Site Context). Refer to TABLE 2 - Offset Site Details including the cadastral allotment descriptions. The land tenure of the Cherry Gully East is freehold, where it retains a *rural* land use zoning under the Somerset Regional Council planning scheme. The offset site can be accessed via Littles Road from the north which is a rural road off Ivory Creek Road. (refer to PLAN 1 – Offset Site Allotments & Aerial). The Offset Site is located 76.50 km north-west of the impact site (refer to PLAN 2 – Impact / Offset Site Context).

Cherry Gully East did not form part of the previously approved offset solution, and as such, it is still utilised for cattle grazing.

(Site Photos – Cherry Gully East)

Figure 4 *Offset Site Local Context*



Legend

Cherry Gully Station

Cherry Gully East offset area

One Environment

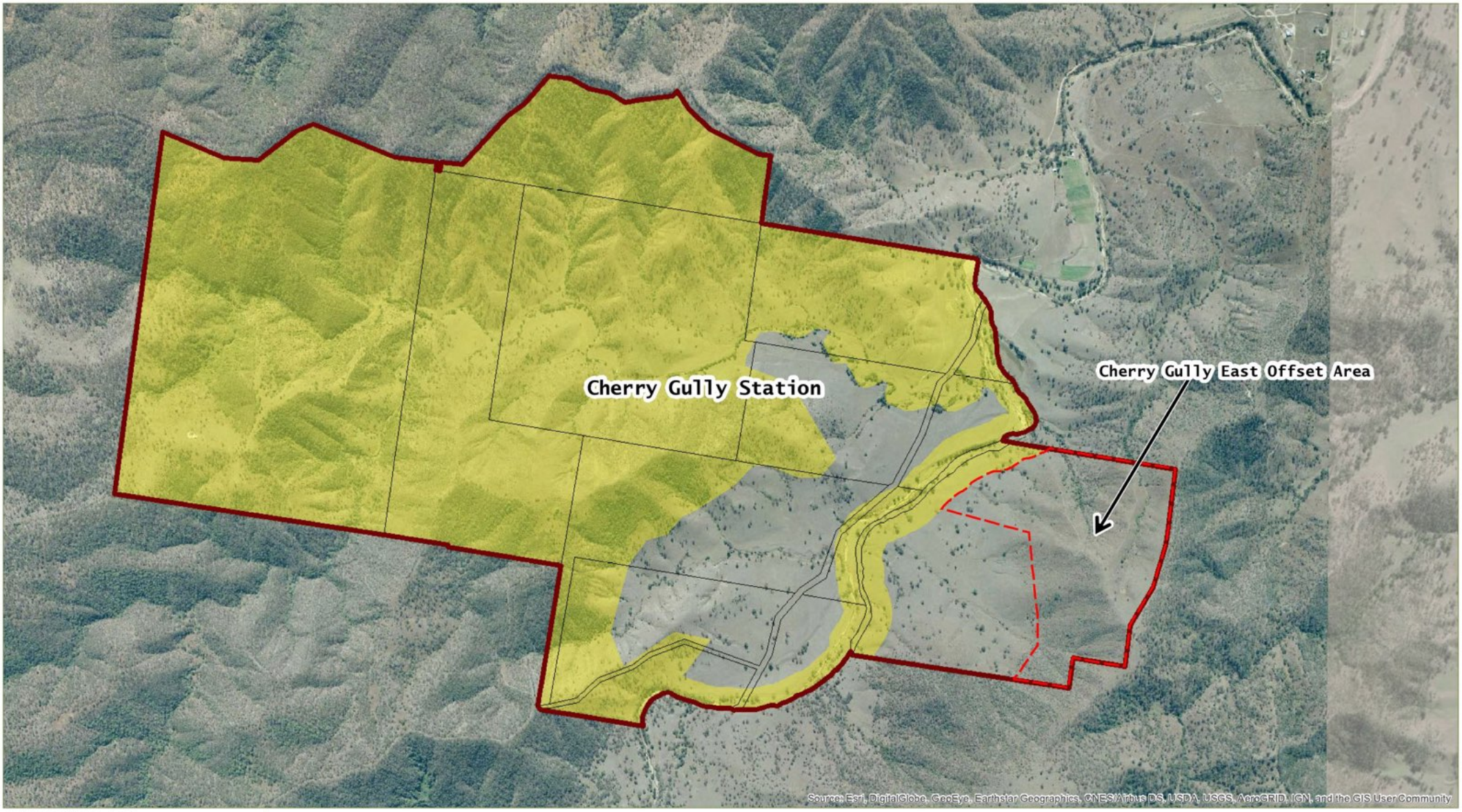
Cherry Gully Station (East) - Offset Management Plan (OEs2)

0 1 2 4 6 8 10 km

26/06/2020 *1:400,000*

References - © State of Queensland (Department of Natural Resources, Mines and Energy) 2020

PLAN 1 - Site Boundaries



FILE NAME: OEs_2 PLAN 1 Site Boundaries V1
VERSION 1

Cherry Gully Station (East) -
Offset Management Plan (OEs2)

0 200 400 800 m

26/06/2020 1:17,500

N

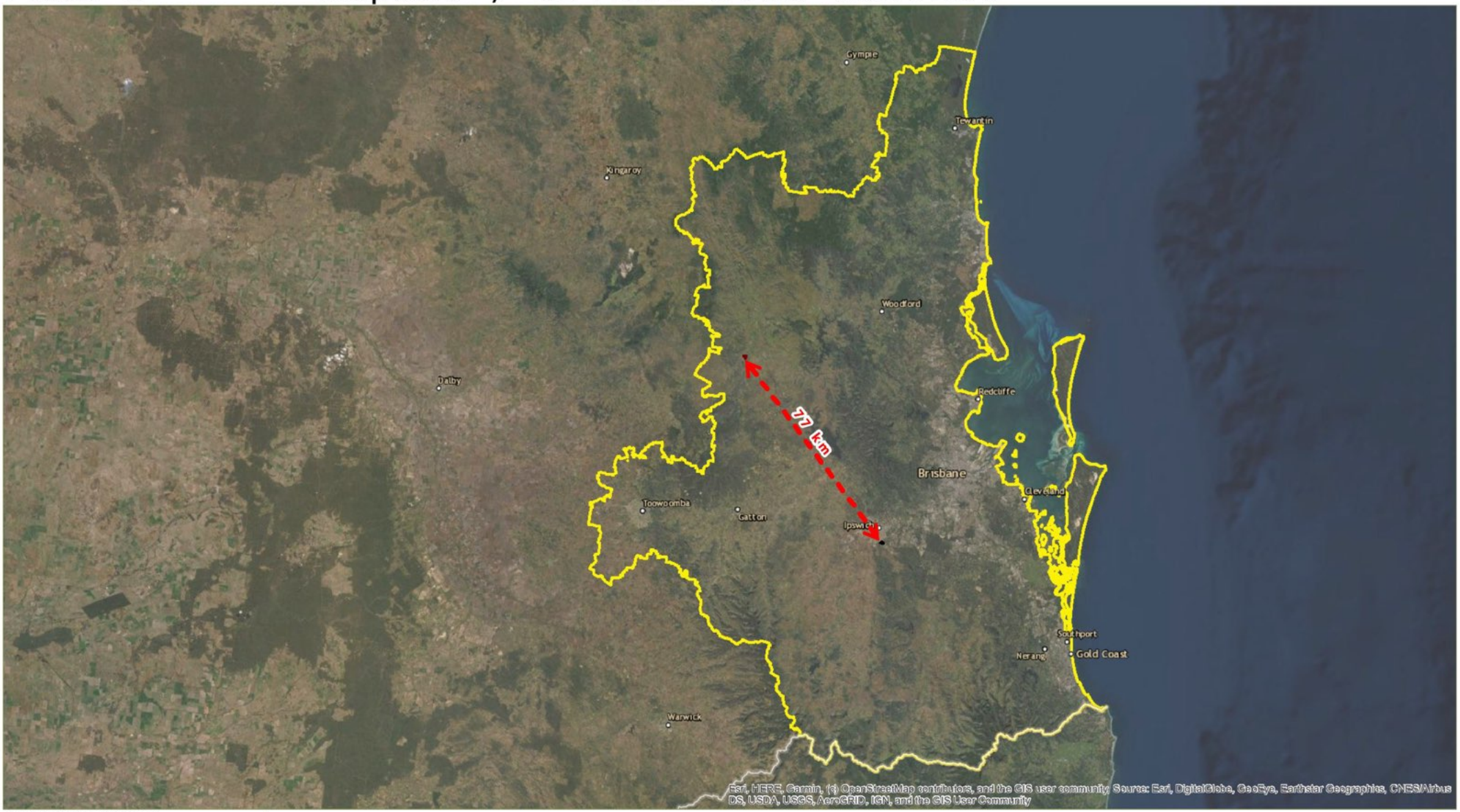
References - © State of Queensland (Department of Natural Resources, Mines and Energy) 2020

Legend

- Cherry Gully Station
- Offset site alloments
- Cherry Gully East offset area
- Existing Cherry Gully Station offset area

One Environment

PLAN 2 - Impact / Offset Site Context



FILE NAME: OEs_2 PLAN 2 Impact_Offset Context V1

VERSION 1

Cherry Gully Station (East) - Offset Management Plan (OEs2)

0 5 10 20 30 40 50 km

26/06/2020 *1:1,250,000*

N

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References - © State of Queensland (Department of Natural Resources, Mines and Energy) 2020

Legend

- South East Queensland Boundary
- Cherry Gully East offset area
- Impact site

One Environment

Table 2: Offset Site (Summary Details)

Attribute	Site Summary Details
EPBC Reference	2019/8539
Locality	Suburbs of Biarra / Toogoolawah In the Somerset Regional Council Area
Lot / Plan	Lot 1 on CSH1549
Land Size	132.6 hectares (327.66 acres)
Proposed Offset Size	66 hectares
Mean Temperature Range (°C)	13.5 – 26°C
Mean Annual Rainfall (mm)	987 mm
2019 Rainfall (mm)	431.6 mm (Somerset Region was declared a drought zone in 2019)
Topography	Undulating country ranging from a floodplain adjoining Ivory Creek, rising to a steeper ridgeline along the eastern boundary.
Soils (Land Zone Classifications)	Land Zone 11 – Hills and lowlands on metamorphic rocks
VMA Vegetation Classification	Category X (non-remnant)
Broad Vegetation Group Koala Habitat Suitability (Rhodes *et al.* 2015)	BVG 13c 'suitable' (majority of offset site)
Dominant Tree Species	*Eucalyptus crebra* (Narrow-leaved Ironbark), *Eucalyptus tereticornis* (Forest Red Gum) and *Corymbia erythrophloia* (Variable-barked Bloodwood)
Baseline MHQA Results	EMZ 1 – Koala Habitat Score of 3
Baseline GHFF FHA Results	EMZ 1 – GHFF Foraging Habitat Score of 3
Distance to Impact Site	76.50 km

3.1. Offset Site Values

The offset land vegetation at Cherry Gully East comprises of open grazing, non-remnant vegetation. The non-remnant vegetation consists of cleared grazing land and sapling regrowth patches. Direct and indirect evidence of feral dogs was recorded throughout the offset site.

The open grazing country within Cherry Gully East is dominated by cleared cattle grazing land with limited to no canopy trees. The entire 132.6 ha site consists of open grazing country. This non-remnant area extends from the foothills and flat of Ivory Creek on the western boundary of Lot 1 on CSH1549 up to the peak of Cherry Gully East in the eastern aspect of the site.

Where scattered juvenile regrowth canopy trees were observed , the species consist of *Eucalyptus crebra* (Narrow-leaved Ironbark), *Corymbia erythrophloia* (Variable Barked Bloodwood) and *Eucalyptus tereticornis* (Forest Red Gum). Given the sparse, juvenile nature of the scattered canopy species, the vegetation does not meet the Queensland Government's definition of 'remnant' or 'high-value regrowth'. Where observed, the species within this vegetation community are representative of 'of concern' RE12.11.14. Further, cross-reference with the pre-clear regional ecosystem mapping indicates that the dominant regional ecosystem across the non-remnant vegetation area is 'of concern' RE12.11.14.

3.2. Koala Offset Values / Suitability

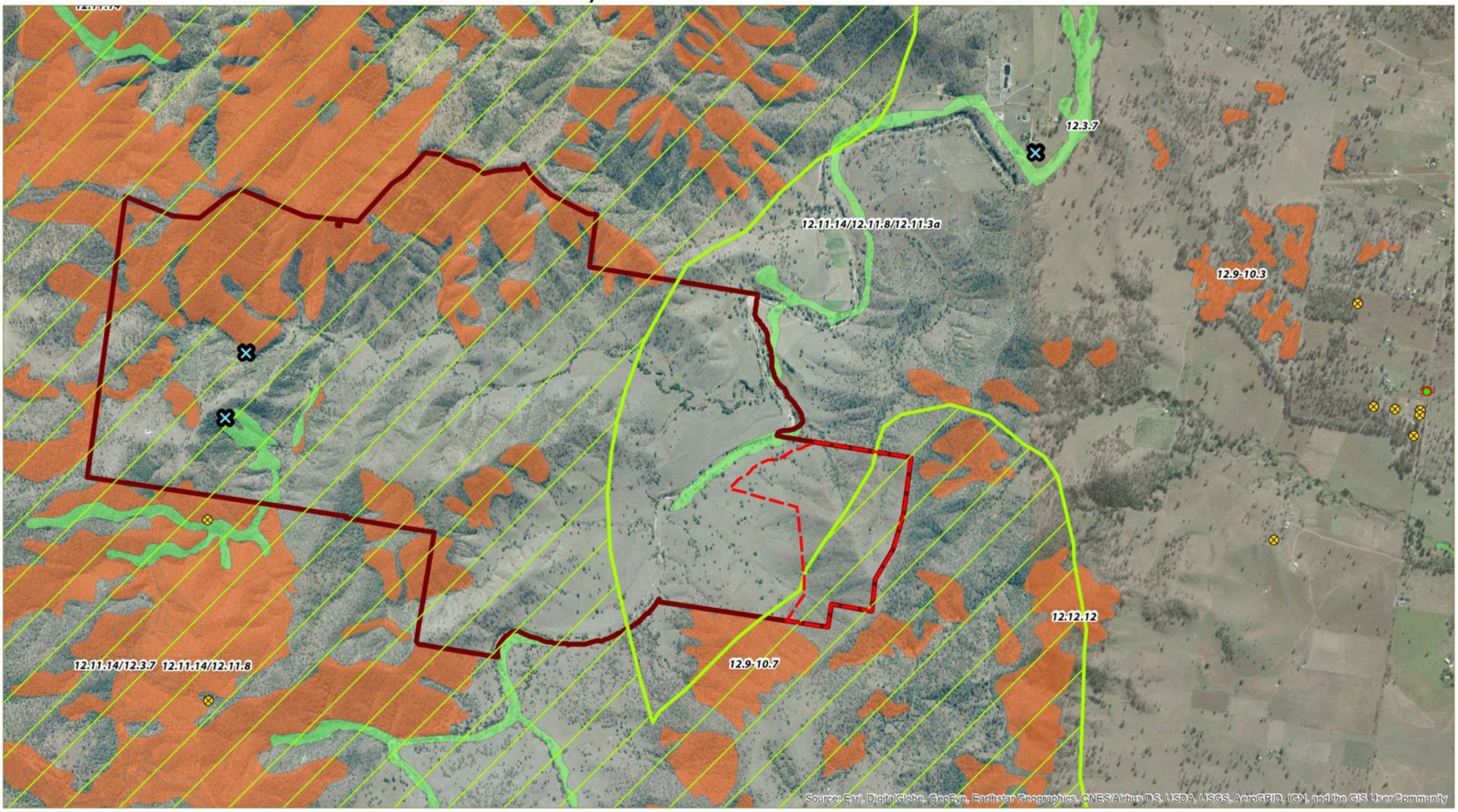
The Offset Area was assessed and approved by the DAWE based on the following:

- The Offset Site is located within South East Queensland and in the same Bioregional Zone as the impact site.
- Both areas share near identical mean temperatures, rain fall and slope parameters. By comparison the Offset Site includes substantially more areas containing land zones, Broad Vegetation Groups and species mix listed as "Highly Suitable" for the koala (*Rhodes, et al. 2015*).
- The Somerset Regional Council, particularly the sub area reflected by the former Esk Shire Council is known to support a sizable and healthy Koala population. The *University of Queensland (UQ) Koala Research Unit* has been conducting various bodies of research since 2013 into the region's koala population, with particular interest in its capacity to resist disease and thrive by comparison to most other locations in South East Queensland.
- The immediate Township of Toogoolawah (approximately 5 km from the Offset Site) has taken a local interest in the future of the region's koala population and using a combination of Government and Private land holders land tenures designated and planted out a new koala corridor on the edge of town.
- All works and the ongoing maintenance of the corridor is through volunteers including the Local State High School [A.R.R.O.W. (2018)].
- There is a total of 23 records (27 including site records) in close proximity to the offset site which is extremely high for a rural context.
- More broadly the Offset Site and particularly the component committed as the Offset Area is predominantly located within and adjoining the State-Wide Regional Terrestrial Corridor #29 mapped in the *ShapingSEQ - South East Queensland Regional Plan 2017*, (State of Queensland, 2017). The State-Wide Regional Terrestrial Corridor #29 extends south from Emu Creek to Mount Lawson capturing *Deongwar State Forest*, *Ravensbourne National Park* and *Lockyer National Park* (DEHP 2016).

Refer to PLAN 3 – Showing Contextual and Site Koala Values:

- Location of Bioregional Corridor Extent
- Suitable Habitat and Revegetation Locations for Koalas
- Local and Site Collected Records for the Koala

PLAN 3 - Contextual / Site Koala Values



FILE NAME: OEs_2 PLAN 3 Contextual Site Koala Values V1

VERSION 1

Avonvale & Cherry Gully Stations - Offset Management Plan (OEs2)

0 200 400 800 m

26/06/2020 *1:22,500*

N

References - © State of Queensland (Department of Natural Resources, Mines and Energy & Department of Environment & Science) 2020

Legend

- SEQ Regional Plan - Biodiversity Corridors
- Cherry Gully Station
- Cherry Gully East offset area
- Koala hospital incident location
- Qld Gov. NCA koala location record
- Koala survey - location record (previous ecology survey 2019)

VM regional ecosystem map v11 (Remnant Vegetation)

- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem

One Environment

3.3. Grey-headed Flying-fox Values / Offset Suitability

By comparison to research and precedence with the Koala, less is known on both impacts and offsets for Grey-headed Flying-fox, particularly when camps or roosting sites are not directly effected. Research notes scarcity of food sources particularly in the Winter and Spring periods as resulting in animal weight loss and seasonal movement of camp numbers (*Eby et al, 2008*). Tree species known to provide nectar, flower or fruit resources for the Grey-headed Flying-fox within 50km of a known population (Camp site) are considered to achieve the definition of *Foraging habitat critical to the survival* of the species.

The Offset Area was assessed and approved by the DAWE based on the following:

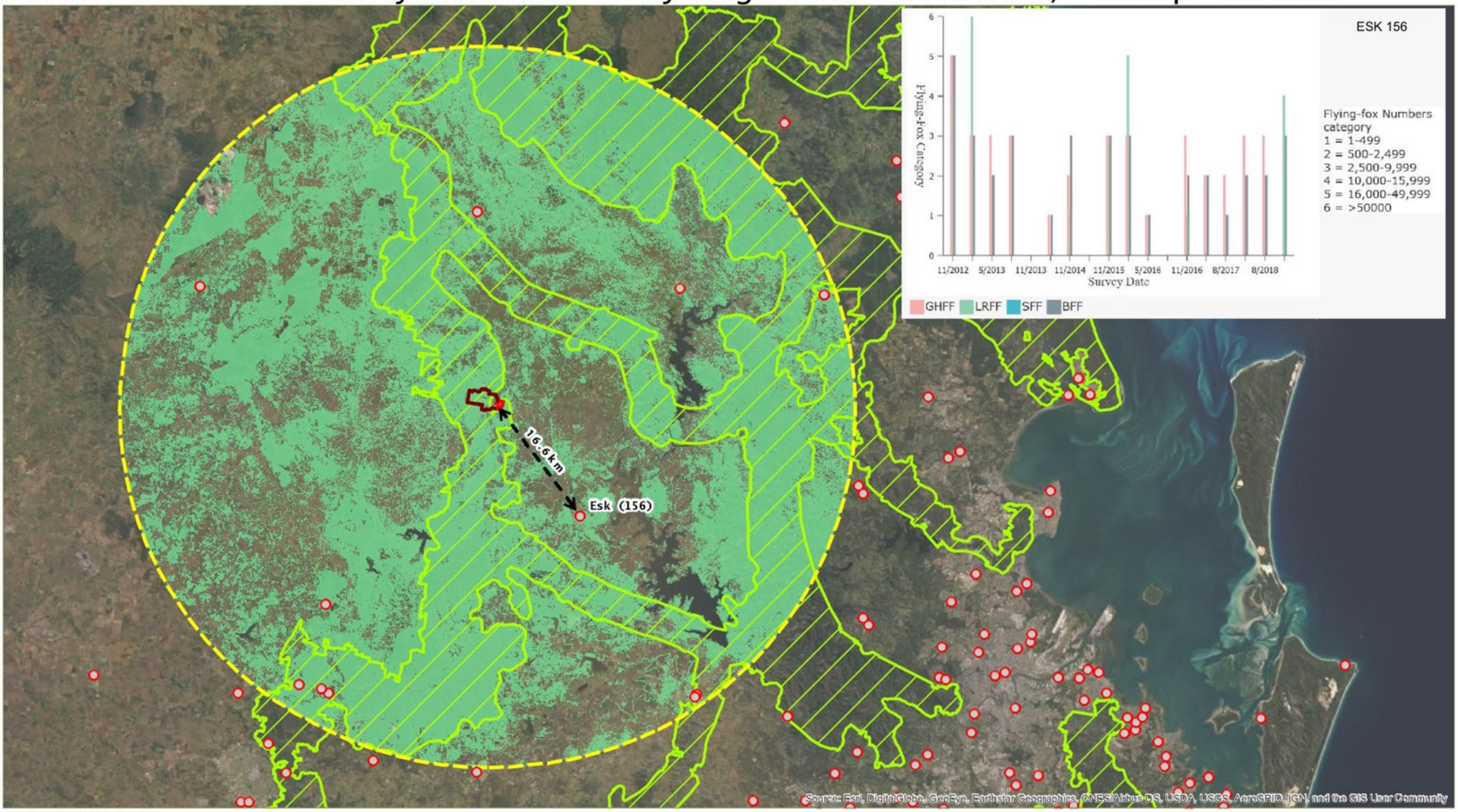
- A number of the dominant tree species existing and proposed to be planted on the Offset Site provide flower and fruit during the Winter and Spring periods (Refer TABLE 3).
- The Offset Site is located 16.6 km from the Esk (156) Camp Site, which on the Department of Environment's National Flying Fox Monitoring Viewer retains one of the larger and consistently recorded colonies of Grey-headed Flying-fox in South East Queensland.
- The Cherry Gully East Offset Site will result in the legally securing of large tracts of foraging habitat listed as habitat critical to the survival within close proximity to a major known camp site.
- The site already provides winter and spring flowering trees, which will be increased and expanded through rehabilitation and revegetation works. As noted under the koala values the offset site also occurs contextually amongst a large bioregional corridor where existing tracts of like habitat have been mapped.

Table 3: Winter / Spring Flowering – Fruiting Tree Species – Offset Site

Offset Site Tree Species	**FLOWERING PERIOD**	**SPRING**	**WINTER**
Eucalyptus crebra (narrow-leaved ironbark)	Throughout Year	yes	yes
Eucalyptus tereticornis (forest red gum)	June- Nov	yes	yes
Eucalytpus melanophloia (silver-leaved ironbark)	Oct-Mar	yes	-
Lophostemon confertus (brush box)	Sept- Feb	yes	-
Corymbia erythrophloia (variable-barked bloodwood)	Feb-April	-	-
Corymbia tessellaris (moreton bay ash)	Nov-Jan	yes	-
Corymbia citriodora (spotted gum)	April- Nov	yes	yes
Angophora subvelutina (broad leaved apple)	Nov-Dec	-	-
Eucalyptus siderophloia (ironbark)	May-Sept	yes	yes

Refer to PLAN 4 for Grey-headed Flying-fox Regional Ecosystems, the Esk (156) Camp site and corridor mapping around the Offset site.

PLAN 4 - Grey-headed Flying-fox Values / Camp Sites



FILE NAME: OEs_2 PLAN 4 GHFF Values Camp Site V1

VERSION 1

Avonvale & Cherry Gully Stations - Offset Management Plan (OEs1)

0 4 8 12 16 20 km

26/06/2020 *1:525,000*

N

References - © State of Queensland (Department of Natural Resources, Mines and Energy & Department of Environment & Science) 2019

Legend

- SEQ Regional Plan - Biodiversity Corridors
- Cherry Gully Station
- Cherry Gully East offset area
- Flying-fox Camp locations
- Grey-headed Flying-fox habitat - Remnant & Regrowth Potential
- 50km offset site buffer

One Environment

3.4. General Suitability EPBC Offset Policy Criteria

The following table is an extract from the approved EPBC Preliminary Documentation for the proposed action. The purpose of this table is to demonstrate how the approved offset meets the EPBC Offset Policy Criteria.

Table 4: Offset Site (General Suitability)

No.	Offset Suitability Criteria	Avonvale / Cherry Gully Stations Offset Area
1	*Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action*	The Offset Area delivers a conservation gain for the Koala and Grey-headed Flying-fox through: a) The creation of new habitat for both protected matters through the revegetation of 66 ha. b) Providing new connectivity with surrounding habitat for the protected matters. c) Providing new connectivity to the other approved EPBC offset. d) Introducing, funding and continually improving Offset Area Management Actions to reduce and manage threats (feral dogs, Lantana) in protected and created habitat areas. e) Averting the direct and indirect losses via declaring the land a Voluntary Declaration area for High Value Conservation under the *Vegetation Management Act 1999*. This removes future wholesale and selective clearing opportunities and through the management plan removes ongoing impacts caused by livestock intrusion into habitat areas. f) Provides a 66 ha environmental offset within a regional mapped biodiversity conservation corridor.
2	*be built around direct offsets but may include other compensatory measures*	The Offset Area includes legally securing the land area and undertaking necessary improvements to achieve a greater than 100% offset outcome for impacts calculated on the Proponent Ripley Road Project for GHFF (100%) and Koala Habitat (100%). The Offset Area is wholly achieved through direct delivery to land.
3	*be in proportion to the level of statutory protection that applies to the protected matter*	Both the Koala and the Grey-headed Flying-fox are scheduled within the EPBC Act as 'Vulnerable'. Under the International Union for Conservation of Nature data the probability of annual extinction is 0.2. This factor applies through the meta data of the Offset Guide assessment calculation sheets for which each species has been assessed as achieving greater than 100% offset through the proposed Offset Area.
4	*be of a size and scale proportionate to the residual impacts on the protected matter*	Direct and indirect impacts for the protected matters have been calculated at the impacts site using the Modified Habitat Quality Assessment (MHQA) for the Koala and the Grey-headed Flying-fox Foraging Habitat Assessment (FHA) methods. Within the Assessment Guide calculator the Quantum Impact for each species is listed as: • Grey-headed Flying-fox (28.10 ha) • Koala (28.10 ha)

		To achieve and offset for both of these impacts the Offset Area provides a direct land based outcome over 100 ha entirely through habitat recreation activities on historically cleared land devoid of native vegetation.
5	*effectively account for and manage the risks of the offset not succeeding*	The Offset Area forms part of the balance land of another approved offset solution, which comprises a direct large singular land-based outcome in a strategic location known to support both habitat an animals from the impacted protected matters. This Offset Management Plan identifies 8 key risks to some or all of the offset principles and outcomes not being achieved. Each of these risks have influenced the specific management actions proposed in the relevant Environmental Management Zone where the risk may occur and more importantly the monitoring, measuring of success and adaptive management for the offset succeeding. Further, the offset provider intends to engage third party, suitably qualified professional(s) to ensure that the management outcomes of the offset land are achieved and risk of the offset not succeeding is mitigated. Repetitive monitoring and survey replication is a feature of the Offset Management Plan to ensure adaptive management changes are made as soon as identified and throughout the life of the offset.
6	*be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs*	The Proponent Ripley Road Project occurs in the Ripley Valley Priority Development Area (PDA) declared by the State Government for the fast-tracking of new housing fronts to ensure South East Queensland can cater for the predicted demand. There are few environmental controls at the impacts site with the Queensland Government's *Environmental Offset Act 2014* not being applicable. There are no guidelines or controls around offset or rehabilitation for the Grey-headed Flying-fox. Further, the proposed offset area (Cherry Gully East) does not form part of other the approved offset and as such, is still utilised for cattle grazing activities, and is not protected or managed for conservation purposes. Therefore, without the triggering of the EPBC Act and the Controlled Action Assessment the offset as proposed in the Offset Management Plan is not required for either of the protected matters and the offset site would not be protected in perpetuity for conservation purposes.
7	*be efficient, effective, timely, transparent, scientifically*	Through conditions of approval the Offset Area has been legally secured prior to the commencement of any clearing on the Impact site. The Offset Area and its value has been legally secured through a Voluntary Declaration (V-Dec) declared under the Queensland Government's *Vegetation Management Act 1999* on 2 March 2021.
8	*have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced*	The Offset Site is owned by the Offset Provider and while small areas are currently retained for cattle grazing the majority of the land holding is transition to habitat offsets and conservation outcomes.

		Clearly articulated goals are set within this Offset Management Plan for each proposed action within the Environmental Management Zone (EMZ). Collectively these goals link directly to the achievement of the overall *conservation gain* for the protected matters as designed, assessed and calculated through the selection and delivery of the Offset Area. The Management Tables in Section 5.0 of the OMP are designed to be measured, monitored, audited and enforced year upon year during the life of the offset.

4. Offset Area Design

The Offset Area covers approximately half (66 ha) of the Offset Land at Cherry Gully East and has been designed to provide north-south connectivity to existing surrounding habitat and east-west connectivity to the adjoining approved offset area. As such, the offset aims to achieve the following:

- Habitat recreation by revegetating cleared land into habitat in logical infill locations to maximise the area and width of dedicated offset land.
- Habitat recovery and re-connection through strategically located restoration and revegetation adjacent to existing habitat and adjoining approved restoration areas. Reinstating and enhancing habitat on the Offset Land provides for direct wildlife connectivity between on / off-site habitat tracts to the north and south and east and west to the Ivory Creek corridor.
- Connect the adjacent retained remnant ridgeline vegetation communities with the riparian and alluvial flats being reinstated with Koala and GHFF Habitat through EPBC 2015/7530.

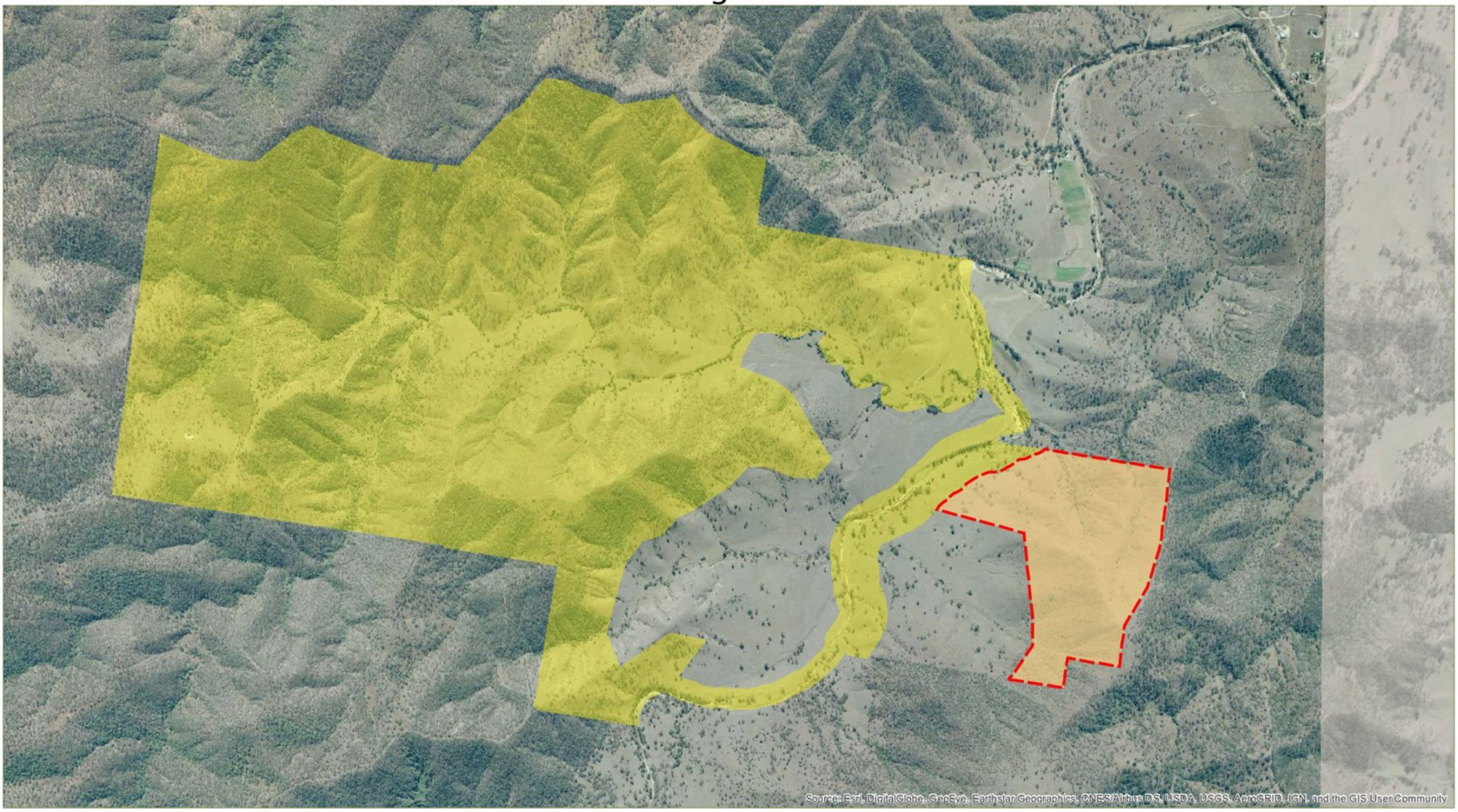
For the purposes of management and improvement monitoring the Offset Area has been categorised as one (1) distinct Environmental Management Zone (EMZ) based on existing habitat condition and desired environmental offset principles. Section 4.0 of this OMP provides a brief description of the EMZ and outlines core objectives sought within the EMZ as part of the overall offset outcome. The designation of the Offset Area into an EMZ is specifically linked to Environmental Management Action Tables in Section 5.0 of the OMP allowing itemised tasks to reference specific geographical areas within the Offset Site.

Refer to PLAN 5 for the Overall Offset Area Design designating the spatial extent of the Environmental Management Zone (EMZ).

The total Offset Area is 66 ha which is categorised into the following management zone:

– Environmental Management Zone 1 – Open Grazing Country [Category X Vegetation] (66.00ha)

PLAN 5 - Offset Area Design



FILE NAME: OEs_2 PLAN 5 Offset Area Design V1
VERSION 1

Avonvale & Cherry Gully Stations - Offset Management Plan (OEs2)

N

0 200 400 800 m

26/06/2020 *1:17,500*

References - © State of Queensland (Department of Natural Resources, Mines and Energy) 2019

Legend

- Offset site boundaries
- Cherry Gully East offset area
- Existing Cherry Gully Station offset area

Offset design

- ENVIRONMENTAL MANANGEMENT ZONE Open Grazing Country - Category X vegetation [66.0 ha]

One Environment

4.1. Environmental Management Zone 1 – Open Grazing Country (Category X Vegetation)

Environmental Management Zone 1 is defined through its primary role of habitat creation and covers 66.00 ha of the Offset Area. Existing habitat values for the Koala and Grey-headed Flying-fox (GHFF) range from marginal (paddock trees) to non-existing (grass plains). There are disconnected locations throughout EMZ 1 where native vegetation values occur in a cluster or strand of healthy specimens, however these were not observed or considered to be contribute to the functional role of habitat available for koalas and GHFF.

The revegetation and reinstatement of native vegetation throughout EMZ 1 results in Three (3) critical objectives, including:

- Expand available Koala and Grey-headed Flying-fox resources through new habitat;
- Provide north-south connectivity to surrounding habitat. The north-south corridor will range from 380 m in width on the southern boundary to 650 m in width on the northern boundary; and
- Provide east-west connectivity to the historically approved offset area and connect adjacent ridgeline remnant vegetation with reinstated riparian and alluvial rich soils being replanted with habitat trees. This connectivity will ensure that long-term koala movement is provided to the eastern tract of contiguous vegetation.

EMZ 1 occurs predominantly on Land Zone 11 country. This land zone and remnant vegetation community on the broader Avonvale and Cherry Gully Stations is known to support koala usage, and as such, is desirable for habitat recreation. EMZ 1 will achieve its management objectives through:

1. Removing weed sources and dense matted pasture grasses from the soil profile in preparation for mass planting of native trees and other species known to support the Koala and Gray-headed Flying-fox.
2. Sequential and long-term exclusion of cattle uses through fencing.
3. Plant maintenance, weed and pest management through the varying stages of revegetation to mature self sustaining regrowth ecosystems.

Further details on specific management actions for EMZ 1 are located in the Tabulated Management Actions in Section 5.0 of this Offset Management Plan. PLAN 8 includes the location of Environmental Management Zone 1 in the Offset Area and includes some indicative imagery of the values in this zone.

5. Offset Land Management Actions

There are 7 categories of actions listed as relevant and required through the Offset Area. Although in many actions there is overlap, primarily the specific tasks can be considered to either reduce or remove an existing threat or improve or create new habitat opportunities. Some actions apply specifically to the Koala species and others are designed to improve habitat and outcomes for both Koalas and Grey-headed Flying Fox. Some actions are limited to acute or specific locations, others apply to the entire Offset Area and selected actions will apply to the entire land holding, inclusive of areas retained for grazing.

Where logical, performance indicators have been transcribed from the Offset Assessment Chapter included in the Preliminary Documentation Submission (*Saunders Havill Group, 2020*). This includes the use of the *Modified Quality Habitat Assessment* (MQHA) method for Koala habitat and the *Grey-headed Flying-fox Foraging Habitat Assessment* (GHFF-FHA) tool for measuring GHFF habitat to set benchmarks and targeted improvements within the EMZ.

Actions to be completed in accordance with this OMP include:

- Action 1: Vertebrate Pest Management (Primarily Targeting Feral Dogs)
- Action 2: Weeds of National Significance (Reduction & Management)
- Action 3: Stock Management
- Action 4: Access Management, Trespass and Neighbouring Stock Mustering Controls
- Action 5: Wildfire Management
- Action 6: Revegetation (Habitat Creation) Activities

Each of these management actions is tabulated into a more detailed format. The tables are set out to respond to the following criteria:

Outcome: *What is the action / task designed to achieve and why is it necessary?*
Action Description: *What are the tasks proposed?*
Action Location(s): *Where on site is the action proposed?*
Action Timing: *When and how will the action / task be implemented, started, completed?*
Responsibility: *Who will complete the action and who will provide the funding?*
Measured & Monitored By: *How will the action be measured, how will the outcome of the action be measured, by what method and timing?*
Adaptive Management: *What's the procedure for correcting or amending the action if the proposed outcomes are not being achieved?*

Cherry Gully East Offset Area Offset Management Plan

Action Management Tables

5.1. **Action 1**: Vertebrate Pest Management (Primarily Targeting Feral Dogs)

The Department of Agriculture & Fisheries (DAF) – Biosecurity Queensland maps feral dogs through the Somerset Regional Council Area as 'common'. Feral dogs are listed as a 'class 2' pest in the Somerset Regional Council Pest Management Plan and noted within many contemporary newspaper articles and Council's meeting minutes as increasing in population since 2013 [Ref: Elsome, D (2018)]. Council have introduced a feral dog bounty program providing $25 for each scalp provided as evidence. Council also provide baiting and training on use of baiting to land holders, however do not retain their own pest management officer.

Historical land holder and farm staff observations on the broader Avonvale and Cherry Gully Stations have antidotally noted feral dogs as an issue for stock and that the problem is shared by all surrounding cattle grazers. Site surveys associated with Avonvale and Cherry Gully Station located feral dogs, through the vegetated and cleared portions of the Offset Area. Additionally, the remnants of a dead koala was recorded on-site with evidence suggesting the mortality was most likely the result of a dog attack. There are 23 local records for koalas of which 7 are noted as severely injured or killed animals.

A core role of the Action 1 Offset Management Tasks will be for the prolonged control and reduction in feral dogs over the offset land for the offset period.

Site Images of Feral Dogs / Koala Carcass and Other Pest Species:




Table 5: Offset Area – Action 1 – Management Actions

Action Description: *What are the tasks proposed?*	– Reduce the occurrence of Vertebrate pest species (Namely feral dogs) to below 5% of the baseline survey within the Offset Area within 5 years from the commencement of the offset. – Reduce koala injury or mortality within the Offset Area to zero (0) within 5 years from the commencement of the offset. – Maintain reduced occurrence and koala injury and mortality rates for the life of the offset (20 years – reduction achieved in 5 years maintained reduced rates for 15 years)
Action Location(s): *Where on site is the action proposed?*	– Vertebrate Pest Management is to occur in the Environmental Management Zone of the Offset Area (EMZ 1). – Vertebrate Pest Management will be extended to the entire offset area covering retained grazing areas to ensure dispersal and ambush targets are located and controlled.
Action Timing: *When and how will the action / task be implemented, started, completed?*	Year 1 – Complete Detailed Baseline / Seasonal Pest Management Survey • Establish an on-site monitoring program to deliver baseline data for measuring occurrence and incidence reduction of specific control techniques (eg baiting / shooting /trapping). Methods to include: o Formal recording of site and surrounding stock losses o Remote sensor cameras with baited cages o Scat occurrence, age and type surveys o Develop and implement an on-site recording protocol for incidental observations of pest management species by Station and Offset Staff. Year 1 – Consult with Somerset Regional Council and or Regional Pest Management Representative to discuss best methods and the broader strategy for the region. This consultation is to be in conjunction with the consultation as part of the other approved offsets. Year 2 – Development initial Pest Management Implementation Strategy and consult with adjoining land holders for coordinated approaches to wild dog population reduction. This pest management implementation strategy is to be in conjunction with the other approved offsets. This collaboration will ensure the time lag to implementation is reduced.

	Years 1 – 5 – Commence Targeted Pest Management Activities • Quarterly Spotlight Diurnal Hunting (Shooting) Program. • Implement 1080 baiting program in February to May and September to November in accordance with Somerset Regional Council's recommended guidelines. • Include annual trapping/baiting/survey event targeting feral dogs species. Years 1 – 5 - Decommissioning and removal of any pest species denning, foraging or breeding features located during the baseline studies Year 5 – Remobilise and Replicate Detailed Baseline / Seasonal Pest Management Survey – Compare and report on data in year 5 Offset Area Annual Report (OAAR) 5 to demonstrate that completion criteria has been met (less than 5% of the year 1 baseline survey results and zero (0) koala mortalities or injury in the Offset Area), along with proposed adaptive management amendments to the Targeted Pest Management Activities. Years 6-10 – Continue to implement Pest Management Strategy / Actions – In accordance with any recommended adaptive management changes incorporated in response to Year 5 baseline surveys as documented in the OAAR. Year 10 - Remobilise and Replicate Detailed Baseline / Seasonal Pest Management Survey – Compare and report on data in year 10 OAAR to ensure that completion criteria has continued to be met (less than 5% of the year 1 baseline survey results and zero (0) koala mortalities or injury in the Offset Area), along with proposed amendments to the Targeted Pest Management Activities. Years 11-15 – Continue to implement Pest Management Strategy / Actions – In accordance with any recommended adaptive management changes incorporated in response to Year 10 baseline surveys as documented in the year 10 OAAR.

	Year 15 - Remobilise and Replicate Detailed Baseline / Seasonal Pest Management Survey – Compare and report on data in year 15 OAAR (less than 5% of the year 1 baseline survey results and zero (0) koala mortalities or injury in the Offset Area), along with proposed amendments to the Targeted Pest Management Activities. Years 16-20 – Continue to implement Pest Management Strategy / Actions – In accordance with any recommended adaptive management changes incorporated in response to Year 15 baseline surveys as documented in the year 15 OAAR. Year 20 - Remobilise and Replicate Detailed Baseline / Seasonal Pest Management Survey – Compare and report on data in year 20 to demonstrate that completion criteria has been met (less than 5% of the year 1 baseline survey results and zero (0) koala mortalities or injury in the Offset Area).
Responsibility: *Who will complete the action and who will provide the funding?*	The Offset Provider will establish, resource and fund the pest management components of the Offset Management Plan. The following tasks will require specific expertise or appointed contractors to complete: – Base line and repeat surveys to be completed by a senior tertiary trained ecologist, zoologists or environmental scientist with a minimum of 5 years industry field experience. – Use of 1080 or sodium fluoroacetate poisons is regulated under the *Health (Drugs and Poisons) Regulations 1996*. Deployment and use of this control method to be via a registered contractor holding relevant permits and demonstrated experience. – Hunting / Shooting Program to occur in accordance with all relevant Queensland Government permits and regulations. – Existing operational farm staff and offset implementation staff to be educated towards the contribution of pest species record keeping. The Offset Provider is responsible for preparing and issuing Offset Area Annual Reports to the proponent within contracted timeframes for inclusion in the Approved Project ACR.

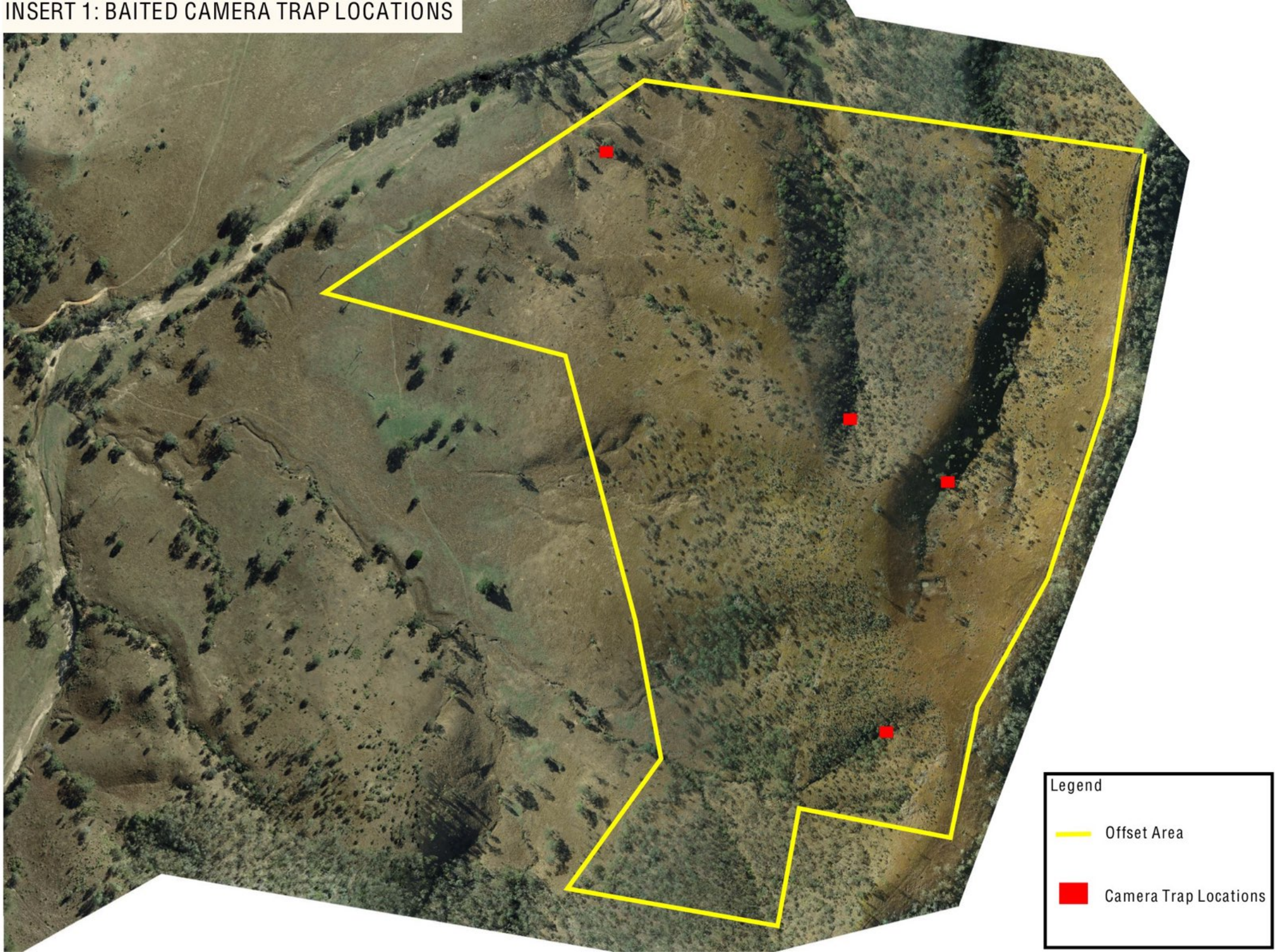
Measured & Monitored By: *How will the action be measured, how will the outcome of the action be measured, by what method and timing?*	Completion of baseline surveys and range estimate of vertebrate pest species populations, seasonal locations, dispersal patterns and hot spots, including sighting and incidence (death / injury) data. Survey methods and results provided in Year 1 Offset Area Annual Report (And incorporated in Year 1 Annual Compliance Report for the Approved Action). Interim actions and results provided in Year 2-4 Offset Area Annual Report. (provided as conditioned in the relevant Annual Compliance Report for the Approved Action) Replicated baseline surveys in year 5, 10, 15 & 20 to demonstrate statistical reduction in: • Incidental sighting and records of vertebrate pest species on-site (below 5% of the baseline survey results) • Vertebrate pest species scat / track or imprint evidence at targeted survey locations • Reduced site population census on infrared drone and baited remote sensor camera surveys • Reduced scalp collection or animal kills on diurnal hunting (Shooting) events • Stock losses over the property • Nil occurrence of injury or mortality of vertebrate pest species on site koala populations Year 5 OAAR to include repeat survey methods, results data and comparative analysis demonstrating statistical reduction in vertebrate pest management evidence and impacts. Report to include any adaptive management recommended changes to pest control and reduction methods to be deployed for years 6-10. Details of surveys, results and alterations to management strategies to be provided to proponent in the Year 5 OAAR for issue to the Department in the Year 5 Annual Compliance Report for the Action. Interim actions and results provided in Year 6-9 Offset Area Annual Report (provided as conditioned in the relevant Annual Compliance Report for the Approved Action) Repeat of Baseline surveys in year 10, year 15 and year 20 to demonstrate a maintenance of year 5 statistically reduced vertebrate pest species incidence and or occurrence below the 5%-year 1 baseline survey results.

	Or If greater than 5% of the baseline pest survey results remain in the Year 5 survey and reporting, Year 10 survey results to demonstrate that the less than 5% of the baseline survey has been achieved. Year 10 Annual OAAR to include repeat survey methods, results data and comparative analysis demonstrating a maintenance or statistical reduction in vertebrate pest species evidence and impacts. Report to include any adaptive management recommended changes to pest control and reduction methods to be deployed for years 11-19. Details of surveys, results and alterations to management strategies to be provided to proponent in the Year 10 OAAR for issue to the Department in the Year 10 Annual Compliance Report for the Action. Repeat of Baseline surveys in year 15 and year 20 to demonstrate a maintenance of year 10 statistically reduced vertebrate pest species incidence and or occurrence below the 5%-year 1 baseline survey results. Actions and results provided in Year 11-19 of continuation of Year 10 adaptive management vertebrate pest management strategy (provided as conditioned in the relevant Annual Compliance Report for the Approved Action).
Risks & Adaptive Management: *what's the procedure for correcting or amending the action if the proposed outcomes are not being achieved?*	Without intervention and management actions the risk of vertebrate pest species impacts on the koala are assessed as 'High' in Section 6 of this Offset Area Management Plan. This is based on regional and local government data on feral dogs combined with a number of on-site feral dog sightings and koala mortality evidence collected during preliminary surveys. The pest management strategies incorporate intensive implementation methods and three (3) major data collection survey events for confirming base case and successful reduction of pest management impacts. The repeat survey points are designed to deliver data on outcomes being achieved. If the surveys don't demonstrate the targeted effectiveness the implementation strategy will be adjusted to: • Adopt new management techniques • Increase successful techniques and reduce less successful management methods

	• Increase intensity of implementation program • Change the timing or locality of proposed target treatment locations or events • Allow the site strategy to assimilate into any new broader threat abatement programs. The vertebrate pest management implementation strategy will use the baseline data to build a calendar of annual activities based around varying control methods, seasons and species. The threat abatement actions and outcomes within any calendar year will be reported on within the OAAR and will provide a number of lead indicators towards a reduction in occurrence and impacts. Major survey and review periods are set at year 5 and year 10 to ensure the program achieves long term reduction and does not respond to specific stochastic events such a contextual fluctuation in pest populations such as feral dogs.
Baseline Survey Results: ***Year 1 b****aseline survey results for the offset land management action*	Four baited camera traps were established within the offset area for a period of two weeks from 3 – 13 March 2021 (inclusive) and again redeployed from 2 – 16 November 2021 (inclusive) (refer to **Insert 1** for the baited camera trap locations). The four baited camera traps failed to yield evidence of wild dogs, however, surveys on the broader Cherry Gully and Avonvale Station properties identified **six** wild dogs and **one** wild fox during the Year 1 baseline surveys. The **six** wild dog and **one** wild fox encounters were documented as follows: • One wild dog via baited camera trap (March 2021) • Two wild dogs shot by on-site farm hand (April 2021 & October 2021) • One wild dog observed dead by Council 1080 poison (December 2021) • One wild dog observed by on-site farm hand (July 2021) • One wild dog assumed to be present via attacked on calf (November 2021) • One wild fox via baited camera trap (March 2021) Given the limited observations on the Cherry Gully East offset site, the baseline data derived from the broader Cherry Gully and Avonvale Station will be utilised as the baseline for Cherry Gully East.
Management Action Completion Criteria and	• **Baseline Survey Results (Year 1):** six wild dogs and one wild fox

Interim Completion Criteria (based on baseline survey results)	• **Interim Completion Criteria (Year 5, Year 10 & Year 15):** Less than 5% of the baseline survey results = one wild dog or less. • **Completion Criteria (Year 20):** Less than 5% of the baseline survey results = one wild dog or less.

INSERT 1: BAITED CAMERA TRAP LOCATIONS



5.2. **Action 2**: Weeds of National Significance (Reduction & Management)

Preliminary site surveys and observations over the Cherry Gully East land holding recorded a number of weed species, of which three (3) are scheduled as declared weeds under the *Land Protection (Pest and Stock Route Management) Act 2002* or now listed as 'restricted invasive' plants under the *Biosecurity Act 2014*. The most regularly recorded and in locations abundant species are *Lantana camara* and *Lantana montevidensis*. The Queensland Government Department of Agriculture and Fisheries (DAF) maps the Somerset Region as containing widespread common and abundant infestations of Lantana. The Somerset Regional Council 2013-2018 Pest Management Plan schedules Lantana amongst the priority pest species noting it as abundant and widespread through the region with a 'high' capacity to spread and a 'low' capacity for Council to successfully control.

Lantana is a Weed of National Significance under the EPBC Act. In 2006 Lantana was nominated by the **NSW Government Office of Environment and Heritage** to be listed as a key threating process under the EPBC Act:

"The invasion, establishment and spread of Lantana camara impacts negatively on native biodiversity including many EPBC listed species and communities."
(Source: Key Threatening Process Nomination Form)

"Lantana is a Weed of National Significance. It is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts. Lantana forms a dense, impenetrable thickets that take over native bushland."
(Source: Weed Management Guide – Weeds of National significance – Lantana – National heritage Trust)

"L. camara may change soil microhabitat through shading, self-mulching, and altered water and nutrient balances. Lamb (1988, cited in Swarbrick et al. 1995) identified an increase in soil nitrate in eucalypt woodland following Lantana invasion, to the benefit of the Lantana and other weeds, and to the detriment of some native species, and a decline in other nutrients. Gentle and Duggin (1998) point to Lantana's ability to aggressively compete for and sequester surface-soil nutrients, such as are made available by disturbance episodes, and verified experimentally Lantana's ability to out-compete and suppress an analogous native coloniser of mesic forests (Choricarpia leptopetala, Myrtaceae). "
(Source: Lantana camara - key threatening process listing – NSW Government)

Lantana occurs on the offset landholding both in open paddock areas as isolated clusters and thickets and as a dominant shrub or creeper through gully areas. Within open areas existing farm practices result in periodical pesticide application limiting spread, however, this does not occur to the extent of entire eradication as the costs of treatment to result in an economical return for the grazing benefit are non-existent. An exact volume or extent of Lantana at the

offset site has not been calculated, however conservatively it is estimated that 10% of the land holding is affected by Lantana and this primary occurs in the gully areas forming part of the Offset Area (Approximate estimate of effected areas extrapolated from transect data is 6-10 ha).

Lantana infestations suppress and inhibit the natural regeneration of regrowth vegetation on-site which directly limits the growth rates and regeneration of primary and secondary Koala tree species and Grey-headed Flying-fox foraging tree species. Although baseline data is limited to the survey events undertaken for this EPBC Application research infers the highly invasive and spreading nature of the species, coupled with the in-active management in areas would result in progressive increases as local climatic events align with optimal germination and seeding periods. In areas blanket layers of Lantana additionally form a barrier to terrestrial species, which would include limiting the Koalas ability to access areas containing and over-canopy of Koala food trees (many of these areas were impenetrable for human survey).

Site Images of Lantana Infestations



Table 6: Offset Area – Action 2 – Management Actions

Action Description: *What are the tasks proposed?*	– Removal and control of all major Lantana infestations from within the Offset Area using a variety of mechanical and herbicide methods. Lantana infestations are to be reduced to below 5% of the offset area. – Ongoing maintenance rotations to retain Lantana extents within the Offset Area at or below the reduced extent achieved through weed management actions. – Prevent the further spread or establishing of new Lantana outbreaks within the Offset Area (primarily by excluding cattle from EMZ 1).
Action Location(s): *Where on site is the action proposed?*	– Management of Lantana is to occur in the entire Offset Area
Action Timing: *When and how will the action / task be implemented, started, completed?*	Year 1 – Complete Detailed Baseline / Weed Extent Survey • Use an Antenna based GPS system to map the full extent (as description polygons) of all Lantana areas within the Offset Area (achieve a total ha extent of weed infestations / occurrences within the Offset Area). Results of baseline weed extent surveys to be included in year 1 Offset Area Annual Report for inclusion in the project ACR. Year 1 – Exclude stock (cattle) access from Lantana infestation areas within the Offset Area (grazing cattle provide the most continuous source of Lantana spread. By year 2 the entire Offset Areas will retain cattle exclusion fencing – Refer Stock Restrictions management actions – Action 3) Years 2-5 – Commence detailed weed management control activities within the Offset Area. Methods deployed based on extent of infestation, existing native values, topography, waterways and other sensitive receiving environments: • Stick rake, grubbing, ploughing or slashing major accessible areas of Lantana where not on a slope greater than 15% or where no existing native values occur;

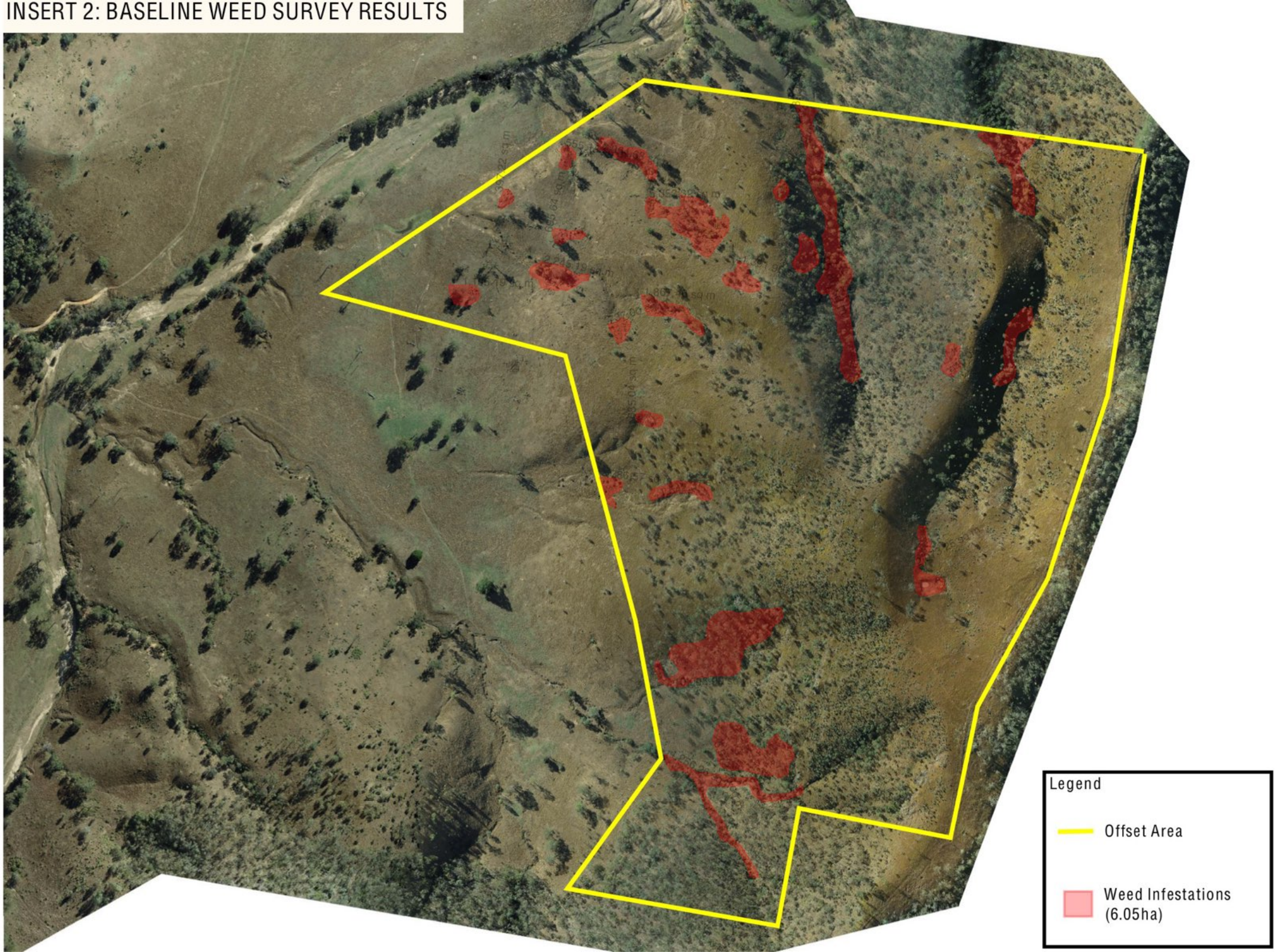
	• Apply broadscale herbicide and spot spray during high germination summer periods (Nov-March). Utilise organic based Lantana targeted herbicides which minimise impacts on native vegetation regenerating within and surrounding Lantana patches. Demonstrate a downward trend in the weed extent, vigor and health annually through years 2-5, achieving a significant reduction in *Lantana spp.* extent within the Offset Area by year 5, with less than 20% of the offset area to contain weeds (<13.20 ha of total weed infestations). Actions and downward trend to be reported annually in the OAAR. Year 5 – Replicate Detailed Weed Extent Re-Survey through the Offset Area – Include plans and calculations in the Year 5 OAAR demonstrating less than 20% of the offset area contains weed infestations (<13.20 ha of total weed infestations). Years 6-10 – Continue to implement Detailed Weed Management Control Methods – In accordance with any recommended adaptive management changes incorporated in response to Year 5 replicated baseline surveys as documented in the year 5 OAAR. Demonstrate a downward trend in the weed extent, vigor and health annually through years 6-10, achieving a further reduction in *Lantana spp.* extent within the Offset Area by year 10, with less than 5% of the offset area to contain weeds (<3.30 ha of total weed infestations). Actions and downward trend to be reported annually in the OAAR. Year 10 - Remobilise and Replicate Detailed Weed Extent Re-Survey through the Offset Area – Compare and report on data in year 10 OAAR along with proposed amendments to the Targeted Pest Management Activities. Include plans and calculations in the Year 10 OAAR demonstrating less than 5% of the offset area to contain weeds (<3.30 ha of total weed infestations). Provide an update and next steps and recommendations on the Biological Control area and methods. Years 11-19 – Continue to implement Detailed Weed Management Control Methods – In accordance with any recommended adaptive management changes incorporated in response to Year 10 replicated baseline surveys as documented in the year 10 OAAR. Repeat of Baseline surveys in year 15 and year 20 to demonstrate a maintenance of year 10 significant reductions to the extent of *Lantana spp.* below the 5%- of the offset area to contain weeds (<3.30 ha of total weed infestations).

	Actions and results provided in Year 11-19 of continuation of Year 10 adaptive management detailed weed management control methods (provided as conditioned in the relevant Annual Compliance Report for the Approved Action).
Responsibility: *Who will complete the action and who will provide the funding?*	The Offset Provider will establish, resource and fund all weed management components of the Offset Management Plan. The following tasks will require specific expertise or appointed contractors to complete: – Base line and repeat surveys to be completed by a senior tertiary trained ecologist, or environmental scientist with a minimum of 5 years industry field experience. – Use of any herbicides to be undertaken by a licensed contractor or strictly in accordance with the *Agricultural Chemicals Distribution Control Act 1996* and or in accordance with manufactures recommendations or label instructions. Preparing and issuing Offset Area Annual Reports to the proponent within contracted timeframes for inclusion in the Approved Project ACR.
Measured & Monitored By: *How will the action be measured, how will the outcome of the action be measured, by what method and timing?*	Completion of baseline Lantana surveys providing an actual mapped extent of infestations and occurrences in hectares to be used as the benchmark for measuring improvement. Survey methods and results provided in Year 1 Offset Area Annual Report (And incorporated in Year 1 Annual Compliance Report for the Approved Action). Interim actions and results provided in Year 2-5 Offset Area Annual Report. (published as conditioned in the relevant Annual Compliance Report for the Approved Action). Year 2 to 5 annual results are to demonstrate a downward trend in weed extent and outbreak to less than 20% of the offset area to contain weeds (<13.20 ha of total weed infestations). Replicate baseline surveys in year 5 to demonstrate less than 20% of the offset area to contain weeds (<13.20 ha of total weed infestations).

	Year 5 OAAR to include repeat survey methods, results data and comparative analysis demonstrating less than 20% of the offset area to contain weeds (<13.20 ha of total weed infestations). Report to include any adaptive management recommended changes to weed control methods to be deployed for years 6-10. Details of surveys, results and alterations to management strategies to be provided to proponent in the Year 5 OAAR for issue to the Department in the Year 5 Annual Compliance Report for the Action. Interim actions and results provided in Year 6-9 Offset Area Annual Report (provided as conditioned in the relevant Annual Compliance Report for the Approved Action) Replicate of baseline surveys in year 10 to demonstrate a downward trend in the weed extent, vigor and health annually through years 6-10, achieving a further reduction in *Lantana spp.* extent within the Offset Area by year 10, with less than 5% of the offset area to contain weeds (<3.30 ha of total weed infestations) Year 10 OAAR to include repeat survey methods, results data and comparative analysis less than 5% of the offset area to contain weeds (<3.30 ha of total weed infestations). Report to include any adaptive management recommended changes to weed control to be deployed for years 11-19. Details of surveys, results and alterations to management strategies to be provided to proponent in the Year 10 OAAR for issue to the Department in the Year 10 Annual Compliance Report for the Action. Year 10 OAAR to include update and recommendations on the Biological Control trial, including outlining next steps of actions for years 11-19. Repeat of Baseline surveys in year 15 and year 20 to demonstrate a maintenance of year 10 significant reductions to the extent of *Lantana spp.* below the 5% of the offset area to contain weeds (<3.30 ha of total weed infestations). Actions and results provided in Year 11 – 19 Offset Area Annual Reports of continuation of Year 10 adaptive management weed control measures and the demonstration that *Lantana spp.* is maintained below 5% of the offset area to contain weeds (<3.30 ha of total weed infestations).

Risks & Adaptive Management: *what's the procedure for correcting or amending the action if the proposed outcomes are not being achieved?*	The primary weed issue through the Offset Area is Lantana. Mapping of Lantana populations and areas is relatively simple enabling the tables in this management plan to set a number of weed reduction and management targets. Periodical repeat survey points are designed to deliver data on outcomes being achieved. If the surveys don't demonstrate the targeted effectiveness the implementation strategy will be adjusted to: • Adopt new management techniques • Increase successful techniques and reduce less successful management methods • Increase intensity of implementation program • Change the timing or locality of proposed target treatment locations or events
Baseline Survey Results: *Year 1 baseline survey results for the offset land management action*	Detailed weed extent surveys utilising handheld GPS and ortho-rectified drone aerial imagery were undertaken within the offset area during March and August 2021. Detailed survey results indicate that 6.05 ha of the total offset area contains weed infestations. Refer to **Insert 2** for the baseline weed survey extent.
Management Action Completion Criteria and Interim Completion Criteria (based on baseline survey results)	• **Baseline Survey Results (Year 1):** 6.05 ha of weed infestations OR 9.16% of the Offset Area **(MHQA SCORE = 5/10)** • **Interim Completion Criteria (Year 5):** Less than 20% of the offset area to contain weed infestations (13.20 ha) **(MHQA SCORE = 5/10)** • **Interim Completion Criteria (Year 10):** Less than 5% of the offset area to contain weed infestations (3.30 ha) **(MHQA SCORE = 10/10)** • **Interim Completion Criteria (Year 15):** Maintain less than 5% of the offset area weed infestations (3.30 ha) **(MHQA SCORE = 10/10)** • **Completion Criteria (Year 20):** Maximum of 3.30 ha of the offset area to contain weed infestations **(MHQA SCORE = 10/10)**

INSERT 2: BASELINE WEED SURVEY RESULTS



5.3. **Action 3**: Stock Management

Cherry Gully East historically forms part of the broader Avonvale and Cherry Gully operational cattle stations. Avonvale retains an active 'Environmental Authority' (Permit F1-0048) under the Queensland Government's *Environmental Protection Act 1994* for the operation of feedlot facilities between 1,000 and 10,000 animals. Both properties have historically retained extensive rotational pasture paddocks and selectively vegetated paddocks for the raising of weaners. Cattle or evidence of recent cattle use was observed in all locations of preliminary ecological surveys, with the level of recent intensity directly correlating to the condition of residual biodiversity values.

The pressure and impacts brought on the land holding's Koala and Grey-headed Flying-fox values include:

1) The need for wholesale clearing to periodically expand pasture paddocks.
2) Cycle tordening and selective clearing to limit canopy cover of native trees to minimise suppression of grass feed.
3) Direct trampling and compacting of regeneration areas.
4) Spread of weed species and infestations which are also supported by minimising canopy cover and prevention of regeneration.

Although there is some limited research that intensive cattle grazing can result in some positive biodiversity outcomes generally cattle farming re-engineers the landscape to support predator species.

The risks of ongoing cattle grazing on the land could vary from low to medium to high subject to the future maintenance or expansion of the grazing use which is driven by a number of economical factors, however primarily the rise and fall of the cattle price. Regardless the long term and current highest and best use for the land is the continuation of the feedlot operation. No reduction in risk or improvement in condition or value of the koala and Grey-headed Flying-fox habitat will occur without direct intervention and a change in use (such as this offset outcome).

Fauna friendly stock exclusion fencing or complete removal of stock from Cherry Gully Station is the ultimate proposed solution. The created unfenced boundary of the Offset Area is approximately calculated as 1.6 km of new fencing. Fencing is costly and time consuming and is programmed to roll out inline with works within the Environmental Management Zone, and as such, will all be in place within 2 years of the commencement of the action and offset (refer to PLAN 10 for the indicative Offset Area fencing locations). Alternatively, within 2 years of the commencement of the action and offset, livestock are to be removed from the entire Cherry Gully Station.

Table 7: Offset Area – Action 3 – Management Actions

Action Description: *What are the tasks proposed?*	– Prevention and management of livestock from the Offset Area using fauna friendly stock exclusion fencing OR removal of all livestock from the Cherry Gully Station.
Action Location(s): *Where on site is the action proposed?*	– Environmental Management Zone 1 is to be fenced – Refer to PLAN 10 for the indicative Offset Area fencing locations; OR – Livestock is to be removed from the entirety of Cherry Gully Station
Action Timing: *When and how will the action / task be implemented, started, completed?*	Years 1-2 o Fencing in accordance with the indicative Offset Area Fencing Plan (PLAN 10) and is to be completed by end of Year 2. o Alternatively, all livestock is to be removed from Cherry Gully Station o A status update on completed fencing locations or confirmation that livestock has been removed from Cherry Gully Station will be provided in the Offset Area Annual Report for inclusion in the ACR. Years 3-20 – All fencing will be inspected annually and reported on in the Offset Area Annual Report. OR Year 3-20 – Annual status update to confirm that livestock have continued to be excluded from Cherry Gully Station. This is to be reported on in the Offset Area Annual Report.
Responsibility: *Who will complete the action and who will provide the funding?*	The Offset Provider will establish, resource and fund the construction, monitoring, maintenance and reporting on all fencing (using fencing contractors where deemed appropriate) OR The Offset Provider will remove all livestock from Cherry Gully Station.

	The Offset Provider is responsible for preparing and issuing Offset Area Annual Reports to the proponent within contracted timeframes for inclusion in the Approved Project ACR.
Measured & Monitored By: *How will the action be measured, how will the outcome of the action be measured, by what method and timing?*	– All fencing shown on the indicative Offset Area Fencing Plan (PLAN 10) being in place by year 2 reporting OR all livestock has been removed from the entirety of Cherry Gully Station by year 2 reporting. – Nil stock breaches into Offset Areas from year 3-20 (post completion of all fencing or removal of livestock). – No reporting of stock impacts as justification for not achieving: o Habitat quality improvements o Weed spread targets – Annual documented evidence of fence monitoring and maintenance rectifications or annual status update confirming the exclusion of livestock from the entirety of Cherry Gully Station in each Offset Area Annual Reporting period from years 3-20.
Risks & Adaptive Management: *What's the procedure for correcting or amending the action if the proposed outcomes are not being achieved?*	Providing the right type of fencing is installed in the correct locations and monitored the risk of failure is extremely unlikely. Regardless any breach of cattle accessing the Offset Area would be identified through the general course of offset establishment or maintenance or as part of the cattle operator's routine stock checks (typically daily). Damage as a result of a short-term breach is likely to be minimal and reversible through reinstatement works.

5.4. **Action 4**: Access Management, Trespass and Neighbouring Stock Mustering Controls

Cherry Gully East are surrounded to the north, east and south by large cattle grazing land holdings and a number of smaller agricultural farms. On land holdings at this scale the it is common for neighbours to access and muster through un-owned adjoining land parcels to connect fragmented land holdings. Additionally, an adjoining land holder may cut a new access track in adjoining un-owned land without permission because of the perceived benefit to both parties, which is typically the case in farming operations.

The impacts of unlawful access and stock mustering mimic those listed in the 'general stock management' section of this management plan (trampling, compacting, weed spread, fence destruction). Without a system for identifying and preventing or controlling access, trespass and adjoining mustering the actions established for on-site stock management will be undermined.

Table 8: Offset Area – Action 4 – Management Actions

Action Description: *What are the tasks proposed?*	– Prevention / control of unauthorised access, stock mustering and trespass through the Offset Area.
Action Location(s): *Where on site is the action proposed?*	– The Environmental Management Zone will be fenced, however particularly targeting EMZ contiguous with adjoining land holder boundaries.
Action Timing: *When and how will the action / task be implemented, started, completed?*	Year 1 o Inspection and rectification of all external fence boundaries o Notification of Offset Areas, purpose and outcomes to all adjoining land owners. Remaining Actions: o Access gates and signage to be installed where Offset Area fencing crosses tracks required to be maintained for external land holder access (As fencing is installed) o No new access tracks through the Offset Area unless to support offset outcomes
Responsibility: *Who will complete the action and who will provide the funding?*	The Offset Provider is responsible for funding and undertaking all actions relating to access, trespass and neighbouring stock mustering. The Offset Provider is responsible for preparing and issuing Offset Area Annual Reports to the proponent within contracted timeframes for inclusion in the Approved Project ACR.
Measured & Monitored By: *How will the action be measured, how will the outcome of the action be measured, by what method and timing?*	– Copy of notification letter provided to adjoining land holders. – Evidence (photos) or erected signage and gates at Offset Area / existing track fencing conflict points. – Fence monitoring as per Stock Management commitments – No evidence of stock influence in outcomes scheduled for the Offset Area habitat (Eg no stock impacts on the MHQA or GHFF FHA).

Risks & Adaptive Management: *What's the procedure for correcting or amending the action if the proposed outcomes are not being achieved?*	Given there is not legal requirement for access or mustering through the land holding (eg no easement, etc) if necessary enforcement options are available, however its considered extremely unlikely this would be required provided alternative access and mustering points are established which don't conflict offset outcomes.

5.5. **Action 5**: Wildfire Management

The Queensland Government's State Planning Policy mapping tool shows the site contains areas of areas of Very High, High and Medium Potential for Bushfire intensity (refer to FIGURE 5 in section 6.1). Similar mapping is contained within the Somerset Regional Council hazard assessment overlays (refer to FIGURE 5 in section 6.1). On ground the fuel was generally observed as lower than the high level mapping as vegetated areas had been thinned out to maxmise grazing grasses on the ground layer which also precluded the build up of loose leaf litter.

The last recorded wildfires within the vicinity of the Offset Site occurred in September 2018 and involved the evacuation of some residents of the adjoining Toogoolawah township. Avonvale and Cherry Gully Stations were not effected by these fire events. The land retains only sections of vegetation interspersed with open pasture land and includes a system of firebreaks and access tracks for the protection of stock and farming infrastructure. This fire management system will be maintained and evolved as parts of the site transfer from open pasture to revegetation as part of the offset works.

This offset proposal and the actions in this management plan include a number activities which support the expansion and condition of Grey-headed Flying-fox and Koala habitat through removal of cattle grazing uses. One unwanted outcome of this habitat creation will be increased fuel loads and vegetated areas supporting the establishment or potential spread of wildfires. High intensity wildfires scold the biodiversity of bushland and the vast majority of terrestrial species, including the koala, perish. Extreme fire events burnout the canopy of keystone bushland species and temporarily removing seed, fruit and flowering resources from Grey-headed Flying-fox habitat. Ultimately burned open Eucalyptus woodland communities will recover from fire, however a major event may set the offset outcomes back by a number of years.

As the changed uses on site increase the potential for bushfire, coupled with increasing fire intensity events generally experienced in South East Queensland the need for ongoing and refined bushfire management is an important component of the Offset Area.

Table 9: Offset Area – Action 5 – Management Actions

Action Description: *What are the tasks proposed?*	– Manage created bushland habitat within the Offset Area to prevent and / or minimise the impact of high intensity wildfires. This will be achieved through:
	  – Conversion of the current on-site bushfire management approach into a management plan supported of the changed environmental offset outcomes.
	  – Periodical and controlled low intensity burns occurring in a mosaic configuration every 8-10 years through the Offset Area of the property.
	  – Creation and alteration of existing fire breaks in support of habitat improvement, expansion and revegetation areas (consider new tracks and breaks in replanting programs).
	  – Monitoring of fuel loads through the Offset Area.
	  – Establishment of safety and emergency response protocols for wildfire events.

Action Location(s): *Where on site is the action proposed?*	– In Year 1-7 the risk of wildfire is limited, however, as the EMZ becomes established, the ability for the vegetation to support the establishment and spread of wildfire is increased.

Action Timing: *When and how will the action / task be implemented, started, completed?*	<u>Years 1</u>
	– Continuation of existing fire break infrastructure maintenance (firebreaks and trails)
	<u>By Year 6</u>
	– Develop Offset Area Wildfire Management Plan, as a minimum plan to include:
	  – Results of base line fuel load surveys
	  – Method and metric for maintaining fuel loads and decreased risk levels
	  – Plan of fire tracks, trails and breaks
	  – Program for mosaic low intensity control burns
	  – Plan to be endorsed by the Queensland Rural Fire Brigade

	Years 7-20 – Implement Offset Area Wildfire Management Plan
Responsibility: *Who will complete the action and who will provide the funding?*	The Offset Provider is responsible for funding appropriate qualified bushfire consultants for fuel load monitoring and preparation of the Offset Area Wildfire Management Plan. Plan to be endorsed by the Queensland Rural Fire Brigade / Implementation of the plan, specifically the mosaic low intensity back burns to occur under relevant permits and instruction from the Rural Fire Brigade. The Offset Provider is responsible for preparing and issuing Offset Area Annual Reports to the proponent within contracted timeframes for inclusion in the Approved Project ACR.
Measured & Monitored By: *How will the action be measured, how will the outcome of the action be measured, by what method and timing?*	– No reported deaths of Koalas or GHFF from wildfire within the OAAR. – No reduction (temporary or permanent) in the available foraging trees for Grey-headed Flying-fox and food trees for Koalas during the offset period as a result of wildfire. – Offset Area Wildfire Management Plan included within Year 6 Offset Area Annual Report and incorporated into ACR. – All Wildfire Management Plan activities (tracks, burns, fuel load reduction, etc) undertaken to be outlined within relevant Offset Area Annual Report.
Risks & Adaptive Management: *What's the procedure for correcting or amending the action if the proposed outcomes are not being achieved?*	As fire is a natural occurrence within open Eucalypt woodland and within time bushland will recover from even major events the risks of the Wildfire Management Plan not preventing a wildfire within the Offset Area low is considered of medium consequence. If a major wildfire event occurs within the Offset Area during the offset period the following adaptive management actions will occur: 1. An post wildfire audit of the damage and cause of the wildfire (where it commenced, direction and area it moved through, which Environmental Management Zones sustained the greatest damage and why, recommendations on actions which could be incorporated to avoid or minimise any future events)

	2. An Offset Area Recovery Plan would be prepared scheduling actions to expedite the recovery and reinstatement of values destroyed by fire. 3. A revised Offset Area Wildfire Management Plan would be developed adopting recommendations and strategies from the post wildfire event audit.

5.6. **Action 6**: Revegetation (Habitat Creation) Activities

The entirety of the offset is to consist of habitat creation. The habitat creation is to:

- Expand the available Koala and Grey-headed Flying-fox resources through infill planting of broad hectare cleared land;
- Provide north-south connectivity to adjacent offsite remnant habitat. The north-south corridor will range from 380 m in width on the southern boundary to 650 m in width on the northern boundary; and
- Provide east-west connectivity to the adjoining approved offset area. This connectivity will ensure that long-term koala movement is provided to the eastern tract of contiguous vegetation. Additionally the offset will connect adjacent ridgeline remnant habitat with the reinstated riparian and alluvial rich soils being replanted along Ivory Creek.

Revegetation will occur through the transitioning of grassed grazing lands into vegetated ecosystems supporting habitat for the koala and GHFF. In total the entire 66 ha is proposed for revegetation / habitat creation. Revegetation is a high cost and high labour intensive task from preparation to commencement through to the first 5 years of establishment. To maximise success revegetation is proposed in three (3) tranches of work (3 x 22ha tranches). Only planning and preparation works are proposed within year 1 of the offset while collected site seed is propagated and harvested for use in the on-site nursery. A minimum of 1 tranche per 12 months will be completed within years 2-4.

Where vegetation does occur within the Environmental Management Zone, transects have been completed in accordance with the Modified Habitat Quality Assessment (Koala) and Grey-headed Flying-fox Foraging Habitat Assessment tools to establish a base score. The Environmental Management Zone scored a 3/10 under this system for Koala habitat and a 3/10 for GHFF foraging habitat. Refer to **Attachment A** for the detailed MHQA and GHFF FHA transect results. As areas are revegetated new transect locations will be established for future monitoring, however in years 1-5 for revegetation areas transect surveys will be replaced by a mix of photo monitoring / stem count / mortality rate and Projective Foliage Cover. After 5 years of established and maintained growth habitat quality transects will be re-introduced as part of survey and monitoring.

Table 10: Offset Area – Action 6 – Management Actions

Action Description: *What are the tasks proposed?*	– Ceasing grazing uses within areas identified for revegetation. – Tilling / cultivating grazing grassed area for treatment of pasture grass seedbank in preparation for planting. – Revegetation in accordance with the pre-clear regional ecosystem planting mix inclusive of canopy species dominated by Grey-headed Flying-fox foraging tree species and primary and secondary Koala food tree species. – Monitoring and maintaining works to self-sustaining regrowth community.
Action Location(s): *Where on site is the action proposed?*	– The entirety of the EMZ is to be revegetated.
Action Timing: *When and how will the action / task be implemented, started, completed?*	<u>Year 1</u> – Finalise locations, sequence and timing for revegetation program. – Cultivate and prepare Tranche 1 (22 ha) area in preparation for year 2 planting. – Create Tranche 1 water source for revegetation establishment (where necessary) (purpose located dam, temporary tank or broadscale irrigation) – Establish photo monitoring points and protocols for Tranche 1 areas (georeferenced star picket at photo monitoring locations) <u>Year 2</u> – Complete Tranche 1 revegetation zone (22 ha) – Cultivate and prepare Tranche 2 (22 ha) area in preparation for year 3 planting. – Establish photo monitoring points and protocols for Tranche 2 areas (georeferenced star picket at photo monitoring locations) <u>Year 3</u>

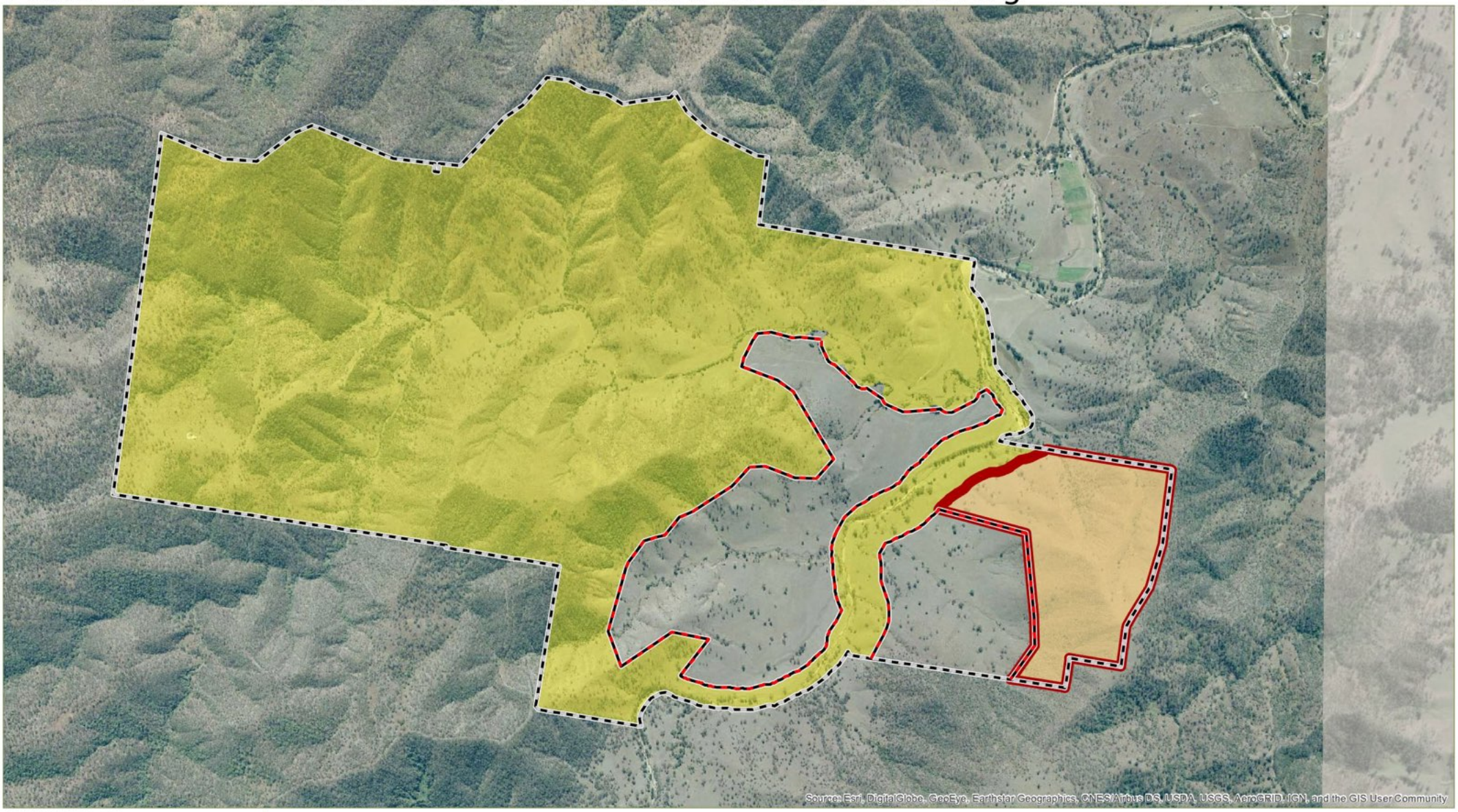
	– Complete Tranche 2 revegetation zone (22 ha) – Cultivate and prepare Tranche 3 (22 ha) area in preparation for year 4 planting. – Establish photo monitoring points and protocols for Tranche 3 areas (georeferenced star picket at photo monitoring locations) – Monitor and maintain Tranche 1 (22 ha revegetation zone) Year 4 – Complete Tranche 3 revegetation zone (22 ha) – Establish photo monitoring points and protocols for Tranche 4 areas (georeferenced star picket at photo monitoring locations) – Monitor and maintain Tranche 1 & 2 (44 ha revegetation zone) Year 5-20 – Monitor and maintain Tranche 1 - 3 (66 ha revegetation zone) inclusive of rectification and replacement works for failed areas or plant dieback. Year 10 – Complete transect surveys in accordance with the Modified Habitat Quality Assessment (Koala) and Grey-headed Flying-fox Foraging Habitat Assessment tools within established revegetation zones. – Undertake Koala Spot Assessment Technique to derive koala occurrence category for revegetation zones. – Report on results of both surveys within the Year 10 Offset Area Annual Report inclusive of any adaptive management changes. Year 15

	– Complete transect surveys in accordance with the Modified Habitat Quality Assessment (Koala) and Grey-headed Flying-fox Foraging Habitat Assessment tools within established revegetation zones. – Undertake Koala Spot Assessment Technique to derive koala occurrence category for revegetation zones. – Report on results of both surveys within the Year 15 Offset Area Annual Report inclusive of any adaptive management changes. Year 20 – Complete transect surveys in accordance with the Modified Habitat Quality Assessment (Koala) and Grey-headed Flying-fox Foraging Habitat Assessment tools within established revegetation zones. – Undertake Koala Spot Assessment Technique to derive koala occurrence category for revegetation zones. – Report on results of both surveys within the Year 20 confirming targeted improvements in the quality condition scoring has been achieved.
Responsibility: *Who will complete the action and who will provide the funding?*	The Offset Provider is responsible for: – Funding the appointment of trained and experienced Bushland Regenerators or Revegetation contractors for the completion of all implementation works associated with revegetation areas (site preparation, planting, establishment and maintenance) – Commissioning and funding tertiary trained ecologists for the survey, monitoring and reporting of interim and milestone revegetation outcomes. – Preparing and issuing Offset Area Annual Reports to the proponent within contracted timeframes for inclusion in the Approved Project ACR.
Measured & Monitored By: *How will the action be measured, how will the outcome of the action*	– Achievement of the following results from replicated transects surveys completed in accordance with the Modified Habitat Quality Assessment (Koala) and Grey-headed Flying-fox Foraging Habitat Assessment tools:

be measured, by what method and timing?	<u>For Koala Habitat (utilising the MHQA)</u>: – Environmental Management Zone 1 (Cleared Land / Category X) – Base score **[3/10]** – Year 10 score **[5/10]** – Year 15 score **[7/10]** – Year 20 score **[8/10]** <u>For Grey-headed Flying-fox Foraging Habitat (utilising the GHFF FHA)</u>: – Environmental Management Zone 1 (Cleared Land / Category X) – Base score **[3/10]** – Year 10 score **[5/10]** – Year 15 score **[7/10]** – Year 20 score **[8/10]** – Evidence within photo monitoring of established habitat containing Koala food and habitat trees and Grey-headed Flying fox foraging trees. Plan of completed revegetation extent in Years 2-4 Offset Area Annual Reports demonstrating sequential completion of all 3 tranches of revegetation. Spot Assessment Techniques (SAT) surveys showing the establishment of koala usage within the habitat creation zones (presently no habitat so no usage) Reporting on revegetation activities will occur with each 12 month Offset Area Annual Report with major surveys results and adaptive management changes documented at Year 10, 15 & 20.

Risks & Adaptive Management: *what's the procedure for correcting or amending the action if the proposed outcomes are not being achieved?*	The potential for large scale revegetation to fail can occur from controllable factors (poor soil preparation, planting stock or maintenance regime) or external events (extreme frost, pest invasion, drought, flood or major wind). Losses from these factors will be catered for in two ways: 1) Contractual obligations of appointed bushland regenerators or revegetation contractors to ensure retention funds and minimum success rates (eg contractor responsible for replacement and re-establishing failed stock or areas). 2) Contractor & Offset Provider will have insurance for major external events. Criteria for successful offset outcomes for this zone are established in this management plan and the approval of the project. If revegetation fails, it will need to be replaced. If growth rates are below expectations the tenure of the offset period will increase until targeted outcomes have been demonstrated as achieved.

PLAN 6- Indicative Offset Area Fencing



FILE NAME: OEs_2 PLAN 6 Fencing V1
VERSION 1

Avonvale & Cherry Gully Stations - Offset Management Plan (OEs2)

0 200 400 800 m

26/06/2020 *1:17,500*

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References - © State of Queensland (Department of Natural Resources, Mines and Energy) 2019

Legend

- Existing Cherry Gully Station offset area
- Cherry Gully East offset area
- Existing Property Fence
- New Offset Area Fencing
  * New Fencing to be fauna friendly cattle exclusion fencing

Offset design areas

- ENVIRONMENTAL MANANGEMENT ZONE - Open Grazing Country - Category X vegetation [66.0 ha]

One Environment

6. Risk Assessment & Management

A limited number of risks associated with climate change, pest control, large scale rehabilitation and grazing land uses are evaluated for the Offset Site. Risks are generally described and assessed against the likelihood and consequence model outlined in the Commonwealth Government's Department of Environment – *Environmental Management Plan Guidelines* (2014). The following risk factors are considered in more detail in this OMP:

1. Climate Change Risk 1 – Wildfire
2. Climate Change Risk 2 – Flooding
3. Climate Change Risk 3 – Drought
4. Climate Change Risk 4 – Climate Factors – Shifting Habitat Range
5. Planting Stock Failure
6. Pest Management (Feral Dog Populations)
7. Weed Invasion / Expansion (Weeds of National Significance – Lantana)
8. Stock Management, Unlawful Access & Land Clearing (Cattle Operations Impacts)

6.1. Climate Risk 1 – Wildfire

The offset land retains little to no existing vegetation, however, its proximity to surrounding vegetation increases the risk of wildfire on the site, and as such, it is reflected as medium to high and very high-risk fuel loads for wildfire in both State Government and Somerset Regional Council Mapping (Refer FIGURE 5 for Wildfire Hazard Mapping). The last recorded wildfires within the vicinity of the Offset Site occurred in September 2018 and involved the evacuation of some residents of the adjoining Toogoolawah Township. Cherry Gully East was not affected by these fire events. The offset land retains limited vegetation interspersed with open pasture land and includes a system of boundary line firebreaks and access tracks for the protection of stock and farming infrastructure. This fire management system will be maintained and evolved as parts of the site transfer from open pasture to revegetation as specific Offset Works are sequentially completed.

The overall assessment of Wildfire Risks is that their occurrence is possible within the life of the offset and consequences of such an event would be moderate. Without intervention and management Wildfire is evaluated as a MEDIUM Risk to this offset project.

Climate Risk 1 – Wildfire: Risk Evaluation

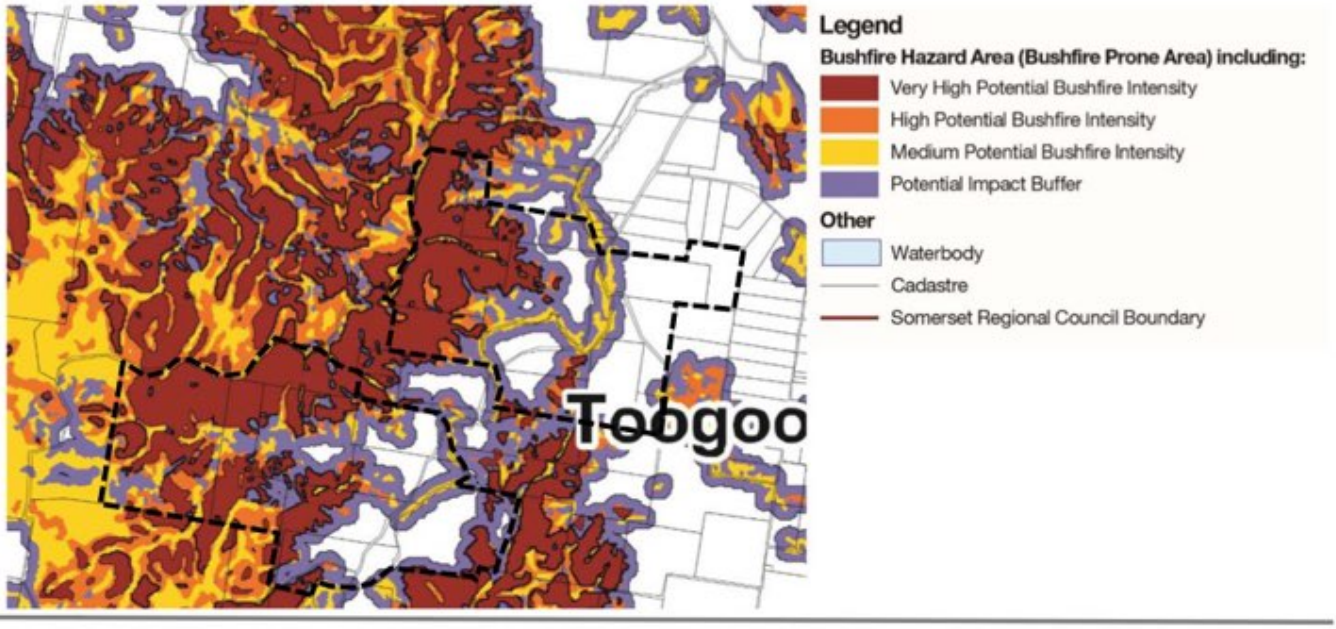
Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Possible	Might occur during the life of the project
Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)	
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts

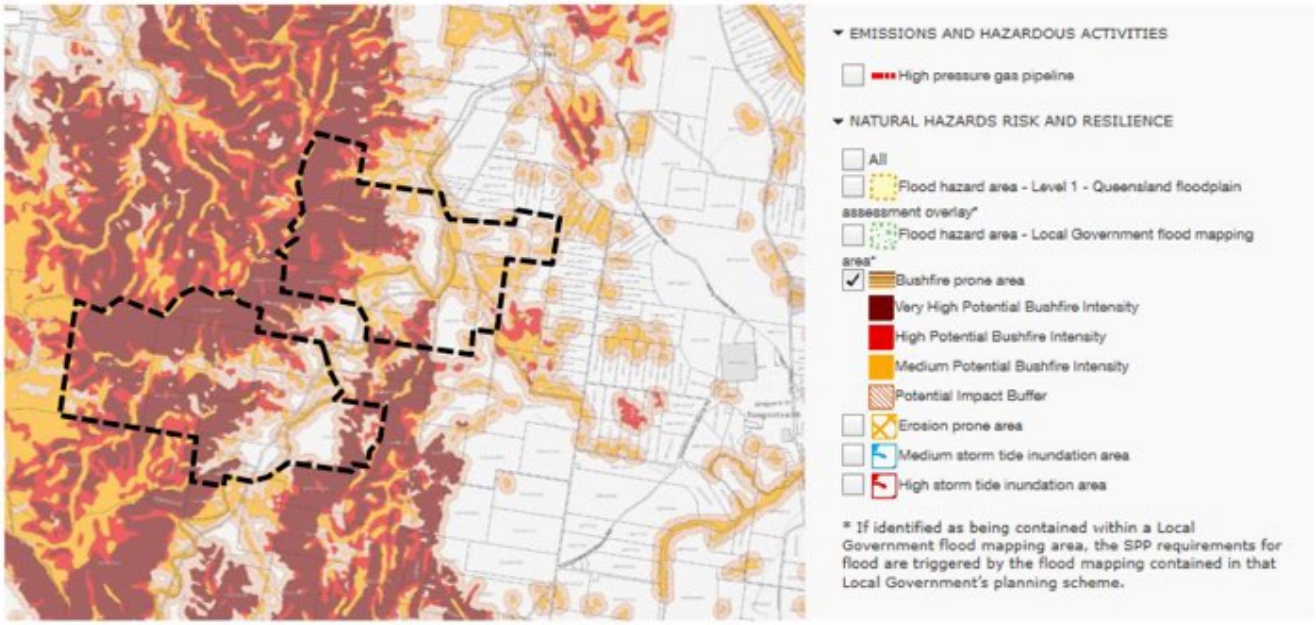
	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Possible	*Low*	**Medium**	*Medium*	*High*	*Severe*

Climate Risk 1 – Wildfire: Risk Management Actions (Refer TABLE 9 for Detailed Wildfire Management Actions)

- Maintain the existing bushfire breaks between adjacent land holders and access tracks through and around areas of mature and regrowth vegetation.
- Establish new tracks and fire breaks as necessary as part of the increased vegetation cover created through revegetation and rehabilitation.
- Establish an Offset Area Wildfire Management Plan which caters for excessive dry periods and or high risk build up of wildfire fuel loads. If necessary undertake mosaic understorey low intensity back burning exercises to reduce fuel load risks.
- Work with local Qld Rural Fire Brigade, Somerset Regional Council Representatives and adjoining land owners to minimise wildfire risks at the regional scale.
- Consider taking out insurance for plant stock replacements.

Figures 5: Somerset Regional Council – Bushfire Hazard Area and Queensland Government State Planning – Natural Hazard Risk and Resilience Mapping





6.2. Climate Change Risk 2 - Flooding

The local township of Toogoolawah and surrounding creek and river catchments are known for periodical flooding. The offset land retains only small sections located directly along Ivory Creek which is mapped or known for any level of even minor flooding (Refer FIGURE 6 for Potential Flood Hazard areas mapped by State and Local Government). The area affected by the minor flooding is not associated with this offset. The Ivory Creek corridor is included as part of the other approved offset. As the entirety of the offset is outside of potential flood prone areas, the potential flood risk is considered low and more applicable to impacting replanting efforts associated with previously approved offset.

Climate Change Risk 2 - Flooding: Risk Evaluation

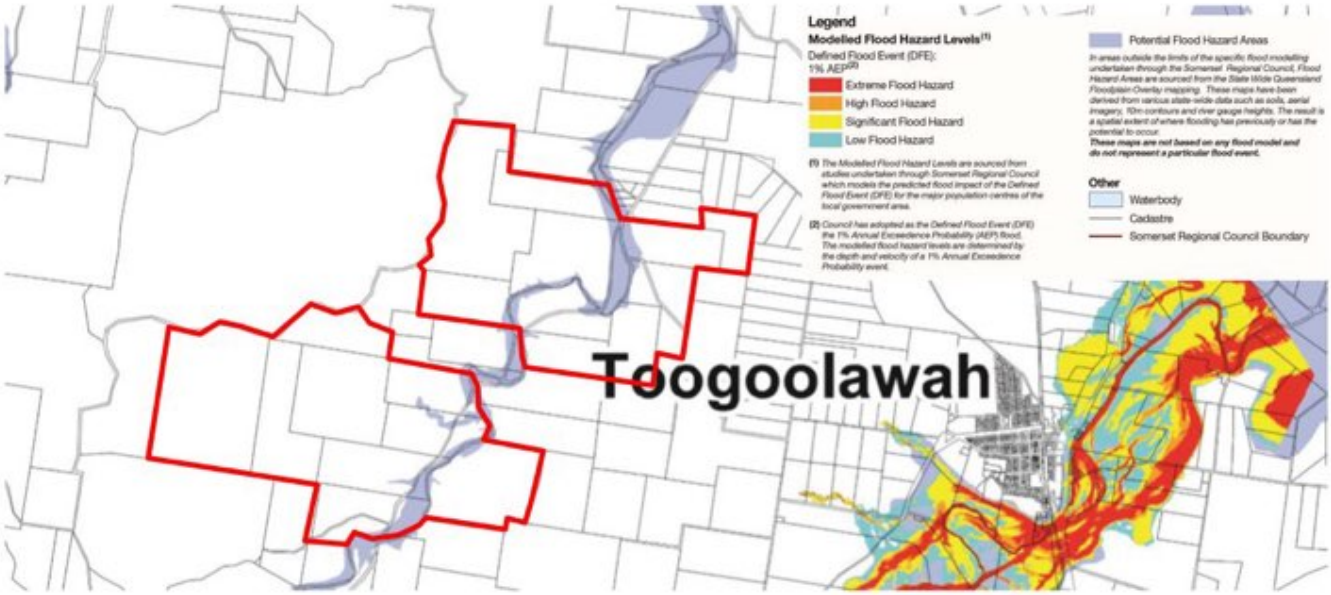
Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Possible	Might occur during the life of the project
Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)	
Minor	Minor incident of environmental damage that can be reversed

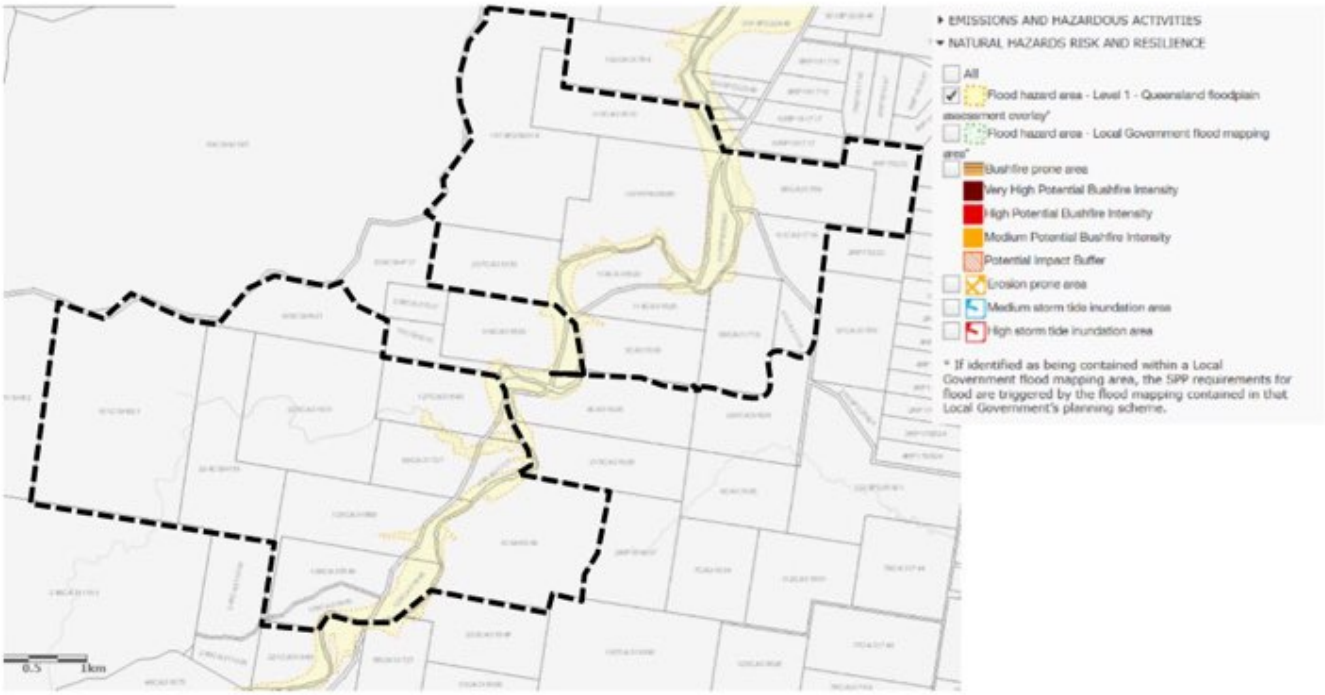
	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Possible	**Low**	*Medium*	*Medium*	*High*	*Severe*

Climate Change Risk 2 - Flooding: Risk Management Actions

- Include stabilization matting, tree stakes, etc for plantings within higher risk zones of erosion from rising flood waters or fast movement channel or embankment flows.
- Consider taking out insurance for planting stock located within adjacent to the flood zone to cover the cost of replacement works should a damaging rain / flood event occur.

Figure 6: Somerset Regional Council – Modelled Flood Hazard Levels and Queensland Government State Planning – Flood Hazard Mapping





6.3. Climate Change Risk 3 - Drought

In March 2017 the Queensland Government declared the Somerset Region amongst a number of Local Government Areas as a drought area for the purposes of accessing funding and concessions for rural land holders. This declaration remains in 2020 despite several localised recent rain events. The average rainfall in in 2019 at the nearest rain gage to the offset site recorded 431.60 mm. This is down on the 81 year mean rainfall for the region of 987.7mm by 556.10 mm. Review of historical rainfall data indicates that the last time Toogoolawah experienced annual rainfall less than 430 mm was in 1977 (annual rainfall of 366 mm), further supporting the unprecedented impacts of the drought.

Contrastingly, to date in 2020 (up to June), Toogoolawah has received 538.8 mm of rain, which is on track to exceed to annual rainfall amount.

The Climate Change Adaptation Strategies for the Koala prepared by Christine Adams-Hosking concluded that the highest probability of koala presence occurred at a mean annual rainfall of 700mm *(Adams-Hosking, et al, 2011)*. Therefore, despite unprecedented drought conditions, the offset site maintains rainfall similar to the optimal range to support koala presences.

Climate Change Risk 3 - Drought: Risk Evaluation

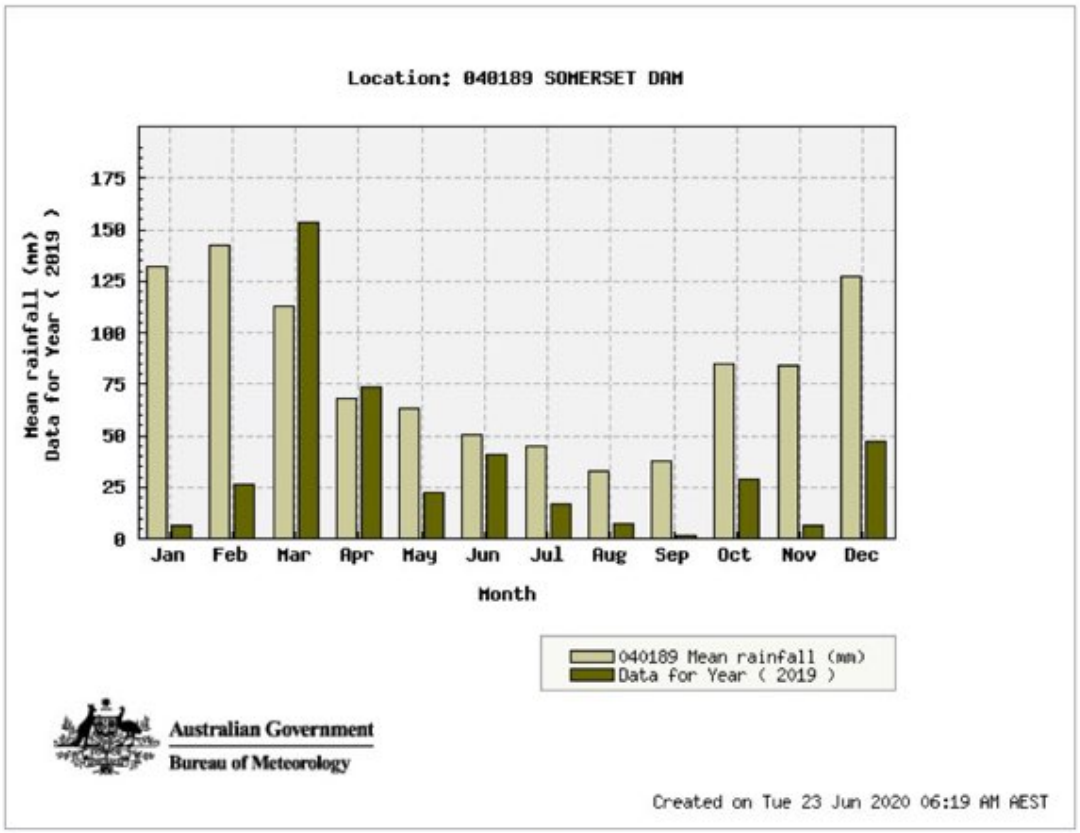
Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)					
Likely			Will probably occur during the life of the project		
Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)					
Minor			Minor incident of environmental damage that can be		
	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Possible	**Low**	*Medium*	*Medium*	*High*	*Severe*

Climate Change Risk 3 - Drought: Risk Management

- Ensure offset design includes replanting and connection to higher moisture content soils associated with alluvial and riparian areas of the site.
- Maintain site dams and waterbodies for use in offset rehabilitation works and as water sources for native animals.
- Consider small 'turkey' dams as part of upper ridge rehabilitation for the purposes of water access for fauna and the creation of patches of high moisture soils and vegetation.

Figure 7: 2019 Mean Rainfall (Drought Declared Period) / 82 Year Mean Rainfall

(Source: BOM Website - http://www.bom.gov.au/jsp/ncc/cdio/cvg/av *- Date Searched 16/04/19)*



Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years
Mean rainfall (mm) for years 1936 to 2020	131.9	142.8	113.2	67.8	63.6	50.5	44.7	33.3	37.6	85.0	84.3	127.6	982.4	83
Statistics	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**	**Years**
Rainfall (mm) for year 2019	*6.2*	*26.8*	*153.8*	*73.6*	*22.2*	*41.0*	*17.2*	*7.0*	*1.6*	*28.6*	*6.4*	*47.2*	*431.6*	1

6.4. Climate Change Risk 4 – Climate Factors – Shifting Habitat Range

A number of contemporary case studies and research papers have investigated the combined weather characteristics of climate change on the current and future distribution of suitable Koala habitat into the future. Koalas are considered to be at risk of these factors because of their low tolerance to adapt to environmental changes combined with the number of existing non climate related threats already well documented. More recently both species and their habitat have been effected nationally by the 2019-2020 bushfires. GHFF are also considered to be effected by climate change, however most studies relate to the increased temperatures at the camp and roosting sites, with less material available on their foraging range. The proposed offset provides foraging habitat and thus not directly influence temperatures at the roosting locations, which periodically shift for a range of factors.

The Climate Change Adaptation Strategies for the Koala by Christine Adams-Hosking *applied climate change distribution models for the koala and five of its essential eucalypt food trees to a conservation prioritisation framework ('Zonation'), to determine which Queensland local government areas (LGAs) were the highest priority for koala conservation and adaptation.* The study included current (2011) and future predicted koala habitat distribution in 2070 showing a substantial migration easterward. The study further concludes that:

"The highest probability of koala presence occurred at a mean maximum summer temperature of approximately 27oC and a mean annual rainfall of approximately 700 mm" (Adams-Hosking, C., Grantham, H. S., Rhodes, J.R., McAlpine, C. and Patrick T. Moss (2011). Modelling climate-change-induced shifts in the distribution of the koala. Wildlife Research, 38, 122–130)

As previously stated the offset land average rainfall in 2019 was 431.60 mm down on the 82-year average of 987.7mm, however these results have occurred while the LGA was declared in a drought situation, with the last time the region experienced rainfall this low being 42 years prior. Additionally, the mean recorded minimum and maximum temperatures for the region are 13.5 to 26 degrees, thus even with predicted temperature increases the offset land would remain around the noted 27 degree mean maximum parameter of the study. The land is also located within the current and 2070 koala habitat distribution maps based on the A1F1 climate change scenario *(Adams-Hosking, et* al, 2011). Refer to FIGURE 8 for estimated location of the Offset Site based on predicted changes in habitat distributions in 2070.

At the site scale the offset design is founded in the re-establishment of connected koala habitat along riparian creeks and drainage lines and through higher moisture content alluvial soils. The design will connect existing low range and foothill habitat with creek flats and riparian vegetation communities.

Climate Change Risk 4 – Climate Factors – Shifting Habitat Range: Risk Evaluation

Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Likely	Will probably occur during the life of the project
Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)	

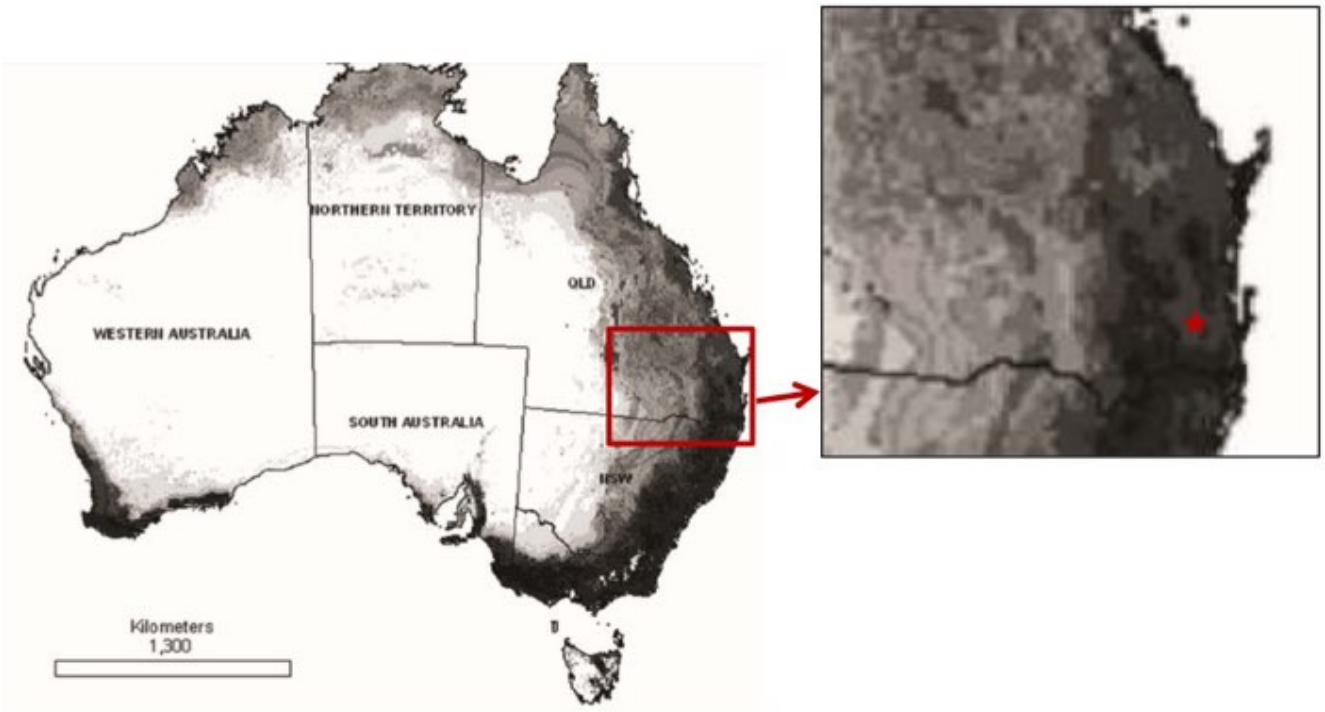
	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Likely	**Low**	*Medium*	*High*	*High*	*Severe*
Minor			Minor incident of environmental damage that can be reversed		

Climate Change Risk 4 – Climate Factors – Shifting Habitat Range: Risk Management

- Actions listed in the Risk Management sections for Wildfire, Flood and Drought (Tables 4, 5 and 6 of Section 5.0)

Figure 8: Modelled Habitat Distribution (2011 V 2070)

(Source: Adams-Hosking, et al, 2011)



6.5. Planting Stock Failure

The entirety of the Cherry Gully East Offset Area design requires significant wholesale replanting. In projects which include large areas of wholesale planting the risk exists for planting stock to fail in large volumes due to:

- Poor soil quality or incompatible match of soils to replanted vegetation types.
- Weather related impacts – frost / prolonged dry periods, excessive heat or cool periods
- Poor quality planting stock or the sourcing of planting stock from a different geographic region
- Lack of appropriate planting area preparation – weed removal / pasture seed removal / cultivation, etc.

The majority of these challenges are expected to be managed through the use of experienced bushland regeneration experts and contractors with relevant insurance and payment retentions. Failure of planting stock is primarily an economical impact for this project as the Offset Area will not achieve committed condition improvement and habitat expansion targets without rectification of planting works. An important component of the offset proposal is the utilization of the established on-site nursery and the direct harvesting of tree species seedlings form vegetated zones within the offset land.

Planting Stock Failure: Risk Evaluation

Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Possible	Might occur during the life of the project
Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)	
Minor	Minor incident of environmental damage that can be reversed

Planting Stock Failure: Risk Management

	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Possible	**Low**	*Medium*	*Medium*	*High*	*Severe*

- Source plant seed stock and base soil from the Offset Site. Germinate and propagate site seed stock into tube stock at purpose built Offset Site nursery.
- Undertake soil testing for both the modified planting soil and for the planting locations.
- Match species to pre-clear regional ecosystem vegetation communities based on geography, soil and region specifications.
- Undertake planting in manageable mosaic to ensure monitoring, watering etc can be implemented as required.
- Use experienced contractors and bushland regenerators to undertake all revegetation and rehabilitation works. Ensure selected contractors included relevant insurances and payment retentions for success rates from part of contract obligations.
- Over plant all revegetation areas by 10% on allocated numbers to cater for a natural 10% failure rate.
- Undertake planting during warmer frost-free months.

6.6. Pest Management (Feral Dog Populations)

The Queensland Government Department of Agriculture & Fisheries (DAF) – Biosecurity Queensland map feral dogs through the Somerset Regional Council Area as 'common'. Feral dogs are listed as a 'class 2' pest in the Somerset Regional Council Pest Management Plan and noted with in many newspaper articles and Council's minutes as increasing in population and incidence since 2013. Council have introduced a feral dog bounty program providing $25 to private land holders per wild animal scalp delivered as evidence. Council also provides baiting and training on use of baiting to land holders, however do not retain their own pest management officer.

Site surveys located feral dogs, throughout the broader Avonvale and Cherry Gully Stations. Additionally, the remnants of a dead koala was recorded on-site with evidence suggesting the mortality was most likely the result of a dog attack.

Data shows 23 records within 10km of the Offset Site (primarily between the site and the Toogoolawah Township). Seven (7) of these records list the animals as either dead or injured. While the data does not provide a cause for the injury 6 of the 7 death / injury records based on location are considered to be the result of either feral dog or domestic dog attack. One (1) of the records is located immediately adjacent to the Brisbane Valley Highway and thus is assumed as vehicle strike. The remaining 6 records occur within large partially vegetated rural land holdings without evidence of recent clearing thus increasing the likelihood of dog attack as death or injury cause.

Evidence collected from the Offsite Site and regional and local records show without intervention feral dogs are likely within the Offset Area. The consequences of wild dog and koala interactions are well documented and thus the impact and risk of uncontrolled feral dogs through the Offset Area is evaluated as a High Risk.

Pest Management (Wild Dog Populations): Risk Evaluation

Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Likely	Will probably occur during the life of the project
Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)	
High	Substantial instances of environmental damage that could be reversed with intensive efforts

	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Likely	*Low*	*Medium*	**High**	*High*	*Severe*

Pest Management (Wild Dog Populations): Risk Management

- Undertake baseline and periodical surveys and monitoring of feral dog populations, locations and dispersal patterns within the Offset Site (Survey methods to include – direct observation / remote sensor camera and infra-red drone / sand traps for print record). Develop a base line of wild dog populations and 'hot spots' and key activity periods (eg dusk).
- Develop a purpose built offset site Pest Management Action Plan – method to include trapping, shooting, baiting. Develop an adaptive management approach to pest management which considers each method relative to the base line data collected to determine the most effective pest management measures for the offset site.
- Undertake stakeholder engagement with immediate land holders to foster joint sub regional scale action plan.
- Establish contact and recommended approaches with relevant Council staff (or contractors) undertaking similar works within the broader Somerset Region.

6.7. Weed Invasion / Expansion - *Lantana*

Preliminary site surveys and observations over the Cherry Gully East offset area recorded a number of weed species, three (3) of which are scheduled as declared weeds under the *Land Protection (Pest and Stock Route Management) Act 2002* or now listed as 'restricted invasive' plants under the *Biosecurity Act 2014*. The most regularly recorded and in locations abundant species are *Lantana camara* and *Lantana montevidensis*. The Queensland Government Department of Agriculture and Fisheries (DAF) maps the Somerset Region as containing widespread common and abundant infestations of Lantana. The Somerset Regional Council 2013-2018 Pest Management Plan schedules Lantana amongst the priority pest species noting it as abundant and widespread through the region with a 'high' capacity to spread and a 'low' capacity for Council to successfully control.

Lantana is a Weed of National Significance under the EPBC Act. In 2006 Lantana was nominated by the **NSW Government Office of Environment and Heritage** to be listed as a key threating process under the EPBC Act:

"The invasion, establishment and spread of Lantana camara impacts negatively on native biodiversity including many EPBC listed species and communities."
(Source: Key Threatening Process Nomination Form)

Lantana infestations suppress and inhibit the natural regeneration of regrowth vegetation on-site which directly limits the growth rates and regeneration of primary and secondary koala tree species and Grey-headed Flying Fox foraging species. Although baseline data is limited to the survey events undertaken for this EPBC Application research infers the highly invasive and spreading nature of the species, coupled with the in-active management in areas would be resulting in a progressive increase as local climatic events align with optimal germination and seeding periods. In areas blanket layers of Lantana additionally form a barrier to terrestrial species, which would include limiting the koala's ability to access areas containing and over-canopy of koala food trees (many of these areas were impenetrable for human survey).

Weed Invasion / Expansion - Lantana: Risk Evaluation

Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Likely	Will probably occur during the life of the project
Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)	
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts

	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Likely	*Low*	**Medium**	*High*	*High*	*Severe*

Weed Invasion / Expansion - Lantana: Risk Management

- Use an Antenna based GPS system to map the full extent (as description polygons) of all Lantana areas within the Offset Area (achieve a total ha extent of weed infestations / occurrences within the Offset Area).
- Exclude stock (cattle) access from Lantana infestation areas within the Offset Area (grazing cattle provide the most continuous source of Lantana spread).
- Undertake detailed weed management control activities within the Offset Area. Methods deployed based on extent of infestation, existing native values, topography, waterways and other sensitive receiving environments:
    - Stick rake, grubbing, ploughing or slashing major accessible areas of Lantana where not on a slope greater than 15% or where no existing native values occur;
    - Apply broadscale herbicide and spot spray during high germination summer periods (Nov-March). Utilise organic based Lantana targeted herbicides which minimise impacts on native vegetation generating within and surrounding Lantana patches.
- Undertake periodical weed maintenance rotations for removal / suppression of Lantana regeneration.
- Incorporate adaptive management principles into weed management methods to streamline overall management to the most effective control types.
- Explore the introduction of biological Lantana control measures to provide a long term (20 year plus) solution for management

6.8. Stock Management, Unlawful Access & Land Clearing (Cattle Operations Impacts)

As noted throughout this OMP Cherry Gully East forms part of the Avonvale and Cherry Gully Stations which are operational cattle stations retaining an active 'Environmental Authority' (Permit F1-0048) under the Queensland Government's *Environmental Protection Act 1994* for the operation of feedlot facilities between 1,000 and 10,000 animals. Both properties have historically retained extensive rotational pasture paddocks and selectively vegetated paddocks for the raising of weaners. The impacts of this operation on the environment occur at both acute (land clearing) and chronic (tordening for cattle grass cover) timeframes.

The risks of ongoing cattle grazing on the land could vary from low to medium to high subject to the future maintenance or expansion of the grazing use which is driven by a number of economical factors, however primarily the rise and fall of the cattle price. Regardless the long term and current highest and best use for the land is the continuation of the feedlot operation. No reduction in risk or improvement in condition or value of the koala and Grey-headed Flying-fox habitat will occur without direct intervention and a change in use (such as this and the offset outcome established through EPBC 2015/7530).

The Offset Site is surrounded to the north, east and south by large cattle grazing land holdings and a number of smaller agricultural farms. On land holdings at this scale the it is common for neighbours to access and muster through un-owned adjoining land parcels to connect fragmented land holdings. Additionally, an adjoining land holder may cut a new access track in adjoining unowned land without permission because of the perceived benefit to both parties, which is typically the case in farming operations.

The impacts of unlawful access and stock mustering mimic those listed in the 'general stock management' section of this management plan (trampling, compacting, weed spread, fence destruction).

Stock Management, Unlawful Access & Land Clearing (Cattle Operations Impacts): Risk Evaluation

Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Likely	Will probably occur during the life of the project
Qualitative measure of consequences (what will be the consequence/result if this issue does occur rating)	
Minor	Minor incident of environmental damage that can be reversed

	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Likely	**Low**	*Medium*	*High*	*High*	*Severe*

Stock Management, Unlawful Access & Land Clearing (Cattle Operations Impacts): Risk Management

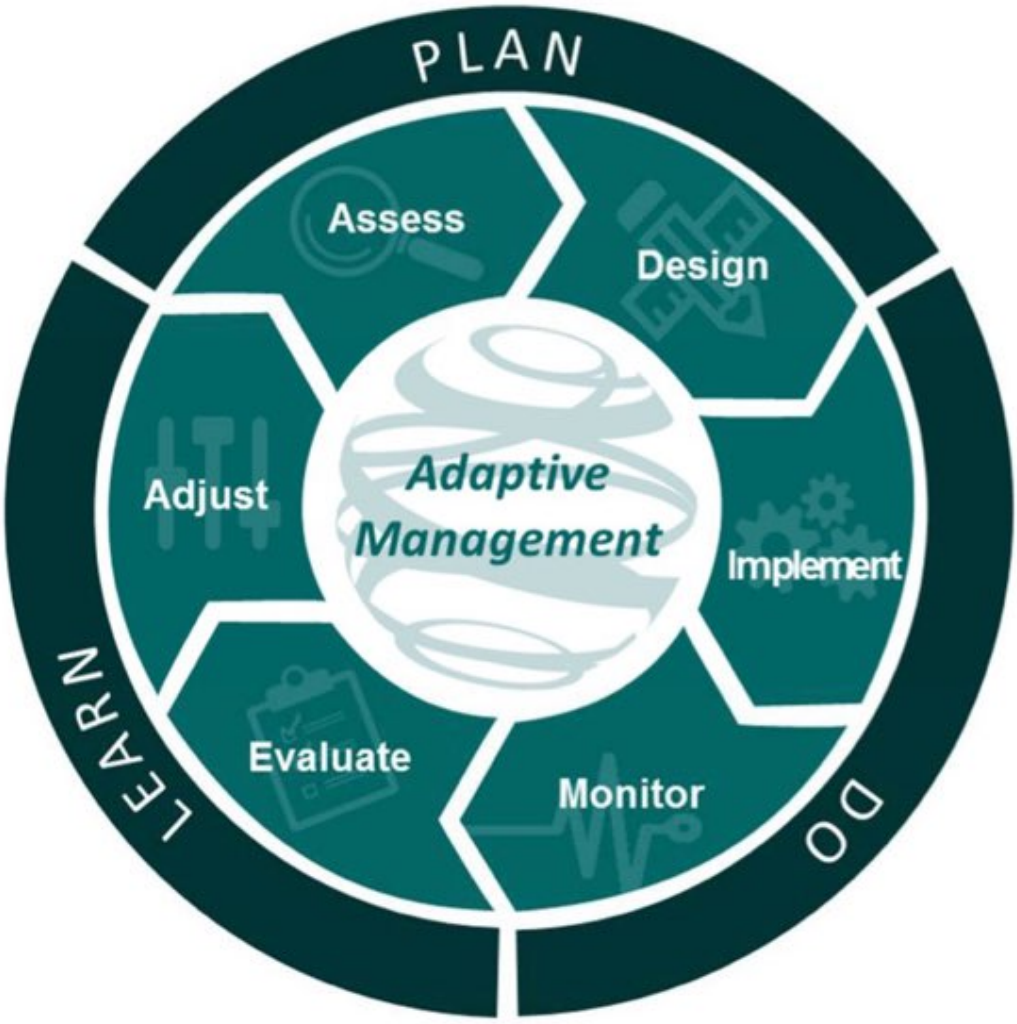
- Two important controls which significantly reduce the risk of Stock Management, Unlawful Access & Land Clearing (Cattle Operations Impacts) on the Offset Area are:
    - The land is being is owned by the Offset Provider (any residual grazing uses will be secondary land uses to the approved offset outcomes)
    - The Voluntary Declaration (VDEC) provides a legally binding mechanism for the protection of existing and created values. The VDEC applies the regulations of the *Vegetation Management Act 1999* to the land title which remains regardless of the transfer of ownership or sale of the land.
- Progressive stock exclusion fencing is to be installed to the extent of the Offset Area (Refer to PLAN 10 for Indicative Offset Area Fencing Plan).
- Consultation on the Offset Area and third party access for mustering / access will occur with adjoining land holders.

7. Adaptive Management / Reporting

This Offset Management Plan adopts a number of 'adaptive management' procedures both as a governing principle and within specific management activities. Most management activity table topics incorporate detailed baseline survey and data collection to be periodically repeated through the Offset Period and utilised for iterative changes to management implementation, particularly for stochastic habitat risks and threats. The primary purpose of adaptive management procedures for the Cherry Gully East Offset site is to allow on-ground monitoring and experiences on the most effective measures to feed into amendments to the OMP which focus on best return in Grey-headed Flying-fox and Koala Habitat outcomes for investment made.

"Adaptive management is a systematic approach for improving environmental management by learning from management outcomes. We believe that protected areas management can benefit greatly from this approach which allows management to proceed despite uncertainty, and reduces this uncertainty through a systematic process for learning."
(Murray, 2019 - http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.137.9484)

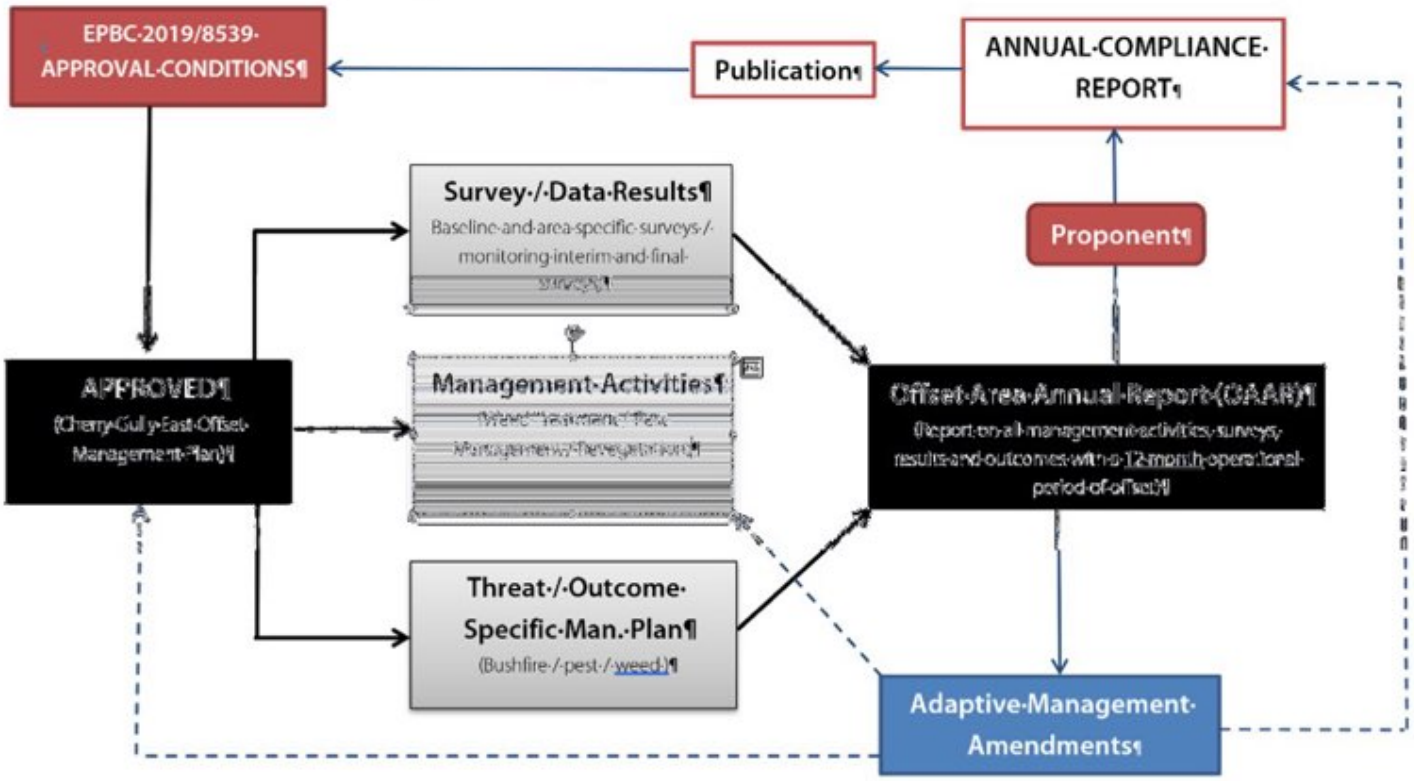
Figure 9: Adaptive Management Model
(https://essa.com/approach/)



7.1. Offset Management Plan Reporting Structure

As part of the commercial agreement between the Proponent and One Environment all surveys, results, management activities statuses, alterations or amendments are recorded within an Offset Area Annual Report (OAAR). By executed contract each Offset Area Annual Report is to be completed by the Offset Provider (One Environment) and issued to the Proponent within 30 business days of each 12 months anniversary of the publication of this Offset Area Management Plan (9 February 2022). This commitment is purposely documented to ensure adequate time is provided to the proponent to evaluate and utilise the Offset Area Annual Report in preparing the Approved Action Annual Compliance Report. Although the reports precise inclusion in the ACR will be dictated by the proponent it is forecasted the Offset Area Annual Report will be an appendices to the ACR with specific aspects relevant to conditioned offset outcomes extracted and referenced within the compliance tables.

Figure 10: Offset Actions Reporting Structure



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9. Attachments

Attachment A – MHQA & GHFF FHA

Modified Habitat Quality Assessment Tool (EMZ 1 – Open Grazing Country)

Attribute	Condition Characteristics	Score (RE12.11.14)	Values Increase 'WITH' Offset	Score (RE12.11.14)
Site Condition (40%)	Recruitment of woody perennial species in EDL	0/5	The site condition of the open grazing country (EMZ 1) is proposed to undergo weed removal and management (Action 2), stock management (Action 3), access management, trespass and neighbouring stocking mustering controls (Action 4), wildfire management (Action 5), native seed collection and propagation (Action 6) and revegetation (habitat creation) activities (Action 7). Implementation of these management actions throughout the open grazing country (EMZ 1) in accordance with the Offset Management Plan will support the transition to regrowth and remnant vegetation communities across the offset sites.	3/5
	Native plant species richness – trees	0/5		5/5
	Native plant species richness – shrubs	0/5		5/5
	Native plant species richness – grasses	2.5/5		5/5
	Native plant species richness – forbs	0/5		2.5/5
	Tree canopy height	0/5		5/5
	Tree canopy cover	0/5		5/5
	Shrub canopy cover	5/5		5/5
	Native grass cover	5/5		5/5
	Organic litter	0/5		5/5
	Large trees	0/15		5/15
	Coarse woody debris	5/5		5/5
	Non-native plant cover	5/10		10/10
	Quality and availability of food and foraging habitat	1/10		10/10
	Quality and availability of shelter habitat	1/10		10/10
	Site Condition Score	**24.5/100**		**85.5/100**
	Site Condition Score (out of 4)	**0.98**		**3.42**
	Average Site Condition Score (out of 4)	**0.98**		**3.42**
Site Context (30%)	Size of the patch	10/10	As part of the offset, the Offset Management Plan is to include an adaptive 'Vertebrate Pest Management Program' (Action 1) which will be implemented in collaboration with: - Somerset Regional Council and the Regional Pest Management Representative; and - Surrounding rural land holders and operating agricultural businesses. The implementation of this program for the life of the offset will result in an extremely low potential for wild dog attacks causing severe injury and death on Koalas. Through the implementation of Action 7 (revegetation (habitat creation) activities), in conjunction with Action 1, the species mobility capacity of the Koala will increase considerably.	10/10
	Connectedness	4/5		4/5
	Context	4/5		4/5
	Ecological corridors	6/6		6/6
	Role of site location to species overall population in the State	5/5		5/5
	Threats to the species	1/15		15/15
	Species mobility capacity	4/10		7/10
	Site Context Score	**34/56**		**51/56**
	Site Context Score (out of 3)	**1.82**		**2.73**
	Average Site Context Score (out of 3)	**1.82**		**2.73**

Species Stocking Rate (30%)	Koala Stocking Rate (refer to **Table OC18**)	5/70	Through the implementation of the Offset Management Plan and the following management actions, the threatening processes that would otherwise advance in extent and severity of impact on Koala habitat is reduced. The management actions to be implemented across the open grazing country (EMZ 1) are: - Action 1: Vertebrate Pest Management (primarily targeting wild dogs); - Action 2: Weeds of National Significance (reduction and management); - Action 3: Stock Management; - Action 4: Access Management, Trespass and Neighbouring Stock Mustering Controls; - Action 5: Wildfire Management; - Action 6: Native Seed Collection and Propagation; and - Action 7: Revegetation (Habitat Creation) Activities. These management actions and monitoring regime over the 20-year loss averted period is reasonably anticipated to lead an increase in the Koala population and surge toward the Koala carrying capacity of the site.	35/70
	Species Stocking Rate Score	**5/70**		**35/70**
	Species Stocking Rate Score (out of 3)	**0.21**		**1.50**
	Average Species Stocking Rate Score (out of 3)	**0.21**		**1.50**
Total (out of 10)		**3.02 (rounded to 3.00)**		**7.65 (rounded to 8.00)**

Species Stocking Rate Scores (present and future) (EMZ 3 – Open Grazing Country)

Species Stocking Rate Table		
Attribute	**Present Value**	**Future Value**
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	5/10	10/10
Species usage of the site (habitat type and evidenced usage)	0/15	10/15
Approximate density (per ha)	0/30	10/30
Key source population for breeding	0/5	0/5
Key source population for dispersal	0/5	5/5
Necessary for maintaining genetic diversity	0/15	0/15
Near the limit of the species range	0/15	0/15
Total Species Stocking Rate Score	**5/70**	**35/70**
Species Stocking Rate Score – out of 3	**0.21**	**1.50**

Grey-headed Flying-fox Foraging Habitat Assessment (EMZ 1 – Open Grazing Country)

Attribute	Condition Characteristics	Score (RE12.11.14)	Values Increase 'WITH' Offset	Score (RE12.11.14)
Site Condition (40%)	Vegetation condition	5/20	The site condition of the open grazing country (EMZ 1) is proposed to undergo weed removal and management (Action 2), stock management (Action 3), access management, trespass and neighbouring stocking mustering controls (Action 4), wildfire management (Action 5), native seed collection and propagation (action 6) and revegetation (habitat creation) activities (Action 7). Implementation of these management actions throughout the non-remnant areas in accordance with the Offset Management Plan will support the transition to regrowth and remnant vegetation communities across the offset sites and improve GHFF foraging habitat	10/20
	Species richness	5/20		20/20
	Flower score	0/10		8/10
	Timing of biological shortages	0/10		10/10
	Quality of foraging habitat	0/20		20/20
	Non-native plant cover	10/20		20/20
	Site Condition Score	**20/100**		**88/100**
	Site Condition Score (out of 4)	**0.80**		**3.52**
	Average Site Condition Score (out of 4)	**0.80**		**3.52**
Site Context (30%)	Size of the patch	10/10	Site context characteristics for the GHFF are not proposed to increase with an offset. As the size of the patch, connectedness, context, ecological corridors and role of the site location to species overall population in the state are characteristics assessed at a larger scale and encompass external factors, the ability to improve these characteristics through an offset is limited. The threats to the GHFF on the offset sites are limited to non-existent, and therefore achieve a maximum score. It should be noted that as part of the koala offset, the Offset Management Plan is to include an adaptive 'Vertebrate Pest Management Program' (Action 1) which will be implemented in collaboration with: - Somerset Regional Council and the Regional Pest Management Representative; and - Surrounding rural land holders and operating agricultural businesses.	10/10
	Connectedness	6/10		6/10
	Context	6/10		6/10
	Ecological corridors	10/10		10/10
	Role of site location to species overall population in the State	5/10		5/10
	Threats to the species	10/10		10/10
	Site Context Score	**47/60**		**47/60**
	Site Context Score (out of 3)	**2.35**		**2.35**
	Average Site Context Score (out of 3)	**2.35**		**2.35**
Species Stocking Rate (30%)	GHFF Foraging Tree Density	0/30	Through the implementation of the Offset Management Plan and the following management actions, the threatening processes that would otherwise advance in extent and severity of impact on GHFF foraging habitat is reduced. The management actions to be implemented across the open grazing country (EMZ 3) are: - Action 2: Weeds of National Significance (reduction and management); - Action 3: Stock Management; - Action 4: Access Management, Trespass and Neighbouring Stock Mustering Controls; - Action 5: Wildfire Management; - Action 6: Native Seed Collection and Propagation; and - Action 7: Revegetation (Habitat Creation) Activities; These management actions and monitoring regime over the 20 year loss averted period is reasonably anticipated to lead an increase in the GHFF foraging habitat.	21/30
	Species Stocking Rate Score	**1/30**		**21/30**
	Species Stocking Rate Score (out of 3)	**0.30**		**2.10**
	Average Species Stocking Rate Score (out of 3)	**0.30**		**2.10**
Total (out of 10)		**3.45 (rounded to 3.00)**		**7.97 (rounded to 8.00)**

Species Stocking Rate Scores (present and future) (EMZ 1 – Open Grazing Country)

GHFF Foraging Tree Survey	Stem Density Raw Data (per/ha)	Species Stocking Rate Score	Future Species Stocking Rate Score (with 'offset')
1	0 per/ha	1/10	**7/10**
2	0 per/ha	1/10	**7/10**
3	0 per/ha	1/10	**7/10**
Total		**3/30**	**21/30**