

EPBC 2014/7351

Year 5: 12 May 2024 - 11 May 2025

Narangba Quarry, Raynbird Road, Narangba, Queensland, 4504

Prepared for Boral Resources (Qld) Pty Ltd 7 August 2025



| ■ FP | PRC A | nnual C | ompliance | Renort | 2024/2025 |
|------|-------|---------|-----------|--------|-----------|

Declaration of accuracy

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

| Signed | Miller | |
|-----------------------------------|----------------------------|--|
| Full name (please print) | Megan McKinney | |
| Position (please print) | Principal Ecologist | |
| Organisation (please print includ | ing ABN/ACN if applicable) | |
| Saunders Havill ABN 24 | 4 144 972 949 | |
| Date | <u>07 / 08 / 2025</u> | |



Document Control

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2014/7351), prepared by Saunders Havill Pty Ltd for Boral Resources (Qld) Pty Ltd, dated 7th

August 2025.

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Acronyms and Abbreviations

ACR Annual Compliance Report

BMP Bushfire Management Plan, prepared by Land and Environment Consultants.

DAWE Department of Agriculture, Water and Environment (Cth – superseded by DCCEEW)

DCCEEW Department of Climate Change, Energy, the Environment and Water (Cth)
EPBC Environment Protection and Biodiversity Conservation Act 1999 (Cth)

ha hectares

KHMP Koala Habitat Management Plan (EPBC 2014/7351), prepared by Saunders Havill Group, dated

November 2020.

KMP Koala Management Plan, prepared by Saunders Havill Group, dated October 2016.

km kilometres m metres

CoMB City of Moreton Bay

MNES Matters of National Environmental Significance

NCA Nature Conservation Act 1992 (Qld)

OMP Offset Management Plan (EPBC 2014/7351), prepared by Saunders Havill Group, dated

November 2019.

RE Regional Ecosystem

TEC Threatened Ecological Community (under the EPBC Act)

VMA Vegetation Management Act 1999 (Qld)

VPMP Vertebrate Pest Management Plan (EPBC 2014/7351), prepared by Saunders Havill Group,

dated April 2021.

WMP Weed Management Plan (EPBC 2014/7351), prepared by Saunders Havill Group, dated April

2021.



1. Introduction

This Annual Compliance Report (ACR) Year 5 (12 May 2024 – 11 May 2025) has been prepared on behalf of Boral Resources (Qld) Pty Ltd (the Proponent) as per the EPBC approval granted on 19 August 2016 for the Narangba Quarry Expansion (the Project) located on Raynbird Road, Narangba, Queensland (EPBC 2014/7351).

In accordance with the approval granted on the 19 August 2016 under the *Environmental Protection and Biodiversity Act 1999* (EPBC Act), this ACR has been prepared in response to Condition 7 of the approval which states:

"Within three months of the anniversary of every 12-month anniversary of the commencement of the action, the approval holder must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in their conditions."

1.1. Reporting Period

This ACR details the status and compliance of the Project for the 12-month reporting period between the 12 May 2024 and 11 May 2025.

The ACR must be published on the Proponent's website and notification provided to the Department of the Environment and Energy (now the Department of Climate Change, Energy, the Environment and Water, DCCEEW) within 3 months of the 12-month anniversary of the commencement of the action (12 August).

1.2. EPBC Approval

Boral Resources (Qld) Pty Ltd, as the Proponent of the Project (EPBC Act Referral 2014/7351) was issued with an approval by the Department of the Environment and Energy (now DCCEEW) on the 18 August 2016, subject to conditions. A variation was made to this approval and approved by the delegate of the Minister on the 24 August 2018. This included the removal of condition 3 of the approval and substitute with conditions 3 and 3A (refer **Appendix A**). An additional variation to the approval was made on 10 August 2019, subsequently approved by the minister, which added Condition 3B (refer **Appendix A**).

Key details related to the EPBC 2014/7351 approval, including variation conditions, are provided in **Table 1** below.

Table 1: Approval Details

| Commonwealth Reference | EPBC 2014/7351 |
|------------------------------|---|
| Approval Holder | Boral Resources (Qld) Pty Ltd |
| ACN | 009 671 809 |
| Project Name on the Approval | Narangba Quarry Expansion, Raynbird Road, Narangba, Queensland |
| Approved Action | Fifty-six-hectare (56 ha) expansion of the existing Narangba Quarry, including clearing of 52 ha of vegetation. The quarry expansion site is located on Raynbird Road, 18 km south of Caboolture; as described in the referral received by the Department on 30 September 2014 [See EPBC Act referral 2014/7351]. |
| Controlling Provision(s) | Listed threated species and communities (sections 18 & 18A) |



| Commonwealth Reference | EPBC 2014/7351 |
|--|-------------------------------------|
| Approval Date | 19 August 2016 |
| Variation to Conditions of Approval Date | 24 August 2018 10 August 2019 |
| Expiry Date of the Approval | 18 August 2076 |
| Date of Commencement of the Action | 12 May 2020 |
| Address | Raynbird Road, Narangba |
| Local Government Area | Moreton Bay Regional Council (MBRC) |

1.3. Site Context

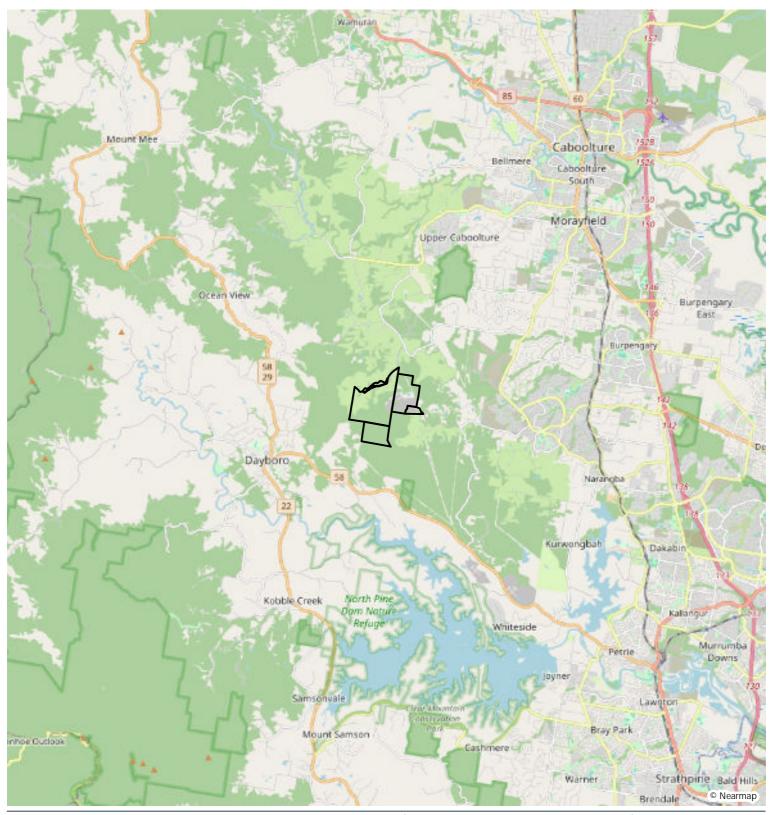
Contextually, the Project is located in south-east Queensland, approximately 7.8 km north-west of Narangba Town Centre within the Moreton Bay Local Government Area. The Project is surrounded by rural and rural residential allotments and remnant vegetation (refer **Figure 1** for Site Context and **Figure 2** for Site Aerial).

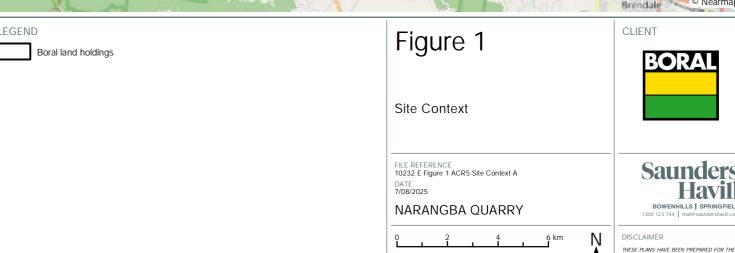
1.4. Overview of Key Activities and Achievements

During Year 5 of compliance reporting, the following development and environmental management activities occurred:

- No clearing of Koala Habitat occurred during Year 5, however, a small polygon of bench reestablishment
 measures did occur within the reporting period. A total of 2.6 ha of MNES habitat has been cleared within
 the approved area since the commencement of the action (refer Plan 1).
- As per OMP-5 Koala habitat improvement, the habitat quality monitoring is to be completed annually for the first three years after commencement of the operation and then every five years ongoing. With this year being the fifth year of reporting, habitat quality monitoring within the offset area was conducted by SH Ecologists. The next habitat quality monitoring to be conducted will be during the Year 10 field surveys with data to be reported within the Year 10 ACR.
- Annual weed mapping which targets Weeds of National Significant (WONS) was conducted by SH Ecologists across Stage 1 offset area.
- Annual Koala SAT surveys were conducted within the Stage 1 offset area.
- Motion detection sensor cameras were installed across all stages of the offset area by SH Ecologists.
- Vertebrate pest management activities were carried out across all stages of the offset area (Stage 1, 2, and 3) by Biodiversity Australia including camera monitoring in May 2025 and trapping in June 2025.
- Management and removal of WONS within the Stage 1 offset area was conducted by Phoenix Environmental Services.
- Planting, monitoring and maintenance of Koala habitat tree plantings across the Stage 1 offset area as part of offset rehabilitation was conducted by Phoenix Environmental Services.
- Bushfire Management, including preparation of prescribed burn plans and assessments were completed by Fireland.

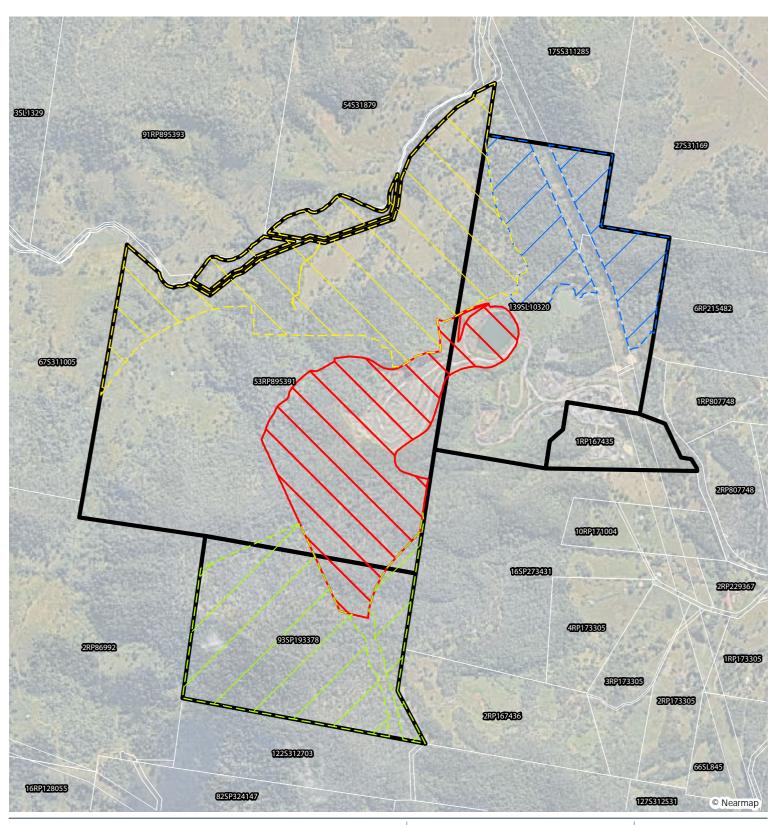






1:150,000

GDA 2020 MGA Z56







Site Aerial

FILE REFERENCE 10232 E Figure 2 ACR5 Site Aerial A DATE 7/08/2025

NARANGBA QUARRY

0 180 360 540 720 m COORDINATE SYSTEM SCALE (A4) GDA 94 MGA Z56 1:18,000







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2. Current Status of the Project

2.1. Offset Area Legally Secured

As required by Condition 3B of the EPBC Act approval, the offset land, which is located over parts of Lot 53 on RP895391, Lot 93 on SP193378, Lot 139 on SL10320 and Lot 1 on RP167435, Raynbird Road, Narangba, was legally secured via a Voluntary Declaration under the VMA by the Proponent on 24 February 2020 (refer **Appendix B**). The Chief Executive of the Queensland Department of Natural Resources, Mines and Energy (DNRME) (now Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development, DNRMMRRD)) declared the offset area in a Declared Area Map (DAM 2020/010206) as an area of high nature conservation value in accordance with section 19F (1) of the VMA. The offset area includes Stages 1 to 3 and is shown as Category A on a Property Map of Assessable Vegetation (PMAV) (PMAV 2020/010207) and is subject to management provisions of the Offset Management Plan EPBC 2014/7351, prepared by Saunders Havill, November 2019 (Offset Management Plan - OMP).

2.2. Vegetation Clearing

Vegetation clearing within the impact site commenced on the 12 May 2020, and the department was notified via email correspondence on the 4 June 2020. As per condition 5 of the EPBC Approval conditions the department was notified within 20 business days of the commencement of the action (refer **Appendix C**). No clearing of Koala Habitat occurred in the current reporting period, however a small portion of the impact area underwent bank reestablishment measures. A total of 2.6 ha of Koala habitat was cleared during the Year 1 reporting period and was presented within the Year 1 ACR. Refer **Plan 1** for clearing extent area. No additional clearing has been conducted in the current ACR reporting period.

2.3. Key Consultants and Roles

Table 2 below is a list of the key staff and appointed contractors and their roles in the Project during Year 5.

Table 2: Key Consultants and Roles

| Role | Appointed Contractor |
|--------------------------------|---------------------------------|
| Environment Manager | Boral - Matthew Allan |
| Site Supervisor | Boral – Liam Elsworth |
| Environmental Consultant | Saunders Havill- Megan McKinney |
| Bush Regeneration Contractor | Phoenix Environmental Services |
| Bushfire Management Contractor | Fireland |
| Pest Management Contractor | Biodiversity Australia |

2.4. Year 5 Offset Reporting

Management activities have been conducted across the site in accordance with the management actions outlined in the OMP. Pest management was conducted across the entire offset site while bushfire management, weed management, rehabilitation planting and weed mapping were conducted for the Stage 1 offset area only. Refer to **Plan 2.1** and **Plan 2.2** for delineated Habitat Management Zones Map. Contractor Reports are provided in **Appendix D**.



A review of the OMP commitments and implementation is provided in **Table 3**.



Table 3: Offset Management Plan implementation

| No. | Commitment | Evidence / Comments / Status |
|-------|--|---|
| OMP-1 | A Voluntary Declaration will be placed over the entire offset area to legally secure the conservation use on the land prior to the action commencing. Boral will continue to manage the offset area for the life of the approval. Legally securing the offset area is listed in the Conservation Advice as a Priority Management Action, under "habitat loss, disturbance and modification". As required by the conditions of approval the Voluntary Declaration will be in place by 28 February 2020. | The Proponent legally secured the offset via a Voluntary Declaration under the <i>Vegetation Management Act 1999</i> on the 24 February 2020 (refer Appendix B). In accordance with Condition 3B, the offset was legally secured prior to the official commencement of the action on the 12 May 2020. |
| OMP-2 | Management measures for the control of WONS, specifically Lantana will include: Baseline weed mapping for WONS will be conducted and specific treatment techniques developed within six months of the commencement of each stage of clearing for the quarry extension. All identified WONS will be treated within 12 months of the commencement of each stage of clearing for the quarry extension. A suitably qualified bush regeneration contractor will be engaged to undertake the necessary weed control. Control of infestations will utilise techniques that avoid disturbance to surrounding areas. WONS, and other high-risk weeds, will be monitored annually until they are not observed, at which point monitoring will be carried out every 2 years until they are consistently identified at densities less than 10% of the baseline infestation. The monitoring will be undertaken during the same time of year, each year, to ensure that the timing is consistent and aligns with the baseline assessment. | A Weed Management Plan (WMP) was produced by SH in the Year 1 reporting year to fulfil the requirements of the OMP (refer Appendix E). The purpose of the WMP is to ascertain baseline surveys of weed cover and weed species within the offset area. Specific management actions and timeframes have been developed for the control of weeds on-site as well as regular and annual monitoring. The SH Ecologists field survey effort for the Year 5 reporting period included remapping the extent of WONS across the Stage 1 offset area during the 2024/2025 reporting period. During these surveys WONS were identified and mapped, with the dominant weed being <i>Lantana camara</i> (Lantana) (refer Plan 4). In accordance with the OMP, management of weeds occurred within the habitat rehabilitation and remnant vegetation portions of the Stage 1 offset area, in order to assist with natural regeneration of native vegetation conducted by Phoenix Environmental Services. Treated areas are shown on Plan 5 . Management of WONS was not able to be completed across the entirety of the Stage 1 offset area. This was primarily due to recurring access issues on the steeper slopes in the southern portion of the site. In |

Completion criteria for the offset site are as follows:

WONS reduced to less than 10% of baseline levels.

addition, inclement weather reduced the window of suitable and safe conditions for potential works to be carried out.

There continues to be safety and accessibility issues within the remnant portion in the south-western area of the site due to the lack of tracks and therefore some of this remnant vegetation area was not able to be treated for WONS. The current bush regeneration contractors, Phoenix Environmental Services, have continued weed management within focus areas, covering the majority of the Stage 1 offset area vegetation.

SH Ecologists annually assess the weed presence and density across the Stage 1 offset area, this data is then used to inform the subsequent years weed management application within both the Remnant Vegetation Management and Habitat Rehabilitation Management areas. However, discussions with Boral for proposed spraying and manual removal within the southern portion of the offset site are ongoing, with several options being reviewed. At present, options for addressing the accessibility and safety issues continue to be reviewed by site managers.

Maintenance and monitoring of revegetation sites occurred regularly following planting, with the objective of any losses to be replanted. Two plantings were completed within the Stage 1 offset area during the 2021/2022 offset reporting period, being described as Plantation A and Plantation B. Details of these planting can be found in the associated ACR. Since the installation of the two initial planting sites, two additional locations (C and D) have been established to compensate for the loss of koala habitat vegetation in accordance with approval and aligning with the approved OMP and associated developed Koala Habitat Management Plan (KHMP). Additional plantings have occurred within the Stage 1 offset area during the 2024/2025 reporting period, an additional 500 tree were



| No. | Commitment | Evidence / Comments / Status |
|-------|---|---|
| | | planted within Plantation A.2 and 100 trees within Plantation C.2 (refer Plan 6). |
| | | The first five years of offset reporting found the habitat quality scores across the offset area remained stable from baseline survey results, with indication of slight improvement in habitat quality (refer Table 4, Table 5 and Table 6). |
| OMP-3 | Feral and pest fauna species management Management measures for the control of feral or unwanted domestic dogs across the offset area include: Baseline pest monitoring including motion activated cameras and scat analysis to identify evidence of feral or unwanted dogs (and other pest species), and development of a property wide feral animal management program specifying techniques (trapping, baiting, shooting) and ongoing monitoring methods (including datasheets) to be utilised, will be completed within 12 months of commencement of the action. Where practical and appropriate, participate cooperatively in pest management planning and implementation with local land managers (government departments, local governments and utility providers) to ensure effective pest management in the locality of the offset area. Install appropriate signage informing the area is under feral control. As the management of feral and pest species can only be achieved at a landscape level, management will be carried out over the entire offset area within 12 months of commencing Stage 1 of the quarry extension. | Baseline monitoring of pest species across the offset site was conducted by SH Ecologists in 2020 which identified a number of pest species within the offset area including <i>Canis familiaris</i> (feral dog), <i>Sus scrofa</i> (feral pig) and <i>Vulpes vulpes</i> (red fox). The results of the baseline monitoring are detailed in the Vertebrate Pest Management Plan (VPMP) produced by SH (refer Appendix F). The VPMP outlines specific pest management measures and methods to be undertaken throughout the life of the offset. SH Ecologists annually install motion detection monitoring cameras to monitor presence of introduced fauna across the offset site during the compliance period (refer Plan 3). Pest management was undertaken by Biodiversity Australia across the entire offset area, primarily targeting wild dogs. The monitoring and management program takes pace across ACR timeframes and as such, the programs and dates for both that undertaken partially within the Year 4 ACR period and partly undertaken within the ACR Year 5 periods are presented below for clarity. A pre-control camera monitoring program was undertaken from 18 th April 2024 until 3 rd May 2024 with a subsequent predator trapping program conducted onsite from 24 th May 2024 through until 5 th June 2024. The |
| | Pest animal management and monitoring will be undertaken in accordance with the <i>Biosecurity (Consequential Amendments and Transitional Provisions)</i> | conducted onsite from 24 th May 2024 through until 5 th June 2024. The camera program detected 4 wild dogs across the offset site, with red |

Act 2015 (Cwlth) and the Biosecurity Act 2014 (Qld), which, in general, require all reasonable and practical steps to prevent or minimise biosecurity risks; minimise the likelihood of causing a 'biosecurity event'; and the limitation of consequences if such an event is caused. The control of pest animals will be undertaken using legal methods, by suitably qualified pest management contractor(s). Pest animal control is to be undertaken in a humane manner.

Annual pest monitoring will be reported and outcomes of that monitoring included in the ACR. The annual pest management report is to provide detail on detected pests, control efforts, and total trapped/baited individuals during the given management period and identified trends of the population of pest animals within the offset area.

Completion criteria for the offset site are as follows:

 Dogs or evidence of dog presence are not detected on the offset area for a period of three years. foxes, wild pigs and cattle also notably detected. Trapping resulted in the removal of 2 red foxes from the site.

The second vertebrate pest management program included the precontrol camera monitoring across the site from the 9th May to 26th May 2025, for eighteen (18) consecutive days, utilising eight (8) cameras (refer **Plan 7**). During the camera monitoring a total of eleven (11) wild dogs were observed across the entirety of the offset site. As well as five (5) red foxes and fourteen (14) feral pigs.

The subsequent predator trapping program conducted onsite from 17th June until 27th June 2025, falling outside of the current ACR period, but being relevant given the overlapping timing across ACR periods. The soft jaw trapping resulted in the removal of one (1) red fox and two (2) wild dogs. The noted increase in wild dogs on the offset site has resulted in proposed increase in trapping during the upcoming year to actively manage dog numbers onsite.

Refer **Appendix D** for Vertebrate Pest Management Report prepared by Biodiversity Australia.

Bushfire Management Plan

Management measures will be outlined in the Bushfire Management Plan (BMP) for the control of bushfire across the offset area but will include:

OMP-4

- Installation of firebreaks and fire trails.
- Annual inspection and maintenance of firebreaks and access tracks required to achieve compliance with Offset Area Bushfire Management Plan.

A Bushfire Management Plan was created for the site by Land and Environment Consultants (LEC) in accordance with OMP commitment 4 and details management measures that will be implemented across the site to reduce risk of bushfire. Refer **Appendix G** for Bushfire Management Plan (BMP).

Prescribed burns have been conducted within the offset area in preceding years, the details of which can be found in the corresponding ACR. During the Year 5 reporting period, an inspection was conducted by Fireland



- Prescribed burning undertaken in consultation with, and under the guidance of the Queensland Rural Fire Brigade and in compliance with the Fire and Emergency Services Act 1990.
- Use of domestic livestock or other methods to reduce fuel loads in the event that a fire risk professional (e.g. representative of Queensland Rural Fire Service) and a suitably qualified person deem that conditions are not suitable for an ecological burn and that grazing is appropriate to manage a high level of fire risk. Level of risk (and any need to repeat this grazing cycle) is to be re-assessed by the aforementioned professionals following the grazing event.

As the management of bushfires can only be achieved at a landscape level management will be carried out over the entire offset area within 12 months of commencing Stage 1 of the guarry extension.

Monitoring requirements will be informed by the bush fire management plan and include regular review of access tracks, fire breaks, fuel loads and outcomes of controlled burns or other management techniques such as use of livestock.

consultants as well as the preparation of an operational prescribed burn plan (refer **Appendix D**).

One prescribed operational burn was conducted during the Year 5 compliance reporting period (see **Plan 5**), conducted during July 2024. This burn was prescribed as part of the offset Bushfire Management Plan (BMP) and earlier burn plan within fire Management Unit (FMU) 12. Refer to **Appendix D** for the Burn Plan and the Operational Post Burn Report. Details of operational burns conducted in previous years are included within the associated ACR. A prescribed burn plan was prepared on 18 July 2025 within the Year 6 ACR period, which includes the proposed burn timing of January to February 2026 within Fire Management Unit (FMU) 09 (refer **Appendix D**).

During the Year 5 compliance reporting period, operational burning within the offset site was not conducted. Fireland consultants reported that due to the proposed burn areas geographical position, aspect and vegetation composition the opportunity for activity window was reduced. Additionally, the consistent rainfall within the reporting period across south-east Queensland has reduced this opportunity window ever further.

Maintenance (dozing) of all accessible fire trails (where grading was required) was conducted by Boral in accordance with the management measures of the BMP. Firebreaks and access tracks as shown on Figure 4.1 of the BMP will be further maintained throughout the next reporting year (2025/2026).

In accordance with the BMP, prescribed burn plans will be subsequently formulated for relevant fire management units.



■ EPBC Annual Compliance Report 2024/2025 No. **Evidence / Comments / Status** Commitment A Koala Habitat Management Plan (KHMP) (Rehabilitation Plan) was Koala habitat improvement developed in Year 1 reporting period for the Stage 1 offset area which details strategies that will be implemented in order to achieve the Koala Management measures for each zone are detailed as: Remnant vegetation habitat rehabilitation aims set out in the OMP (refer **Appendix H**). Stop activities reducing habitat values, specifically selective logging The management zones relevant to the Stage 1 offset area include and grazing. 'Remnant Vegetation' and 'Habitat Rehabilitation.' In accordance with the Assisted natural regeneration practices where removed weeds leave OMP, management of WONS, namely Lantana, occurred within the open areas - replanting with locally endemic species. habitat rehabilitation and remnant vegetation portions of Stage 1, Maintain and manage the land for the life of the offset, including direct assisting with natural regeneration of native vegetation. Management of monitoring of Koala usage. WONS was not able to be completed across the entirety of the Stage 1 'Remnant Vegetation' management area due to continued safety Habitat rehabilitation concerns in accessibility and current issues with addressing these concerns without degrading the structural integrity of the steep slope, by Assisted regeneration, seeding, or planting of endemic canopy tree developing access tracks in strategic locations across it. This constrained species specifically selected to provide Koala habitat. the ability to safely complete weed treatment within all remnant areas OMP-5 Removal of impediments to Koala movement such as old fences. onsite. At present, continued planning to provide safe, effective access to Maintain and manage the land for the life of the offset, including direct these areas during dry weather, to allow personnel to carry weed monitoring of Koala usage. treatment equipment and successfully treat weeds in the area, while

Habitat revegetation

- Implementation of rehabilitation techniques that aim to promote the regeneration of native vegetation and improve habitat values:
 - Where natural regeneration is ineffective, implementation soil amelioration and seeding with native endemic seeds,
 - Where natural regeneration and / or seeding is ineffective, planting of endemic trees and shrubs specifically selected to provide Koala habitat.
- Management of the revegetated areas to ensure habitat density requirements are achieved.
- Removal of impediments to Koala movement such as old fences.

As per the performance criteria, habitat quality monitoring is to be completed annually for the first three years and then every five years ongoing. As this is the fifth year of compliance monitoring since the commencement of the action, habitat quality monitoring was conducted across the Stage 1 offset area. MHQA scores for the Stage 1 offset area have been included within this ACR. This includes Transect 1 within the 'Remnant Vegetation' management area and Transect 3 and 4 within the 'Habitat Rehabilitation' management area (refer Plan 3).

maintaining the integrity of the landform, is ongoing.

- Protecting revegetated areas from cattle and horses through the implementation of fauna friendly fencing.
- Maintain and manage the land for the life of the offset, including direct monitoring of Koala usage.

Performance criteria for the offset are as follows:

- Rehabilitation plans for each stage of offset delivery developed within
 6 months of the commencement of the corresponding clearing stage.
- Natural regeneration, seeding or planting to commence within 12 months of the commencement of the corresponding quarry clearing stage.
- Planted areas will have a 90% plant survival rate after 12 months of planting being carried out.
- Areas allowed to regenerate will display signs of native vegetation regrowth at rates expected for those species.
- Habitat quality monitoring will be completed annually for the first three years after commencement of the operation and every five years ongoing.
- Habitat quality will be maintained at the current values (7/10 for remnant areas and 6/10 for rehabilitation and revegetation areas) and display signs of improvement within 5 years of the commencement of improvement works.

Completion criteria for the offset site are as follows:

- Offset zones reach the habitat quality scores identified in the Amended Offsets Strategy (values below):
 - Remnant areas improve from a habitat quality score of 7/10 to 8/10.
 - Rehabilitation and revegetation areas improve from a habitat quality score of 6/10 to 8/10.

During the Year 5 ACR reporting period (2024/2025), Transect 1 within the 'Remnant Vegetation' management area (mapped as RE12.11.3a) achieved a rounded score of 6/10, representing an increase in score from 5.88 recorded at baseline surveys (2019) to 6.26/10. Transect 3 & 4 within 'Habitat Rehabilitation Area' (RE12.11.18) achieved a rounded score of 6/10, representing an increase in habitat quality score from 6.33 recorded at baseline (2019) to 6.5/10.

As a result, both the 'Remnant Vegetation Management Area' and the 'Habitat Rehabilitation' management area saw a minor increase in habitat quality from baseline studies conducted in 2019, confirming Koala habitat quality has been maintained through Year 5 in accordance with the requirements of the OMP. As extensive management (weed management, plantings, prescribed fire management) in accordance with the OMP and individual management plans, has been continued through the Year 5 reporting period, the habitat quality is expected to be maintained or steadily increased as per previous results.

Additional plantings were input into the Stage 1 offset area during the Year 3 ACR period. An area within the south-west corner of the offset was identified as being suitable for rehabilitation plantings, with 200 specimens of mixed species, representative of the Regional Ecosystem, being planted in March 2023. Maintenance and monitoring of this revegetation site are ongoing and any losses will be replanted.

The Year 5 ACR period saw rehabilitation plantings within several locations within the offset area (refer **Plan 6**). Severe weather events (including cyclone Alfred), feral deer and cattle, which recently broke through the fence from neighbouring properties, damaged and depleted plantings in some of the planting areas. Replanting and ongoing



No. **Evidence / Comments / Status** Commitment Koala habitat quality will be assessed using the modified monitoring and management will take place in the upcoming months, in habitat quality assessment method detailed in the Amended the lead up to summer, when conditions will be favourable. Offsets Strategy. Any alternate methodology would require prior agreement between Boral and DAWE. As reduction of WONS (specifically lantana) is identified as a core Koala habitat quality remains at target values or better for two requirement of rehabilitation, providing suitable conditions for assisted consecutive five-year monitoring events. natural regeneration, this technique was utilised to maximise opportunities for native vegetation to regrow, at this stage of the offset. In addition, Koalas are regularly observed throughout the offset site, recorded by Phoenix Environmental Services in their monthly reports during the current ACR reporting period.



Table 4: Modified Habitat Quality Assessment – Transect 1 / Remnant Vegetation Management Area / RE12.11.3a

| Attribute | Condition characteristics | Score (RE12.11.3a) |
|-----------------------|--|--------------------|
| Site Condition (30 %) | Recruitment of woody perennial species | 5/5 |
| | Native plant species richness - trees | 2.5/5 |
| | Native plant species richness - shrubs | 2.5/5 |
| | Native plant species richness - grasses | 2.5/5 |
| | Native plant species richness - forbs | 2.5/5 |
| | Tree canopy height | 5/5 |
| | Tree canopy cover | 5/5 |
| | Shrub canopy cover | 5/5 |
| | Native perennial grass cover | 5/5 |
| | Organic litter | 5/5 |
| | Large trees | 5/5 |
| | Coarse woody debris | 0/5 |
| | Weed cover | 3/5 |
| | Quality and availability of food and foraging habitat | 10/10 |
| | Quality and availability of shelter | 10/10 |
| | Site condition score | 67/100 |
| | Site condition score (out of 3) | 2.01 |
| Site Context (30 %) | Size of the patch | 10/10 |
| | Connectedness | 4/5 |
| | Context | 4/5 |
| | Ecological corridors | 6/6 |
| | Role of site location to species overall population in the State | 4/5 |
| | Threats to the species | 7/15 |
| | Species mobility capacity | 7/10 |
| | Site context score | 42/56 |
| | Site context score (out of 3) | 2.25 |
| Species Stocking Rate | SAT survey results | 20/40 |
| (40 %) | Koala population (density of 0.02 – 0.08 Koalas per ha) | - |
| | Species stocking rate score | 20/40 |
| | Species stocking rate score (out of 3) | 2 |
| Unit Scores Total | | 6.26 |



Table 5: Modified Habitat Quality Assessment – Transect 3 & 4 / Habitat Rehabilitation Area / RE12.11.18

| Attribute | Condition characteristics | Score (RE12.11.18) |
|-----------------------|--|--------------------|
| Site Condition (30 %) | Recruitment of woody perennial species | 5/5 |
| | Native plant species richness - trees | 5/5 |
| | Native plant species richness - shrubs | 5/5 |
| | Native plant species richness - grasses | 2.5/5 |
| | Native plant species richness - forbs | 2.5/5 |
| | Tree canopy height | 5/5 |
| | Tree canopy cover | 5/5 |
| | Shrub canopy cover | 5/5 |
| | Native perennial grass cover | 5/5 |
| | Organic litter | 3/5 |
| | Large trees | 5/5 |
| | Coarse woody debris | 2/5 |
| | Weed cover | 5/5 |
| | Quality and availability of food and foraging habitat | 10/10 |
| | Quality and availability of shelter | 10/10 |
| | Site condition score | 75/100 |
| | Site condition score (out of 3) | 2.25 |
| Site Context (30 %) | Size of the patch | 10/10 |
| | Connectedness | 4/5 |
| | Context | 4/5 |
| | Ecological corridors | 6/6 |
| | Role of site location to species overall population in the State | 4/5 |
| | Threats to the species | 7/15 |
| | Species mobility capacity | 7/10 |
| | Site context score | 42/56 |
| | Site context score (out of 3) | 2.25 |
| Species Stocking Rate | SAT survey results | 20/40 |
| (40 %) | Koala population (density of 0.02 – 0.08 Koalas per ha) | - |
| | Species stocking rate score | 20/40 |
| | Species stocking rate score (out of 4) | 2 |
| Unit Scores Total | | 6.5 |



Table 6: Comparison of MHQA scores

| Biocondition Score | Baseline (2019) | Year 2 (2021) | Year 3 (2022) | Year 5 (2024) | Comment |
|--|----------------------------------|------------------------------------|------------------------------------|------------------------------------|-------------------------|
| Transect 1 | • | | | | |
| Site condition Site context Species stocking rate Total | 1.7 2.1 2.0 5.88 | 1.88 2.25 2.0 6.13 | 1.95 2.25 2.0 6.20 | 2.01 2.25 2.0 6.26 | Minor increase in score |
| Transect 3&4 Site condition Site context Species stocking rate Total | 2.2 2.1 2.0 6.33 | 2.13 2.25 2.0 6.38 | 2.22 2.25 2.0 6.47 | 2.25 2.25 2.0 6.50 | Minor increase in score |



01. STAGE 1 CLEARING EXTENT (YEAR 5)



Notes:
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LEGEND

Qld DCDB

Boral land holdings

Existing quarry/cleared area

Prior clearing extent [2.6 ha]

Bank Reestablishment Activities

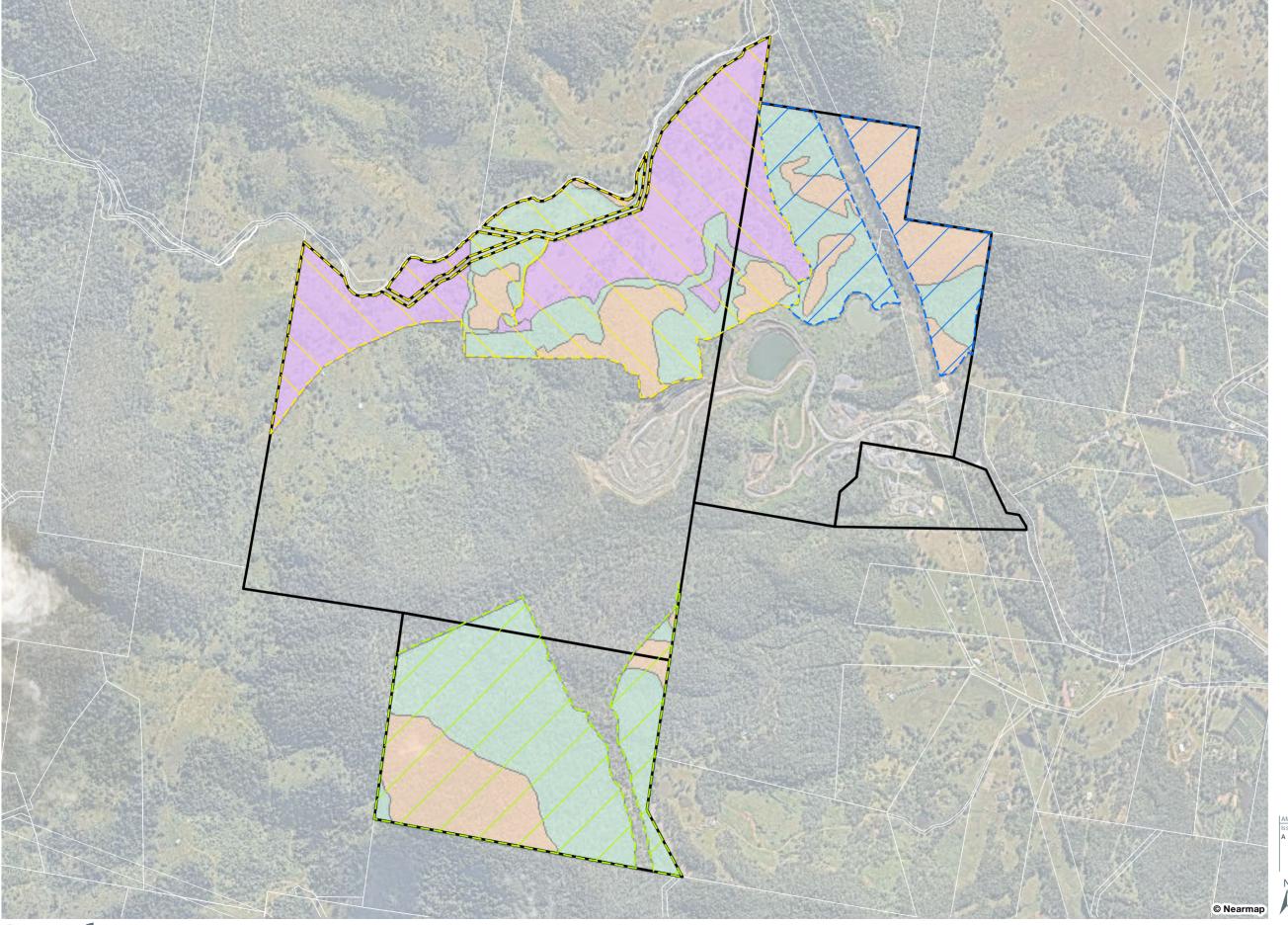




Saunders Havill

BOWENHILLS | SPRINGFIELD

02.1 OFFSET AREA - HABITAT MANAGEMENT ZONES



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LEGEND

Qld DCDB



Boral land holdings

Offset staging



Stage 1 [73.6 ha]



Stage 2 [41.1 ha]



Stage 3 [106.1 ha]

Habitat Management Zones



Remnant Vegetation Management Areas (57.9 ha)



Habitat Rehabilitation Areas (101.9 ha)



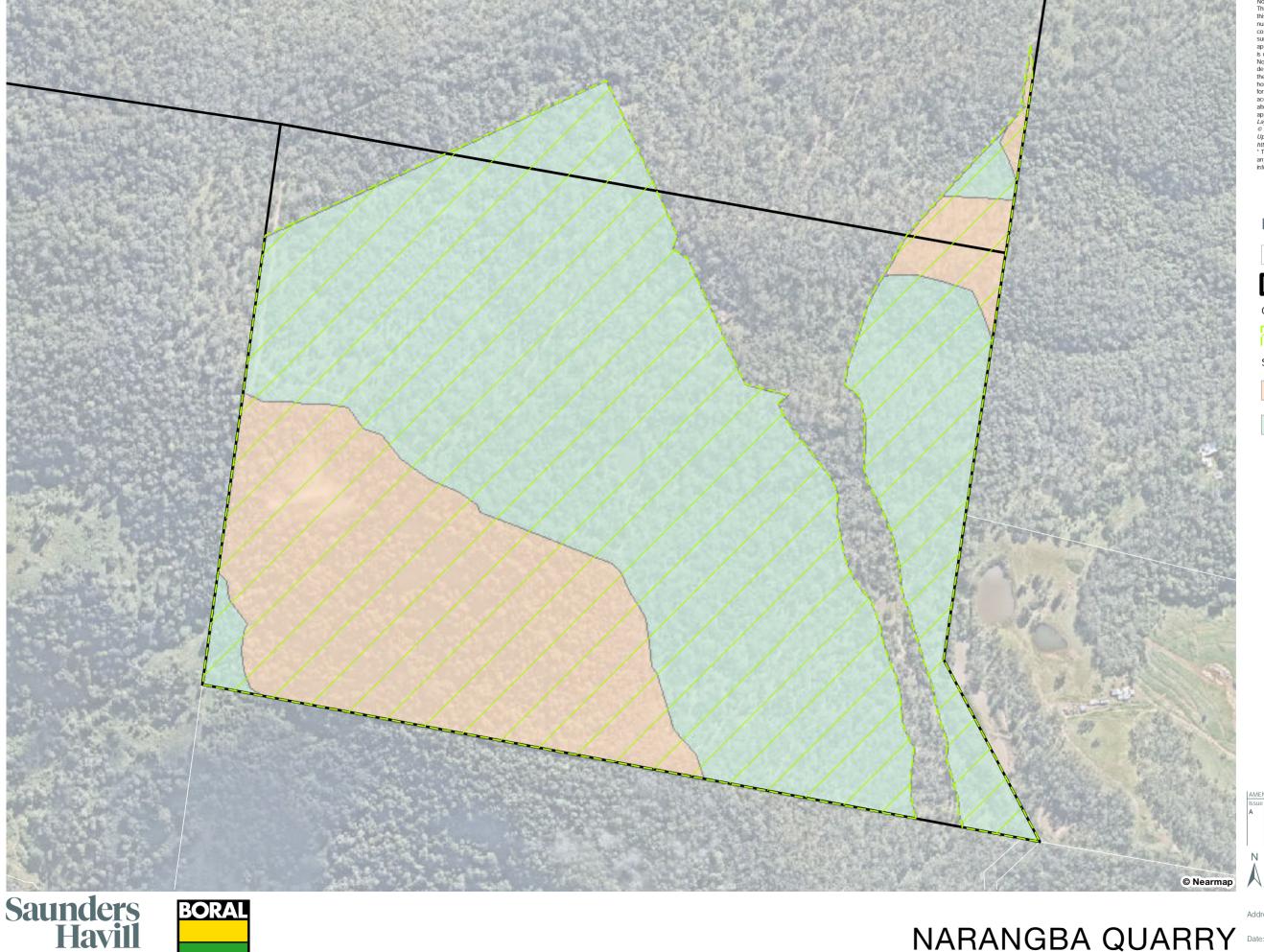
Habitat Revegetation Areas

Address / RPD: 53/RP895391



02.2 STAGE 1 OFFSET - HABITAT MANAGEMENT ZONES

BOWENHILLS | SPRINGFIELD



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LEGEND

Qld DCDB



Boral land holdings

Offset staging



Stage 1 [73.6 ha]

Stage 1 Habitat Management Zones



Remnant Vegetation Management Areas (22.1 ha)



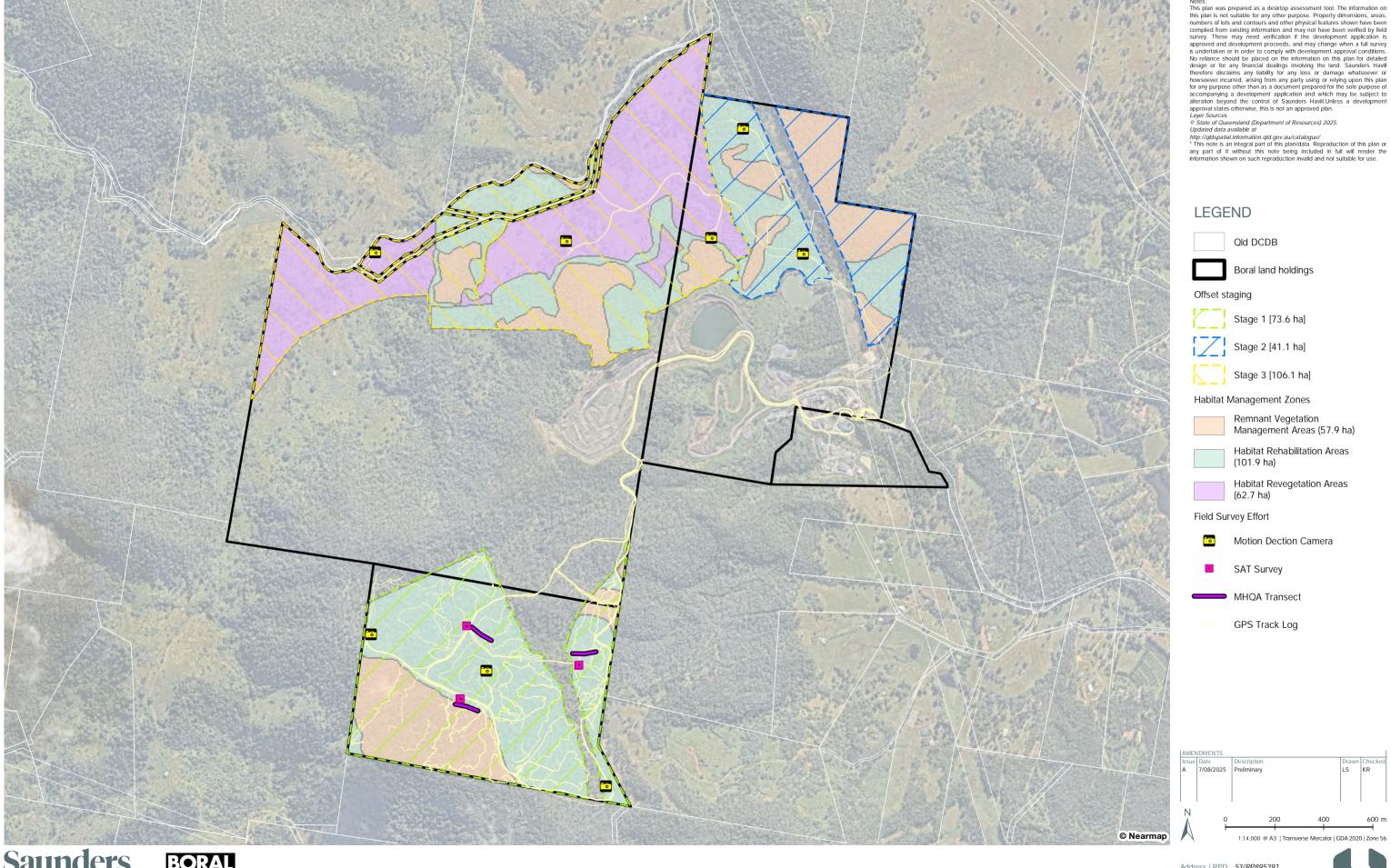
Habitat Rehabilitation Areas (51.5 ha)

Address / RPD: 53/RP895391



NARANGBA QUARRY Date: 7/08/2025

03. OFFSET AREA - FIELD SURVEY EFFORT (YEAR 5)



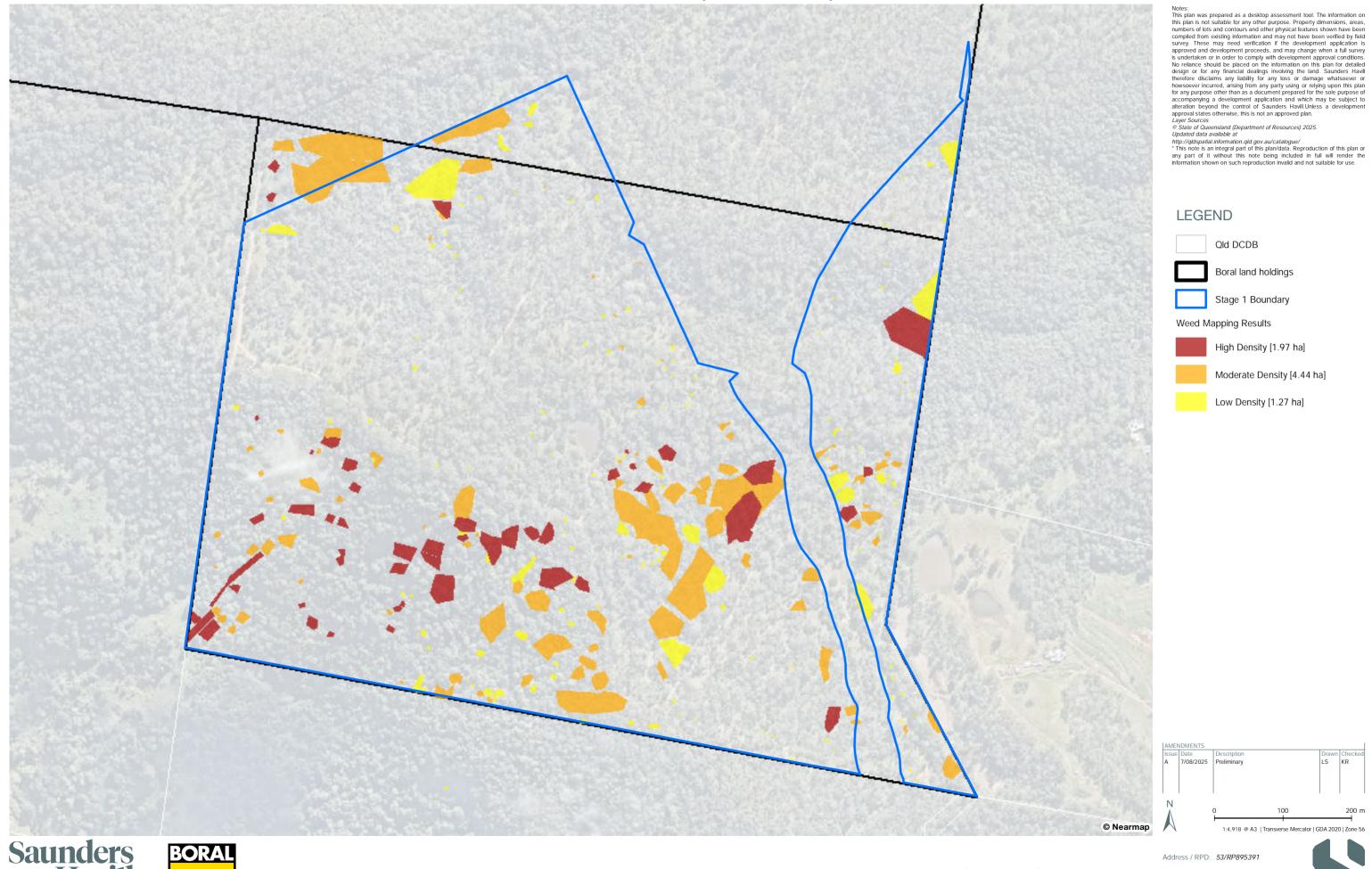


NARANGBA QUARRY Date: 7/08/2025

10232 E 03 ACR_5 Offset Area Field Survey A

04. STAGE 1 - WEED MAPPING RESULTS (YEAR 5)

BOWENHILLS | SPRINGFIELD

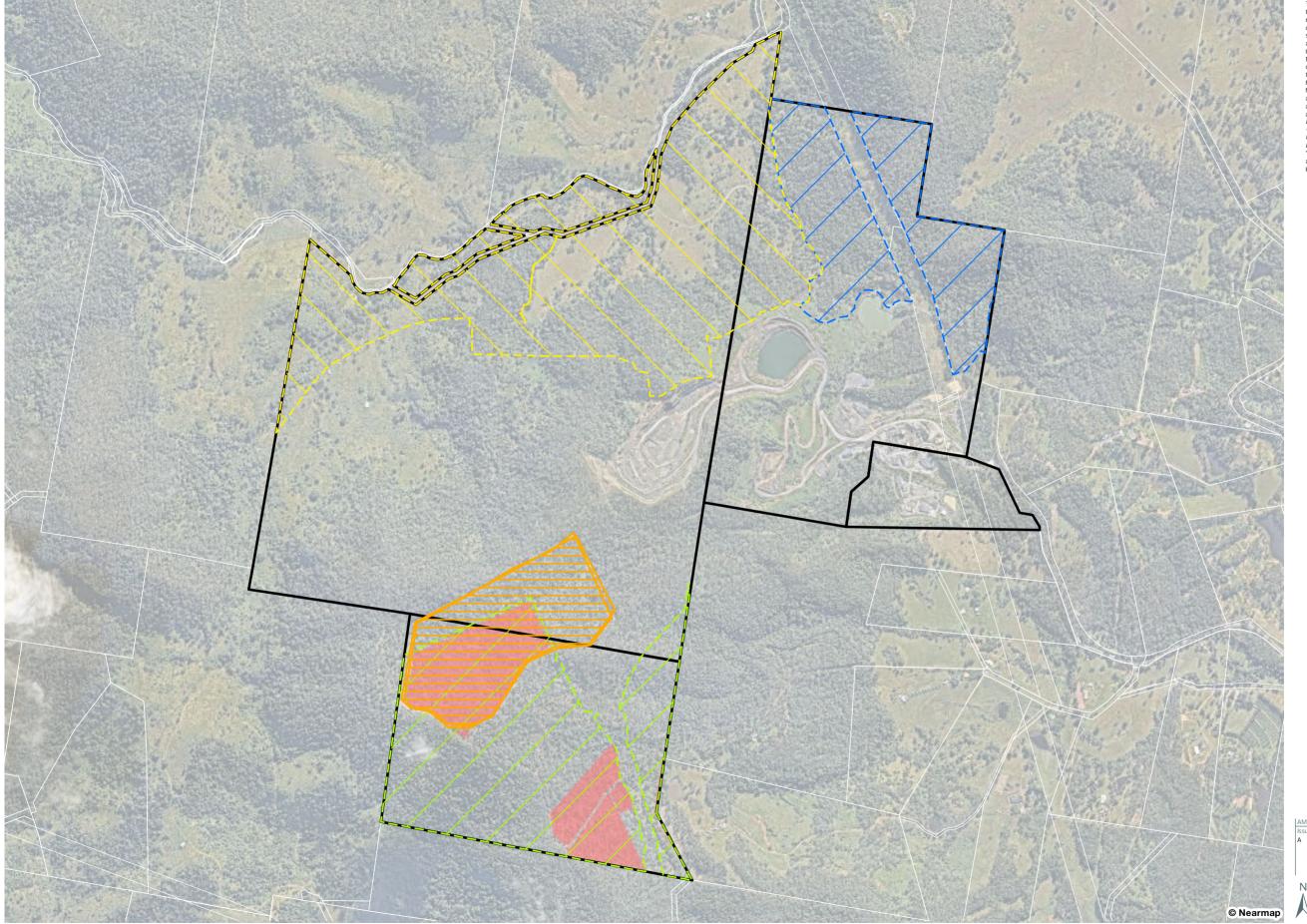


NARANGBA QUARRY Date: 7/08/2025

10232 E 04 ACR_5 Weed Mapping A



05. OFFSET AREA - WEED MANAGEMENT LOCATIONS (YEAR 5)



Notes:

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LEGEND

Qld DCDB

Boral land holdings

Weed Management Locations

Prescribed Burn

Offset staging

Stage 1 [73.6 ha]



Stage 3 [106.1 ha]

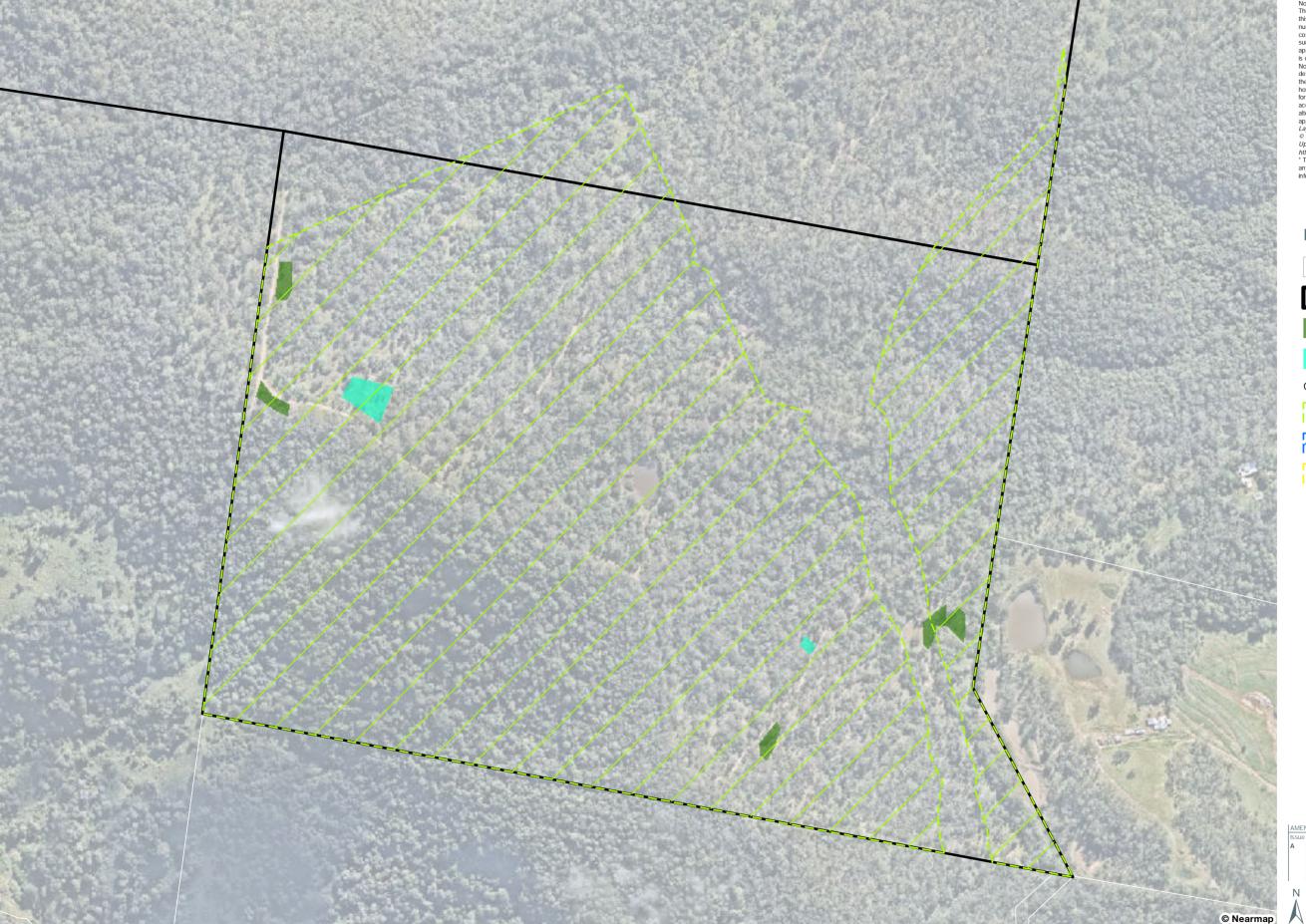
10232 E 05 ACR_5 Offset Area Weed Manage



Saunders

BOWENHILLS | SPRINGFIELD

06. OFFSET AREA - REHABILITATION/PLANTING LOCATIONS (YEAR 5)



Notes:
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LEGEND

Qld DCDB

Boral land holdings

Rehabilitation/Planting Locations 2024



Rehabilitation/Planting Locations 2025

Stage 1 [73.6 ha]



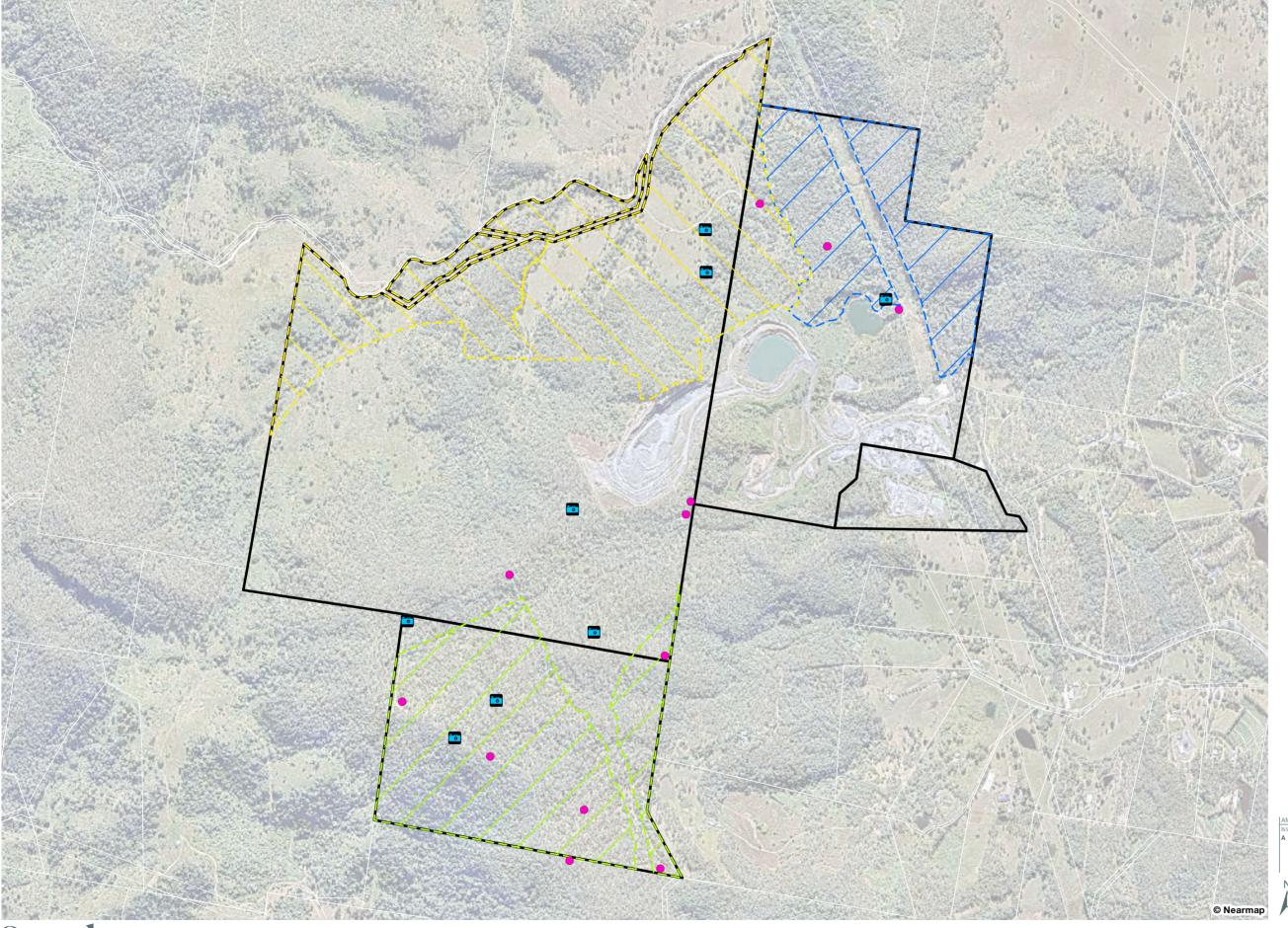
Stage 3 [106.1 ha]



Saunders

BOWENHILLS | SPRINGFIELD

07. OFFSET AREA – VERTEBRATE PEST MANAGEMENT LOCATIONS (YEAR 5)



BOWENHILLS I SPRINGFIELD

Notes:

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LEGEND

Qld DCDB



Boral land holdings



Stage 1 [73.6 ha]



Stage 2 [41.1 ha]



Stage 3 [106.1 ha]

Pest Management Activities



PIR Camera

NARANGBA QUARRY Date: 7/08/2025



3. EPBC Conditions and Compliance

Table 7 details the Conditions attached to the Narangba OMP Approval (EPBC 2014/7351). Sections 2-5 above provide details on process, steps and methodologies used to achieve the Conditions under the approval.

Table 7: Compliance Audit of EPBC 2014/7351 Conditions for Narangba Quarry

| Date of decision | Condition Number / Reference | Condition | Is the Project compliant with this condition? | Evidence / Comments |
|---------------------------|------------------------------------|---|---|---|
| 19/08/2016 | 1 | The approval holder must only undertake the action on the project site shown at Appendix A. | Compliant | The area of clearing on-site has occurred only within the Project area. Refer Plan 1 for clearing locations. |
| 19/08/2016 | 2 | The approval holder must not clear more than 52 hectares of Koala habitat on the project site. | Compliant | A total of 2.6 ha of Koala habitat within the project has been cleared since the commencement action in 2020. No additional clearing has occurred within the project site within the Year 5 reporting period. A small section of bank establishment activities were conducted within the already impacted area of the site. |
| | | To offset the loss of koala habitat, the approval holder must, by the 1 December 2018, submit an Offset Strategy for the Minister's written approval. The Offset Strategy must be consistent with the <i>EPBC Act Environmental Offsets Policy</i> (2012), and must: | | Written approval for the Amended Environmental Offset Strategy was provided by the Minister on 10 th August 2019 (refer Appendix A). |
| 10/08/2019 (variation) | 3 | a) confirm use of the offset area proposed in the preliminary documentation; and/or b) include the details of, and justification for, one or more other proposed offset area/s; and c) detail the process, including for preparation of the Offset Area Management Plan specified in Condition 3A, to ensure the offset area(s) is/are legally secured. | Compliant | |



| Date of decision | Condition Number / Reference | Condition | Is the Project compliant with this condition? | Evidence / Comments |
|---------------------------|------------------------------------|--|---|---|
| | | The approved Offset Strategy must be implemented. | | |
| 10/08/2019 (variation) | 3 A | To offset the loss of koala habitat, the approval holder must submit an Offset Area Management Plan (OAMP) for the Minister's written approval. The OAMP must be prepared in accordance with the Department's Environmental Management Plan Guidelines, and must: a) be consistent with the approved Offset Strategy and the EPBC Act Environmental Offsets Policy (2012); b) include performance and completion criteria to protect koalas and manage koala habitat; c) describe the management measures that will be implemented to achieve and maintain the performance and completion criteria, including discussion of how those measures take into account relevant conservation advice; and d) include a program to monitor (including detecting triggers) and report on the effectiveness of these measures, including triggers and corrective actions, and progress against performance and completion criteria. e) The approval holder must not commence the action until the OAMP is approved by the Minister in writing. The approved OAMP must be implemented. | Compliant | An Offset Management Plan (OMP) was prepared by SHG and submitted on 6 th November 2019. The OMP delineates the extent of three (3) management zones which are the 'Remnant Vegetation', 'Habitat Rehabilitation' and 'Habitat Revegetation' zones and details specific management measures to be implemented with each management zone of the offset site. Compliance with the management actions detailed in the OMP are addressed in Table 3 . |
| 10/08/2019 (variation) | 3В | The approval holder must legally secure the offset area/s specified in the approved Offset Strategy by 28 February 2020. | Compliant | The Proponent legally secured the offset via a Voluntary Declaration under the <i>Vegetation Management Act 1999</i> on 24 th February 2020 (refer Appendix B). In accordance with Condition 3B, the offset was legally secured prior to the official commencement of the action on 12 th May 2020. |



■ EPBC Annual Compliance Report 2024/2025

| Date of decision | Condition Number / Reference | Condition | Is the Project compliant with this condition? | Evidence / Comments |
|------------------|------------------------------------|---|---|--|
| 19/08/2016 | 4 | The approval holder must implement the sediment and erosion stormwater management plans, as required under the Queensland <i>Environmental Protection Act 1994</i> , Environmental Protection Regulation 2008 and the Environmental Protection (Water) Policy 2009. | Compliant | The Proponent implemented the sediment and erosion stormwater management plans as required, across the operating quarry site throughout the extent of Year 5. |
| 19/08/2016 | 5 | Within 20 days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement. | Compliant | The Department was notified on 4 th June 2020 that the action commenced on 12 th May 2020 which is 18 business days after the commencement date. Thus, notification was provided within the 20 business-day timeframe. |
| 19/08/2016 | 6 | The approval holder must maintain accurate records substantiating all activities and outcomes associated with or relevant to the conditions of approval, including measures taken to implement the management plans and demonstrate the outcomes required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media. | Compliant | All records substantiating activities associated with or relevant to the conditions of approval are maintained by the Proponent. If required by the Minister, these records can be made available to allow a third-party audit of the Project. |



| Date of decision | Condition Number / Reference | Condition | Is the Project compliant with this condition? | Evidence / Comments |
|------------------|------------------------------------|---|---|---|
| | | Unless otherwise agreed to in writing by the Minister, within three months of every 12-month anniversary of the commencement of the action, the approval holder must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary | | The Annual Compliance Report for Year 4 of the approval was published on the website prior to 12 August 2024. Year 1, Year 2, Year 3 and Year 4 Annual Compliance reports remain accessible via the link below. |
| 19/08/2016 | 7 | evidence providing proof of the date of publication and details of non-compliance with any of the conditions of this approval | Compliant | The website link for the proponent is below: |
| | | must be provided to the Department at the same time as the compliance report is published. Reports must remain published for the life of the approval. The person taking the action must continue to publish this report each year until such time as agreed to in writing by the Minister. | | https://www.boral.com.au/locations/boral-quarries-narangba> |
| | | Upon the direction of the Minister, the approval holder must | | A request for an independent audit of the Project was |
| | | ensure that an independent audit of compliance with the | | not made by the Minister during the Year 5 reporting |
| 19/08/2016 | 8 | conditions of approval is conducted and a report submitted to the Minister. The independent auditor and audit criteria must be approved by the Minister prior to the commencement of the | Not applicable | period. |
| | | audit. The audit report must address the approved criteria to the satisfaction of the Minister. | | |
| 19/08/2016 | 9 | The approval holder may choose to revise a plan approved by the Minister under the conditions without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the approval holder makes this choice, it must: | Not applicable | The Proponent did not choose to enact this right during the reporting period. |
| | | a) notify the Department in writing that the approved plan has been revised and provide the Department with:(i) an electronic copy of the revised plan or program; | | |



| Date of decision | Condition Number / Reference | Condition | Is the Project compliant with this condition? | Evidence / Comments |
|------------------|------------------------------------|--|---|---|
| | | (ii) an explanation of the differences between the revised plan or program and the approved plan or program; and (iii) the reasons the person taking the action considers that taking the action in accordance with the revised plan or program would not be likely to have a new or increased impact; b) declare in writing a date on which the revised plan or program will first be implemented by the approval holder. That date of first implementation must be at least 28 days after sub-condition 9a is satisfied. | | |
| 19/08/2016 | 10 | Condition 9 does not apply if the revisions to the approved plan, include changes to environmental offsets provided under the plan, in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the Minister. This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised plan, would, or would not, be likely to have new or increased impacts. | Not applicable | The Proponent did not choose to enact this right during the reporting period. |
| 19/08/2016 | 11 | The approval holder may revoke its choice under condition 9 at any time by giving written notice to the Department in which case, commencing on the day after giving such notice, the approval holder must implement the plan previously submitted for approval. If the approval holder revokes the choice to implement a revised plan, without approval under section 143A of the Act, the plan or strategy most recently approved by the Minister must be implemented. | Not applicable | The Proponent did not choose to enact this right during the reporting period. |
| 19/08/2016 | 12 | If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then: | Not applicable | The Proponent did not choose to enact this right during the reporting period. |

| Date of decision | Condition Number / Reference | Condition | Is the Project compliant with this condition? | Evidence / Comments |
|------------------|------------------------------------|---|---|--|
| | | a) condition 9 does not apply, or ceases to apply, in relation to the revised plan; and b) the approval holder must implement the plan previously submitted for approval and approved by the Minister. To avoid any doubt, this condition does not affect any operation of conditions 9 and 10 in the period before the day the notice is given. At the time of giving the notice the Minister may also notify that for a specified period of time that condition 9 does not apply for one or more specified plans required under the approval. | | |
| 19/08/2016 | 13 | Conditions 9, 10 and 11 are not intended to limit the operation of section dated 143A of the EPBC Act which allows the approval holder to submit a 19/08/2016 revised plan or strategy to the Minister for approval. | Not applicable | The Proponent did not choose to enact this right during the reporting period. |
| 19/08/2016 | 14 | The approval holder must report any contravention of the conditions of this approval to the Department within 2 business days of the approval holder becoming aware of the contravention. | Compliant | No incidents have occurred within the Year 5 reporting period. A minor clearing incident occurred in the Year 1 reporting period and was reported by Boral to the Department. |
| 19/08/2016 | 15 | If, at any time after 5 years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not substantially commence the action without the written agreement of the Minister. | Not applicable | The action commenced on 12 th May 2020; therefore, this condition is not applicable. |



| Date of decision | Condition Number / Reference | Condition | Is the Project compliant with this condition? | Evidence / Comments |
|------------------|------------------------------------|--|---|--|
| 19/08/2016 | 16 | Unless otherwise agreed to in writing by the Minister, the approval holder must publish all management plans and reports, referred to in these conditions of approval on its website. Each management plan must be published on the website within one month of being approved by the Minister or submitted under condition 9a. All published reports must remain on website for the life of the approval unless otherwise agreed to in writing by the Minister. | Compliant | The approved Management Plans detailed within the referral conditions were uploaded within 1 month of being approved. The conditioned plans include the Offset Management Plan (OMP) and the Offsets Strategy were uploaded prior to the commencement of the action. The website link for the proponent is below: https://www.boral.com.au/locations/boral-quarries-narangba |



4. Non-compliances

4.1. Weed Management

The OMP states that all WONS will be treated within 12 months of the commencement of each stage of clearing for the Action. As detailed in **Table 3**, management of WONS was not able to be completed across the entirety of the Stage 1 offset area. Management of WONS was not able to be completed within part of the southern portion of the 'Remnant Vegetation' management area due to continuing safety concerns in accessibility and current issues with addressing these concerns without degrading the structural integrity of the steep slope, by developing access tracks in strategic locations across it. This constrained the ability to complete weed treatment within the southern remnant areas onsite. At present, an option to provide safe, effective access to these areas during dry weather, to allow personnel to carry weed treatment equipment and successfully treat weeds in the area, while maintaining the integrity of the landform, is being developed to integrate into on site management.

While a large area of WONS has been treated, covering the majority of the offset area, with treatment encroaching well into the remnant area during the ACR year, as this is not 100%, this is identified as a minor non-compliance under the requirements of the OMP. A full review and recommendations for potential updates to the OMP via adaptive management processes, will be completed in the coming year to identify and address any discrepancies in administrative OMP details following detailed on ground understanding of site conditions and weather impacts.

The current bushland regeneration contractors, Phoenix Environmental Services, continue discussions with Boral about the approach for weed management further within the remnant portion of Stage 1, with further proposed spraying and manual removal to occur within these areas in Year 6.



5. Appendices

Appendix A

EPBC Approval Conditions (EPBC 2014/7351)

Appendix B

Offset Area Voluntary Declaration Package

Appendix C

Written Notification of Commencement of Action

Appendix D

Contractor Reports

Appendix E

Weed Management Plan

Appendix F

Vertebrate Pest Management Plan

Appendix G

Bushfire Management Plan

Appendix H

Koala Habitat Management Plan



Appendix A

EPBC Approval Conditions (EPBC 2014/7351)





Approval

Narangba Quarry Expansion, Raynbird Road, Narangba, Queensland (EPBC 2014/7351).

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

| person to whom the | Bora |
|---------------------|------|
| approval is granted | |

Boral Resources (QLD) Pty Limited

proponent's ACN (if applicable)

ACN: 009 671 809

proposed action

Fifty six hectare (56 ha) expansion of the existing Narangba Quarry, including clearing of 52 ha of vegetation. The quarry expansion site is located on Raynbird Road, 18 km south of Caboolture; as described in the referral received by the Department on 30 September 2014 [See EPBC Act referral 2014/7351].

DECISION to approve:

Approval decision

| Controlling Provision | Decision |
|---|----------|
| Listed threatened species and communities (sections 18 & 18A) | Approve |

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 18 August 2076.

| Decision-mak | OF |
|--------------|----|

name and position

James Barker

Assistant Secretary

Assessments (Qld, Tas, Vic) and Sea Dumping Branch

signature

date of decision

19/8/2016

Conditions attached to the approval

- 1. The approval holder must only undertake the action on the project site shown at Appendix A.
- 2. The approval holder must not clear more than 52 hectares of koala habitat on the project site.
- 3. The approval holder must submit an Offset Management Plan for the **Minister's** written approval. The Offset Management Plan must:
 - a. be consistent with the offset proposed in the **preliminary documentation** and the **EPBC Act Environmental Offsets Policy (2012)**;
 - b. include a description of the management measures that will be implemented for the protection of koala and **koala habitat**, including discussion of how measures outlined take into account relevant conservation advice;
 - c. include a program to monitor and report on the effectiveness of these measures, and progress against performance and completion criteria; and
 - d. outline the process to obtain the legal mechanism for securing the offset area into conservation within 2 years of this approval.

The **approval holder** must not **commence** the action until the Offset Management Plan is approved by the **Minister** in writing. The approved Offset Management Plan must be implemented.

4. The approval holder must implement the sediment and erosion and stormwater management plans, as required under the Queensland Environmental Protection Act 1994, Environmental Protection Regulation 2008 and the Environmental Protection (Water) Policy 2009.

General

- **5.** Within 20 days after the **commencement** of the **action**, the **approval holder** must advise the **Department** in writing of the actual date of **commencement**.
- 6. The approval holder must maintain accurate records substantiating all activities and outcomes associated with or relevant to the conditions of approval, including measures taken to implement the management plans and demonstrate the outcomes required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department**'s website. The results of audits may also be publicised through the general media.
- 7. Unless otherwise agreed to in writing by the Minister, within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and details of noncompliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. Reports must remain published for the life of the approval. The person taking the action must continue to publish this report each year until such time as agreed to in writing by the Minister.

- 8. Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor and audit criteria must be approved by the Minister prior to the commencement of the audit. The audit report must address the approved criteria to the satisfaction of the Minister.
- 9. The approval holder may choose to revise a plan approved by the Minister under the conditions without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the approval holder makes this choice it must:
 - a. notify the **Department** in writing that the approved plan has been revised and provide the **Department** with:
 - i. an electronic copy of the revised plan or program;
 - ii. an explanation of the differences between the revised plan or program and the approved plan or program; and
 - iii. the reasons the person taking the action considers that taking the action in accordance with the revised plan or program would not be likely to have a **new** or increased impact;
 - b. declare in writing a date on which the revised plan or program will first be implemented by the **approval holder**. That date of first implementation must be at least 28 days after sub-condition 9a. is satisfied.
- 10. Condition 9 does not apply if the revisions to the approved plan, include changes to environmental offsets provided under the plan, in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the Minister. This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised plan, would, or would not, be likely to have new or increased impacts.
- 11. The approval holder may revoke its choice under condition 9 at any time by giving written notice to the **Department** in which case, commencing on the day after giving such notice, the approval holder must implement the plan previously submitted for approval. If the approval holder revokes the choice to implement a revised plan, without approval under section 143A of the Act, the plan or strategy most recently approved by the **Minister** must be implemented.
- **12.** If the **Minister** gives a notice to the **approval holder** that the **Minister** is satisfied that the taking of the **action** in accordance with the revised plan would be likely to have a **new or increased impact**, then:
 - a. condition 9 does not apply, or ceases to apply, in relation to the revised plan; and
 - b. the **approval holder** must implement the plan previously submitted for approval and approved by the **Minister**.

To avoid any doubt, this condition does not affect any operation of conditions 9 and 10 in the period before the day the notice is given.

At the time of giving the notice the **Minister** may also notify that for a specified period of time that condition 9 does not apply for one or more specified plans required under the approval.

- 13. Conditions 9, 10 and 11 are not intended to limit the operation of section 143A of the EPBC Act which allows the approval holder to submit a revised plan or strategy to the Minister for approval.
- 14. The approval holder must report any contravention of the conditions of this approval to the Department within 2 business days of the approval holder becoming aware of the contravention.
- **15.** If, at any time after 5 years from the date of this approval, the **approval holder** has not substantially **commenced** the **action**, then the **approval holder** must not substantially **commence** the **action** without the written agreement of the **Minister**.
- 16. Unless otherwise agreed to in writing by the Minister, the approval holder must publish all management plans and reports, referred to in these conditions of approval on its website. Each management plan must be published on the website within one month of being approved by the Minister or submitted under condition 9a. All published reports must remain on website for the life of the approval unless otherwise agreed to in writing by the Minister.

Definitions

Action: the Narangba Quarry Expansion project as referred under the *Environment Protection* and *Biodiversity Conservation Act* 1999 (EPBC 2014/7351)

Approval holder: the person to whom the approval is granted or any person acting on their behalf, or to whom the approval is transferred under section 145B of the **EPBC Act**.

Commence/commencement: The clearing of vegetation or construction of any infrastructure, excluding fences and signage, associated with the proposed action.

Department: The Australian Government Department or any other agency administering the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) from time to time.

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

EPBC Act Environmental Offsets Policy (2012): the *Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy (October 2012), or subsequent revision, including the Offset Assessment Guide.

Koala habitat: forest or woodland with two or more **known koala food tree species**, OR one food tree species that alone accounts for >50% of the vegetation in the relevant strata. Habitat that is threats, such as dogs and vehicle strike, removed. As described in *EPBC Act referral guidelines for the vulnerable koala (combined populations of Qld, NSW and the ACT).* Commonwealth of Australia, 2014.

Known koala food tree species: species of trees whose leaves are consumed by koalas. Koala food trees can generally be considered to be those of the following genus: *Angophora*, *Corymbia*, *Eucalyptus*, *Lophostemon* and *Melaleuca*. Note that food tree species may vary spatially and temporally and information specific to local area is likely to be most accurate. For lists of koala food tree species refer to the scientific literature or QLD Department of

Environment and Heritage protection koala habitat webpage: www.ehp.qld.gov.au/wildlife/koalas/koala-ecology.html

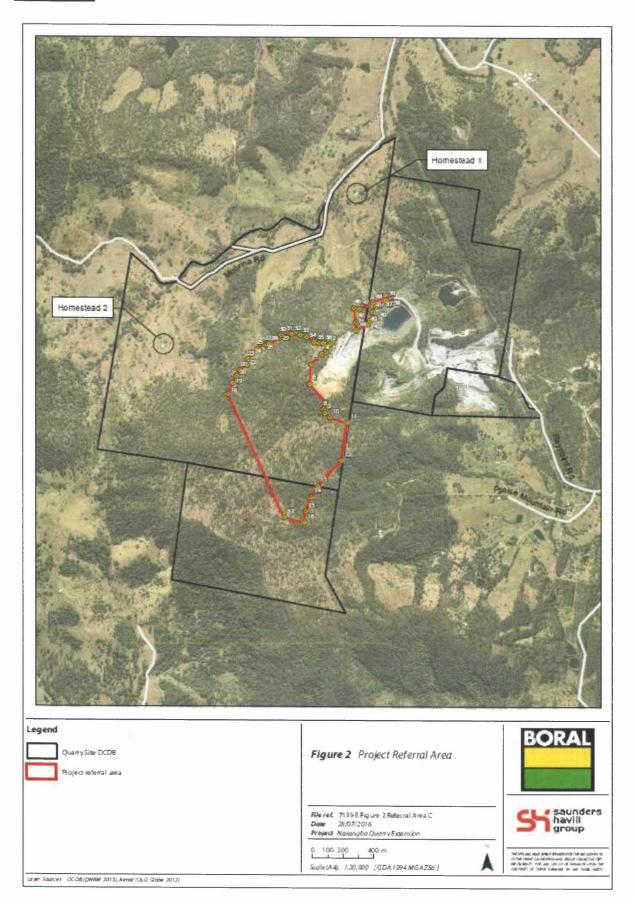
Minister: the **Minister** administering the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and includes a delegate of the **Minister**.

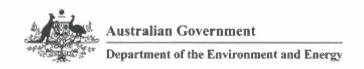
New or increased impact: A new or increased impact on any matter protected by the controlling provisions for the action, when compared the environmental impact or risk resulting from implementing to the plan, that has been approved by the Minister.

Preliminary documentation: Narangba Quarry Expansion, EPBC Act Preliminary Documentation Submission (March 2016). Saunders Havill Group on behalf of Boral Resources (Qld) Pty Ltd. As provided to the Department of the Environment.

Project site: Lot 1 on RP167435, Lot 53 on RP895391, Lot 139 on SL10320 and Lot 93 on SP193378 Raynbird Road, Narangba, Queensland as displayed in <u>Appendix A</u>.

Appendix A





VARIATION OF CONDITIONS ATTACHED TO APPROVAL Narangba Quarry Expansion, Raynbird Road, Narangba, Queensland (EPBC 2014/7351)

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

| Approved action | | |
|--|---|--|
| Person to whom the approval is granted | Boral Resources (QLD) Pty Limited | |
| approvario grantou | ABN: 009 671 809 | |
| Approved action | Fifty six hectare (56 ha) expansion of the existing Narangba Quarry, including clearing of 52 ha of vegetation. The quarry expansion site is located on Raynbird Road, 18 km south of Caboolture; as described in the referral received by the Department on 30 September 2014 [See EPBC Act referral 2014/7351]. | |
| Variation | | |
| Variation of conditions attached to approval | The variation is: | |
| attached to approval | Delete conditions 3 and 3A attached to the approval and substitute with conditions 3 and 3A specified in the table below. | |
| | Add new condition 3B specified in table below. | |
| | Delete the definition for Koala habitat attached to the approval and substitute with the definition for Koala habitat specified in the table below. | |
| Date of effect | This variation has effect on the date the instrument is signed | |
| Person authorised to n | nake decision | |
| Name and position | Gregory Manning Assistant Secretary Assistant (WA, SA, NT) & Post Approvals Branch | |
| Signature | Etto | |
| Date of decision | (August 2019 | |

| Date of decision | Definitions attached to approval |
|---|---|
| Original dated 19/08/2016 | Commence/commencement: The clearing of vegetation or construction of any infrastructure, excluding fences and signage, associated with the proposed action. |
| Original dated 19/08/2016 | Department: The Australian Government Department or any other agency administering the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> from time to time. |
| Variation dated 24/08/2018 | Environmental Management Plan Guidelines means the Environmental Management Plan Guidelines (2014), or subsequent revision. Available at www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines . |
| Original dated 19/08/2016 | EPBC Act: the Environment Protection and Biodiversity Conservation Act 1999 (Cth). |
| Original dated 19/08/2016 | EPBC Act Environmental Offsets Policy (2012): the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (October 2012), or subsequent revision, including the Offset Assessment Guide. |
| As varied on the date this instrument was signed | Koala habitat: forest or woodland with two or more known koala food tree species, OR one food tree species that alone accounts for >50% of the vegetation in the relevant strata. Koala habitat does not include habitat that is subject to threats, such as dogs and vehicle strike. As described in EPBC Act referral guidelines for the vulnerable koala (combined populations of Qld, NSW and the ACT). Commonwealth of Australia, 2014. |
| Original dated 19/08/2016 | Known koala food tree species: species of trees whose leaves are consumed by koalas. Koala food trees can generally be considered to be those of the following genus: Angophora, Corymbia, Eucalyptus, Lophostemon and Melaleuca. Note that food tree species may vary spatially and temporally and information specific to local area is likely to be most accurate. For lists of koala food tree species refer to the scientific literature or QLD Department of Environment and Heritage protection koala habitat webpage: www.ehp.qld.gov.au/wildlife/koalas/koala-ecology.html |
| Variation dated 24/08/2018 | Legally secured means placing on the land title, for the duration of the impact of the action , a voluntary declaration under the <i>Vegetation Management Act 1999 (Qld)</i> . |
| Original dated 19/08/2016 | Minister: the Minister administering the Environment Protection and Biodiversity Conservation Act 1999 (Cth) and includes a delegate of the Minister. |
| Original dated 19/08/2016 | New or increased impact: A new or increased impact on any matter protected by the controlling provisions for the action, when compared the environmental impact or risk resulting from implementing to the plan that has been approved by the Minister. |
| Original dated 19/08/2016 | Preliminary documentation: Narangba Quarry Expansion, EPBC Act Preliminary Documentation Submission (March 2016). Saunders Havill Group on behalf of Boral Resources (Qld) Pty Ltd. As provided to the Department of the Environment. |
| Original dated 19/08/2016 | Project site: Lot 1 on RP167435, Lot 53 on RP895391, Lot 139 on SL10320 and Lot 93 on SP193378 Raynbird Road, Narangba, Queensland as displayed in <u>Appendix A</u> . |

| Date of decision | Conditions attached to approval |
|---|---|
| Original dated 19/08/2016 | The approval holder must only undertake the action on the project site shown at <u>Appendix A.</u> |
| Original dated 19/08/2016 | 2. The approval holder must not clear more than 52 hectares of koala habitat on the project site. |
| As varied on the date this instrument was signed | To offset the loss of koala habitat, the approval holder must, by 1 December 2018, submit an Offset Strategy for the Minister's written approval. The Offset Strategy must be consistent with the EPBC Act Environmental Offsets Policy (2012), and must: |
| | a) confirm use of the offset area proposed in the preliminary documentation; and/or |
| | b) include the details of, and justification for, one or more other proposed offset area/s; and |
| | c) detail the process, including for preparation of the Offset Area Management Plan specified in Condition 3A, to ensure the offset area(s) is/are legally secured. |
| | The approved Offset Strategy must be implemented. |
| As varied on the date this instrument was signed | 3A. To offset the loss of koala habitat , the approval holder must submit an Offset Area Management Plan (OAMP) for the Minister's written approval. The OAMP must be prepared in accordance with the Department's Environmental Management Plan Guidelines, and must: |
| | a) be consistent with the approved Offset Strategy and the EPBC Act Environmental Offsets Policy (2012); |
| ä | b) include performance and completion criteria to protect koalas and manage koala habitat; |
| | c) describe the management measures that will be implemented to achieve and maintain the performance and completion criteria, including discussion of how those measures take into account relevant conservation advice; and |
| | d) include a program to monitor (including detecting triggers) and report on the effectiveness of these measures, including triggers and corrective actions, and progress against performance and completion criteria. |
| | The approval holder must not commence the action until the OAMP is approved by the Minister in writing. The approved OAMP must be implemented. |
| As varied on the date this instrument was signed | 3B. The approval holder must legally secure the offset area/s specified in the approved Offset Strategy by 28 February 2020. |
| Original dated 19/08/2016 | 4. The approval holder must implement the sediment and erosion and stormwater management plans, as required under the <i>Queensland Environmental Protection Act 1994</i> , <i>Environmental Protection Regulation 2008 and the Environmental Protection (Water) Policy 2009</i> . |
| Original dated 19/08/2016 | 5. Within 20 days after the commencement of the action , the approval holder must advise the Department in writing of the actual date of commencement . |

| Date of decision | Conditions attached to approval | | |
|---------------------------------|---|--|--|
| Original dated 19/08/2016 | 6. The approval holder must maintain accurate records substantiating all activities and outcomes associated with or relevant to the conditions of approval, including measures taken to implement the management plans and demonstrate the outcomes required by this approval, and make ther available upon request to the Department . Such records may be subject audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act , or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department 's website. The results of audits may also be publicised thro the general media. | | |
| Original dated 19/08/2016 | 7. Unless otherwise agreed to in writing by the Minister , within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and details of non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. Reports must remain published for the life of the approval. The person taking the action must continue to publish this report each year until such time as agreed to in writing by the Minister . | | |
| Original dated 19/08/2016 | 8. Upon the direction of the Minister , the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister . The independent auditor and audit criteria must be approved by the Minister prior to the commencement of the audit. The audit report must address the approved criteria to the satisfaction of the Minister . | | |
| Original dated 19/08/2016 | 9. The approval holder may choose to revise a plan approved by the Minister under the conditions without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the approval holder makes this choice it must: a) notify the Department in writing that the approved plan has been revised and provide the Department with: i) an electronic copy of the revised plan or program; ii) an explanation of the differences between the revised plan or program and the approved plan or program; and iii) the reasons the person taking the action considers that taking the action in accordance with the revised plan or program would not be likely to have a new or increased impact; b) declare in writing a date on which the revised plan or program will first be implemented by the approval holder. That date of first implementation must be at least 28 days after sub-condition 9a.is satisfied. | | |
| Original dated 19/08/2016 | 10. Condition 9 does not apply if the revisions to the approved plan, include changes to environmental offsets provided under the plan, in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the Minister . This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised plan, would, or would not, be likely to have new or increased impacts . | | |

| Date of decision | Conditions attached to approval |
|---------------------------------|---|
| Original dated 19/08/2016 | 11. The approval holder may revoke its choice under condition 9 at any time by giving written notice to the Department in which case, commencing on the day after giving such notice, the approval holder must implement the plan previously submitted for approval. If the approval holder revokes the choice to implement a revised plan, without approval under section 143A of the Act, the plan or strategy most recently approved by the Minister must be implemented. |
| Original dated 19/08/2016 | 12. If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then: a) condition 9 does not apply, or ceases to apply, in relation to the revised plan; and b) the approval holder must implement the plan previously submitted for approval and approved by the Minister. To avoid any doubt, this condition does not affect any operation of conditions 9 and 10 in the period before the day the notice is given. At the time of giving the notice the Minister may also notify that for a specified period of time that condition 9 does not apply for one or more specified plans required under the approval. |
| Original dated 19/08/2016 | 13. Conditions 9, 10 and 11 are not intended to limit the operation of section 143A of the EPBC Act which allows the approval holder to submit a revised plan or strategy to the Minister for approval. |
| Original dated 19/08/2016 | 14. The approval holder must report any contravention of the conditions of this approval to the Department within 2 business days of the approval holder becoming aware of the contravention. |
| Original dated 19/08/2016 | 15. If, at any time after 5 years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not substantially commence the action without the written agreement of the Minister. |
| Original dated 19/08/2016 | 16. Unless otherwise agreed to in writing by the Minister, the approval holder must publish all management plans and reports, referred to in these conditions of approval on its website. Each management plan must be published on the website within one month of being approved by the Minister or submitted under condition 9a. All published reports must remain on website for the life of the approval unless otherwise agreed to in writing by the Minister. |

| Date of decision | Definitions attached to approval |
|---------------------------------|--|
| Original dated 19/08/2016 | Action: the Narangba Quarry Expansion project as referred under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC 2014/7351) |
| Original dated 19/08/2016 | Approval holder: the person to whom the approval is granted or any person acting on their behalf, or to whom the approval is transferred under section 145B of the EPBC Act. |



Approval

Narangba Quarry Expansion, Raynbird Road, Narangba, Queensland (EPBC 2014/7351).

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

| person to whom the | Bora |
|---------------------|------|
| approval is granted | |

Boral Resources (QLD) Pty Limited

proponent's ACN (if applicable)

ACN: 009 671 809

proposed action

Fifty six hectare (56 ha) expansion of the existing Narangba Quarry, including clearing of 52 ha of vegetation. The quarry expansion site is located on Raynbird Road, 18 km south of Caboolture; as described in the referral received by the Department on 30 September 2014 [See EPBC Act referral 2014/7351].

DECISION to approve:

Approval decision

| Controlling Provision | Decision |
|---|----------|
| Listed threatened species and communities (sections 18 & 18A) | Approve |

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 18 August 2076.

| Decision-mak | OF |
|--------------|----|

name and position

James Barker

Assistant Secretary

Assessments (Qld, Tas, Vic) and Sea Dumping Branch

signature

date of decision

19/8/2016

Conditions attached to the approval

- 1. The approval holder must only undertake the action on the project site shown at Appendix A.
- 2. The approval holder must not clear more than 52 hectares of koala habitat on the project site.
- 3. The approval holder must submit an Offset Management Plan for the **Minister's** written approval. The Offset Management Plan must:
 - a. be consistent with the offset proposed in the **preliminary documentation** and the **EPBC Act Environmental Offsets Policy (2012)**;
 - b. include a description of the management measures that will be implemented for the protection of koala and **koala habitat**, including discussion of how measures outlined take into account relevant conservation advice;
 - c. include a program to monitor and report on the effectiveness of these measures, and progress against performance and completion criteria; and
 - d. outline the process to obtain the legal mechanism for securing the offset area into conservation within 2 years of this approval.

The **approval holder** must not **commence** the action until the Offset Management Plan is approved by the **Minister** in writing. The approved Offset Management Plan must be implemented.

4. The approval holder must implement the sediment and erosion and stormwater management plans, as required under the Queensland Environmental Protection Act 1994, Environmental Protection Regulation 2008 and the Environmental Protection (Water) Policy 2009.

General

- **5.** Within 20 days after the **commencement** of the **action**, the **approval holder** must advise the **Department** in writing of the actual date of **commencement**.
- 6. The approval holder must maintain accurate records substantiating all activities and outcomes associated with or relevant to the conditions of approval, including measures taken to implement the management plans and demonstrate the outcomes required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department**'s website. The results of audits may also be publicised through the general media.
- 7. Unless otherwise agreed to in writing by the Minister, within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and details of noncompliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. Reports must remain published for the life of the approval. The person taking the action must continue to publish this report each year until such time as agreed to in writing by the Minister.

- 8. Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor and audit criteria must be approved by the Minister prior to the commencement of the audit. The audit report must address the approved criteria to the satisfaction of the Minister.
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 - a. notify the **Department** in writing that the approved plan has been revised and provide the **Department** with:
 - i. an electronic copy of the revised plan or program;
 - ii. an explanation of the differences between the revised plan or program and the approved plan or program; and
 - iii. the reasons the person taking the action considers that taking the action in accordance with the revised plan or program would not be likely to have a **new** or increased impact;
 - b. declare in writing a date on which the revised plan or program will first be implemented by the **approval holder**. That date of first implementation must be at least 28 days after sub-condition 9a. is satisfied.
- 10. Condition 9 does not apply if the revisions to the approved plan, include changes to environmental offsets provided under the plan, in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the Minister. This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised plan, would, or would not, be likely to have new or increased impacts.
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- 14. The approval holder must report any contravention of the conditions of this approval to the Department within 2 business days of the approval holder becoming aware of the contravention.
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Definitions

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Department: The Australian Government Department or any other agency administering the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) from time to time.

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EPBC Act Environmental Offsets Policy (2012): the *Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy (October 2012), or subsequent revision, including the Offset Assessment Guide.

Koala habitat: forest or woodland with two or more **known koala food tree species**, OR one food tree species that alone accounts for >50% of the vegetation in the relevant strata. Habitat that is threats, such as dogs and vehicle strike, removed. As described in *EPBC Act referral guidelines for the vulnerable koala (combined populations of Qld, NSW and the ACT).* Commonwealth of Australia, 2014.

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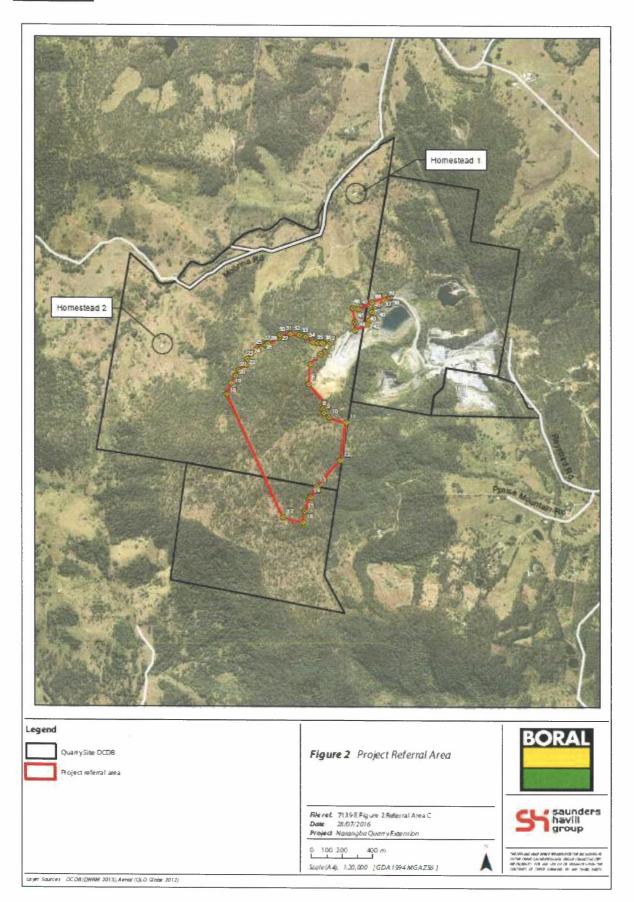
Minister: the **Minister** administering the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and includes a delegate of the **Minister**.

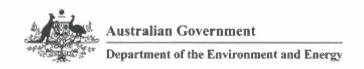
New or increased impact: A new or increased impact on any matter protected by the controlling provisions for the action, when compared the environmental impact or risk resulting from implementing to the plan, that has been approved by the Minister.

Preliminary documentation: Narangba Quarry Expansion, EPBC Act Preliminary Documentation Submission (March 2016). Saunders Havill Group on behalf of Boral Resources (Qld) Pty Ltd. As provided to the Department of the Environment.

Project site: Lot 1 on RP167435, Lot 53 on RP895391, Lot 139 on SL10320 and Lot 93 on SP193378 Raynbird Road, Narangba, Queensland as displayed in <u>Appendix A</u>.

Appendix A





VARIATION OF CONDITIONS ATTACHED TO APPROVAL Narangba Quarry Expansion, Raynbird Road, Narangba, Queensland (EPBC 2014/7351)

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

| Approved action | |
|--|---|
| Person to whom the approval is granted | Boral Resources (QLD) Pty Limited |
| approvario grantou | ABN: 009 671 809 |
| Approved action | Fifty six hectare (56 ha) expansion of the existing Narangba Quarry, including clearing of 52 ha of vegetation. The quarry expansion site is located on Raynbird Road, 18 km south of Caboolture; as described in the referral received by the Department on 30 September 2014 [See EPBC Act referral 2014/7351]. |
| Variation | |
| Variation of conditions attached to approval | The variation is: |
| attached to approval | Delete conditions 3 and 3A attached to the approval and substitute with conditions 3 and 3A specified in the table below. |
| | Add new condition 3B specified in table below. |
| | Delete the definition for Koala habitat attached to the approval and substitute with the definition for Koala habitat specified in the table below. |
| Date of effect | This variation has effect on the date the instrument is signed |
| Person authorised to n | nake decision |
| Name and position | Gregory Manning Assistant Secretary Assistant (WA, SA, NT) & Post Approvals Branch |
| Signature | Etto |
| Date of decision | (August 2019 |

| Date of decision | Definitions attached to approval | |
|---|---|--|
| Original dated 19/08/2016 | Commence/commencement: The clearing of vegetation or construction of any infrastructure, excluding fences and signage, associated with the proposed action. | |
| Original dated 19/08/2016 | Department: The Australian Government Department or any other agency administering the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> from time to time. | |
| Variation dated 24/08/2018 | Environmental Management Plan Guidelines means the Environmental Management Plan Guidelines (2014), or subsequent revision. Available at www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines . | |
| Original dated 19/08/2016 | EPBC Act: the Environment Protection and Biodiversity Conservation Act 1999 (Cth). | |
| Original dated 19/08/2016 | EPBC Act Environmental Offsets Policy (2012): the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (October 2012), or subsequent revision, including the Offset Assessment Guide. | |
| As varied on the date this instrument was signed | Koala habitat: forest or woodland with two or more known koala food tree species, OR one food tree species that alone accounts for >50% of the vegetation in the relevant strata. Koala habitat does not include habitat that is subject to threats, such as dogs and vehicle strike. As described in EPBC Act referral guidelines for the vulnerable koala (combined populations of Qld, NSW and the ACT). Commonwealth of Australia, 2014. | |
| Original dated 19/08/2016 | Known koala food tree species: species of trees whose leaves are consumed by koalas. Koala food trees can generally be considered to be those of the following genus: Angophora, Corymbia, Eucalyptus, Lophostemon and Melaleuca. Note that food tree species may vary spatially and temporally and information specific to local area is likely to be most accurate. For lists of koala food tree species refer to the scientific literature or QLD Department of Environment and Heritage protection koala habitat webpage: www.ehp.qld.gov.au/wildlife/koalas/koala-ecology.html | |
| Variation dated 24/08/2018 | Legally secured means placing on the land title, for the duration of the impact of the action , a voluntary declaration under the <i>Vegetation Management Act 1999 (Qld)</i> . | |
| Original dated 19/08/2016 | Minister: the Minister administering the Environment Protection and Biodiversity Conservation Act 1999 (Cth) and includes a delegate of the Minister. | |
| Original dated 19/08/2016 | New or increased impact: A new or increased impact on any matter protected by the controlling provisions for the action, when compared the environmental impact or risk resulting from implementing to the plan that has been approved by the Minister. | |
| Original dated 19/08/2016 | Preliminary documentation: Narangba Quarry Expansion, EPBC Act Preliminary Documentation Submission (March 2016). Saunders Havill Group on behalf of Boral Resources (Qld) Pty Ltd. As provided to the Department of the Environment. | |
| Original dated 19/08/2016 | Project site: Lot 1 on RP167435, Lot 53 on RP895391, Lot 139 on SL10320 and Lot 93 on SP193378 Raynbird Road, Narangba, Queensland as displayed in <u>Appendix A</u> . | |

| Date of decision | Conditions attached to approval | |
|---|--|--|
| Original dated 19/08/2016 | The approval holder must only undertake the action on the project site shown at <u>Appendix A.</u> | |
| Original dated 19/08/2016 | 2. The approval holder must not clear more than 52 hectares of koala habitat on the project site. | |
| As varied on the date this instrument was signed | To offset the loss of koala habitat, the approval holder must, by 1 December 2018, submit an Offset Strategy for the Minister's written approval. The Offset Strategy must be consistent with the EPBC Act Environmental Offsets Policy (2012), and must: | |
| | a) confirm use of the offset area proposed in the preliminary documentation; and/or | |
| | b) include the details of, and justification for, one or more other proposed offset area/s; and | |
| | c) detail the process, including for preparation of the Offset Area Management Plan specified in Condition 3A, to ensure the offset area(s) is/are legally secured. | |
| | The approved Offset Strategy must be implemented. | |
| As varied on the date this instrument was signed | 3A. To offset the loss of koala habitat , the approval holder must submit an Offset Area Management Plan (OAMP) for the Minister's written approval. The OAMP must be prepared in accordance with the Department's Environmental Management Plan Guidelines , and must: | |
| | a) be consistent with the approved Offset Strategy and the EPBC Act Environmental Offsets Policy (2012); | |
| ä | b) include performance and completion criteria to protect koalas and manage koala habitat; | |
| | c) describe the management measures that will be implemented to achieve and maintain the performance and completion criteria, including discussion of how those measures take into account relevant conservation advice; and | |
| | d) include a program to monitor (including detecting triggers) and report on the effectiveness of these measures, including triggers and corrective actions, and progress against performance and completion criteria. | |
| | The approval holder must not commence the action until the OAMP is approved by the Minister in writing. The approved OAMP must be implemented. | |
| As varied on the date this instrument was signed | 3B. The approval holder must legally secure the offset area/s specified in the approved Offset Strategy by 28 February 2020. | |
| Original dated 19/08/2016 | 4. The approval holder must implement the sediment and erosion and stormwater management plans, as required under the <i>Queensland Environmental Protection Act 1994</i> , <i>Environmental Protection Regulation 2008 and the Environmental Protection (Water) Policy 2009</i> . | |
| Original dated 19/08/2016 | 5. Within 20 days after the commencement of the action , the approval holder must advise the Department in writing of the actual date of commencement . | |

| Date of decision | Conditions attached to approval | |
|---------------------------------|---|--|
| Original dated 19/08/2016 | 6. The approval holder must maintain accurate records substantiating all activities and outcomes associated with or relevant to the conditions of approval, including measures taken to implement the management plans and demonstrate the outcomes required by this approval, and make them available upon request to the Department . Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act , or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department 's website. The results of audits may also be publicised through the general media. | |
| Original dated 19/08/2016 | 7. Unless otherwise agreed to in writing by the Minister , within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and details of non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. Reports must remain published for the life of the approval. The person taking the action must continue to publish this report each year until such time as agreed to in writing by the Minister . | |
| Original dated 19/08/2016 | 8. Upon the direction of the Minister , the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister . The independent auditor and audit criteria must be approved by the Minister prior to the commencement of the audit. The audit report must address the approved criteria to the satisfaction of the Minister . | |
| Original dated 19/08/2016 | 9. The approval holder may choose to revise a plan approved by the Minister under the conditions without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the approval holder makes this choice it must: a) notify the Department in writing that the approved plan has been revised and provide the Department with: i) an electronic copy of the revised plan or program; ii) an explanation of the differences between the revised plan or program and the approved plan or program; and iii) the reasons the person taking the action considers that taking the action in accordance with the revised plan or program would not be likely to have a new or increased impact; b) declare in writing a date on which the revised plan or program will first be implemented by the approval holder. That date of first implementation must be at least 28 days after sub-condition 9a.is satisfied. | |
| Original dated 19/08/2016 | 10. Condition 9 does not apply if the revisions to the approved plan, include changes to environmental offsets provided under the plan, in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the Minister . This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised plan, would, or would not, be likely to have new or increased impacts . | |

| Date of decision | Conditions attached to approval | |
|---------------------------------|---|--|
| Original dated 19/08/2016 | 11. The approval holder may revoke its choice under condition 9 at any time by giving written notice to the Department in which case, commencing on the day after giving such notice, the approval holder must implement the plan previously submitted for approval. If the approval holder revokes the choice to implement a revised plan, without approval under section 143A of the Act, the plan or strategy most recently approved by the Minister must be implemented. | |
| Original dated 19/08/2016 | 12. If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then: a) condition 9 does not apply, or ceases to apply, in relation to the revised plan; and b) the approval holder must implement the plan previously submitted for approval and approved by the Minister. To avoid any doubt, this condition does not affect any operation of conditions 9 and 10 in the period before the day the notice is given. At the time of giving the notice the Minister may also notify that for a specified period of time that condition 9 does not apply for one or more specified plans required under the approval. | |
| Original dated 19/08/2016 | 13. Conditions 9, 10 and 11 are not intended to limit the operation of section 143A of the EPBC Act which allows the approval holder to submit a revised plan or strategy to the Minister for approval. | |
| Original dated 19/08/2016 | 14. The approval holder must report any contravention of the conditions of this approval to the Department within 2 business days of the approval holder becoming aware of the contravention. | |
| Original dated 19/08/2016 | 15. If, at any time after 5 years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not substantially commence the action without the written agreement of the Minister. | |
| Original dated 19/08/2016 | 16. Unless otherwise agreed to in writing by the Minister, the approval holder must publish all management plans and reports, referred to in these conditions of approval on its website. Each management plan must be published on the website within one month of being approved by the Minister or submitted under condition 9a. All published reports must remain on website for the life of the approval unless otherwise agreed to in writing by the Minister. | |

| Date of decision | Definitions attached to approval | |
|---------------------------------|--|--|
| Original dated 19/08/2016 | Action: the Narangba Quarry Expansion project as referred under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC 2014/7351) | |
| Original dated 19/08/2016 | Approval holder: the person to whom the approval is granted or any person acting on their behalf, or to whom the approval is transferred under section 145B of the EPBC Act. | |



Mr Sam Maynard
Principal Environmental Scientist / Associate Partner
Saunders Havill Group
9 Thompson St
Bowen Hills Queensland 4006

EPBC 2014/7351: Narangba Quarry Extension, Raynbird Road - Variation of Condition 3 and approval of Offset Strategy

Dear Mr Maynard

Thank you for your email dated 11 July 2019 to the Department of the Environment and Energy (Department), requesting a variation to condition 3 of the approval dated 24 August 2018.

Officers of this Department have advised me on the variation request. As a delegate of the Minister, I have varied Condition 3 of EPBC Approval 2014/7351 under section 143(1)(c) of the *Environment Protection and Biodiversity Conservation Act 1999* to extend the timeframe to legally secure the offset area. The approved action must now be undertaken in accordance with the varied conditions.

Thank you for your email dated 23 July 2019 to the Department, seeking approval of the Offset Strategy in accordance with condition 3 for the above project, as now varied, under the *Environment Protection and Biodiversity Conservation Act 1999.*

Officers of this Department have advised me on the Offset Strategy and the conditions of approval. On this basis, and as a delegate of the Minister, I have decided to approve the *EPBC Act Amended Offset Strategy*, dated 11July 2019. The approved strategy must now be implemented.

As you are aware, the Department has an active monitoring program which includes monitoring inspections, desk top document reviews and audits. Please ensure that you maintain accurate records of all activities associated with, or relevant to, the conditions of approval so that they can be made available to the Department on request.

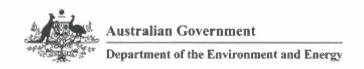
Should you require any further information please contact Alexandra Cooper on (02) 6275 9940 or postapproval@environment.gov.au.

Yours sincerely

Greg Manning, Assistant Secretary

Assessments (WA, SA, NT) & Post Approvals Branch

/// August 2019



VARIATION OF CONDITIONS ATTACHED TO APPROVAL Narangba Quarry Expansion, Raynbird Road, Narangba, Queensland (EPBC 2014/7351)

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

| Approved action | |
|--|---|
| Person to whom the approval is granted | Boral Resources (QLD) Pty Limited |
| approvario grantou | ABN: 009 671 809 |
| Approved action | Fifty six hectare (56 ha) expansion of the existing Narangba Quarry, including clearing of 52 ha of vegetation. The quarry expansion site is located on Raynbird Road, 18 km south of Caboolture; as described in the referral received by the Department on 30 September 2014 [See EPBC Act referral 2014/7351]. |
| Variation | |
| Variation of conditions attached to approval | The variation is: |
| attached to approval | Delete conditions 3 and 3A attached to the approval and substitute with conditions 3 and 3A specified in the table below. |
| | Add new condition 3B specified in table below. |
| | Delete the definition for Koala habitat attached to the approval and substitute with the definition for Koala habitat specified in the table below. |
| Date of effect | This variation has effect on the date the instrument is signed |
| Person authorised to n | nake decision |
| Name and position | Gregory Manning Assistant Secretary Assistant (WA, SA, NT) & Post Approvals Branch |
| Signature | Etto |
| Date of decision | (August 2019 |

| Date of decision | Conditions attached to approval | |
|---|--|--|
| Original dated 19/08/2016 | The approval holder must only undertake the action on the project site shown at <u>Appendix A.</u> | |
| Original dated 19/08/2016 | 2. The approval holder must not clear more than 52 hectares of koala habitat on the project site. | |
| As varied on the date this instrument was signed | To offset the loss of koala habitat, the approval holder must, by 1 December 2018, submit an Offset Strategy for the Minister's written approval. The Offset Strategy must be consistent with the EPBC Act Environmental Offsets Policy (2012), and must: | |
| | a) confirm use of the offset area proposed in the preliminary documentation; and/or | |
| | b) include the details of, and justification for, one or more other proposed offset area/s; and | |
| | c) detail the process, including for preparation of the Offset Area Management Plan specified in Condition 3A, to ensure the offset area(s) is/are legally secured. | |
| | The approved Offset Strategy must be implemented. | |
| As varied on the date this instrument was signed | 3A. To offset the loss of koala habitat , the approval holder must submit an Offset Area Management Plan (OAMP) for the Minister's written approval. The OAMP must be prepared in accordance with the Department's Environmental Management Plan Guidelines , and must: | |
| | a) be consistent with the approved Offset Strategy and the EPBC Act Environmental Offsets Policy (2012); | |
| ä | b) include performance and completion criteria to protect koalas and manage koala habitat; | |
| | c) describe the management measures that will be implemented to achieve and maintain the performance and completion criteria, including discussion of how those measures take into account relevant conservation advice; and | |
| | d) include a program to monitor (including detecting triggers) and report on the effectiveness of these measures, including triggers and corrective actions, and progress against performance and completion criteria. | |
| | The approval holder must not commence the action until the OAMP is approved by the Minister in writing. The approved OAMP must be implemented. | |
| As varied on the date this instrument was signed | 3B. The approval holder must legally secure the offset area/s specified in the approved Offset Strategy by 28 February 2020. | |
| Original dated 19/08/2016 | 4. The approval holder must implement the sediment and erosion and stormwater management plans, as required under the <i>Queensland Environmental Protection Act 1994</i> , <i>Environmental Protection Regulation 2008 and the Environmental Protection (Water) Policy 2009</i> . | |
| Original dated 19/08/2016 | 5. Within 20 days after the commencement of the action , the approval holder must advise the Department in writing of the actual date of commencement . | |

| Date of decision | Conditions attached to approval | |
|---------------------------------|---|--|
| Original dated 19/08/2016 | 6. The approval holder must maintain accurate records substantiating all activities and outcomes associated with or relevant to the conditions of approval, including measures taken to implement the management plans and demonstrate the outcomes required by this approval, and make them available upon request to the Department . Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act , or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department 's website. The results of audits may also be publicised through the general media. | |
| Original dated 19/08/2016 | 7. Unless otherwise agreed to in writing by the Minister , within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and details of non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. Reports must remain published for the life of the approval. The person taking the action must continue to publish this report each year until such time as agreed to in writing by the Minister . | |
| Original dated 19/08/2016 | 8. Upon the direction of the Minister , the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister . The independent auditor and audit criteria must be approved by the Minister prior to the commencement of the audit. The audit report must address the approved criteria to the satisfaction of the Minister . | |
| Original dated 19/08/2016 | 9. The approval holder may choose to revise a plan approved by the Minister under the conditions without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the approval holder makes this choice it must: a) notify the Department in writing that the approved plan has been revised and provide the Department with: i) an electronic copy of the revised plan or program; ii) an explanation of the differences between the revised plan or program and the approved plan or program; and iii) the reasons the person taking the action considers that taking the action in accordance with the revised plan or program would not be likely to have a new or increased impact; b) declare in writing a date on which the revised plan or program will first be implemented by the approval holder. That date of first implementation must be at least 28 days after sub-condition 9a.is satisfied. | |
| Original dated 19/08/2016 | 10. Condition 9 does not apply if the revisions to the approved plan, include changes to environmental offsets provided under the plan, in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the Minister . This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised plan, would, or would not, be likely to have new or increased impacts . | |

| Date of decision | Conditions attached to approval | |
|---------------------------------|---|--|
| Original dated 19/08/2016 | 11. The approval holder may revoke its choice under condition 9 at any time by giving written notice to the Department in which case, commencing on the day after giving such notice, the approval holder must implement the plan previously submitted for approval. If the approval holder revokes the choice to implement a revised plan, without approval under section 143A of the Act, the plan or strategy most recently approved by the Minister must be implemented. | |
| Original dated 19/08/2016 | 12. If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then: a) condition 9 does not apply, or ceases to apply, in relation to the revised plan; and b) the approval holder must implement the plan previously submitted for approval and approved by the Minister. To avoid any doubt, this condition does not affect any operation of conditions 9 and 10 in the period before the day the notice is given. At the time of giving the notice the Minister may also notify that for a specified period of time that condition 9 does not apply for one or more specified plans required under the approval. | |
| Original dated 19/08/2016 | 13. Conditions 9, 10 and 11 are not intended to limit the operation of section 143A of the EPBC Act which allows the approval holder to submit a revised plan or strategy to the Minister for approval. | |
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| Original dated 19/08/2016 | 16. Unless otherwise agreed to in writing by the Minister, the approval holder must publish all management plans and reports, referred to in these conditions of approval on its website. Each management plan must be published on the website within one month of being approved by the Minister or submitted under condition 9a. All published reports must remain on website for the life of the approval unless otherwise agreed to in writing by the Minister. | |

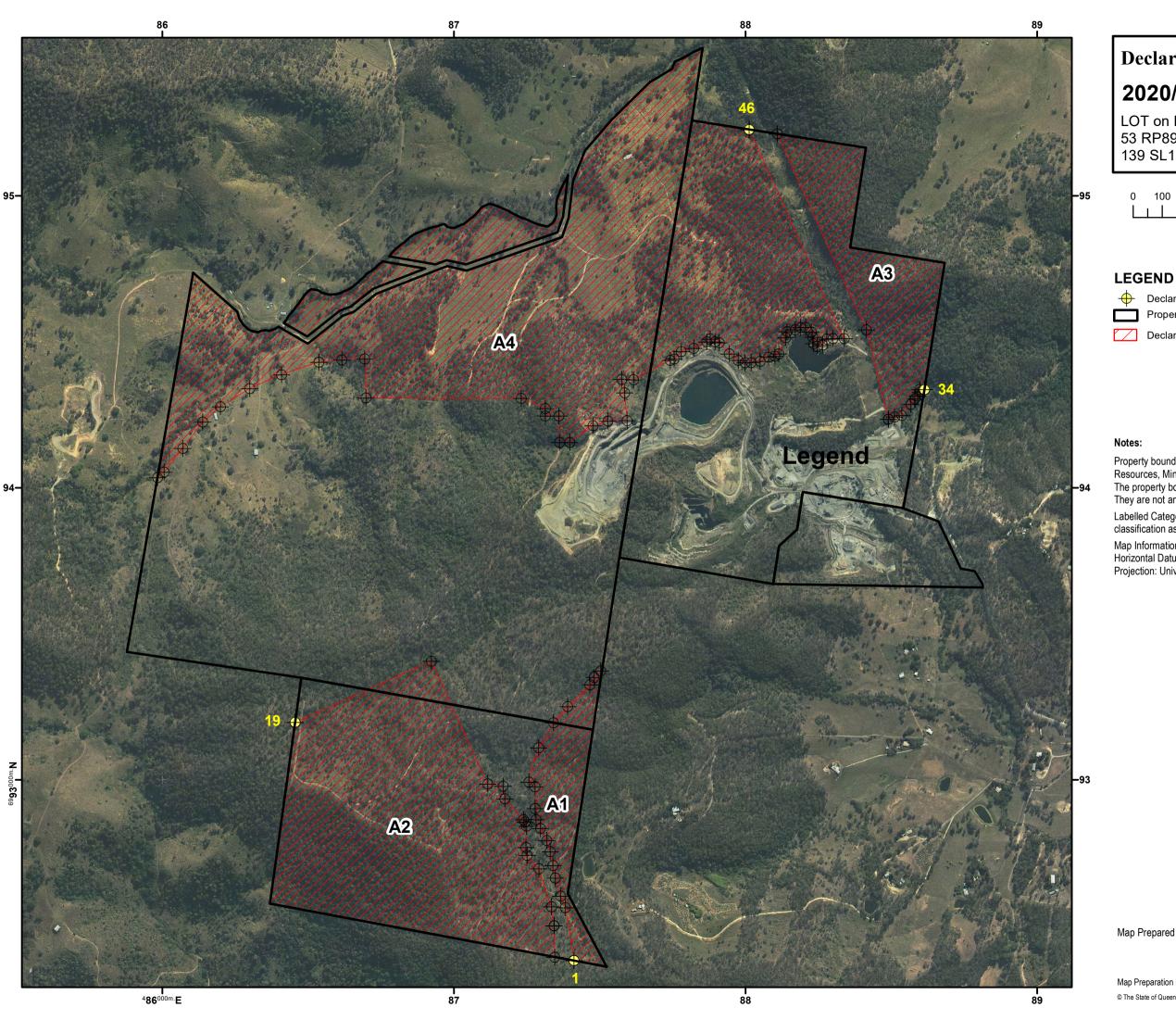
| Date of decision | Definitions attached to approval |
|---------------------------------|--|
| Original dated 19/08/2016 | Action: the Narangba Quarry Expansion project as referred under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC 2014/7351) |
| Original dated 19/08/2016 | Approval holder: the person to whom the approval is granted or any person acting on their behalf, or to whom the approval is transferred under section 145B of the EPBC Act. |

| Date of decision | Definitions attached to approval |
|---|---|
| Original dated 19/08/2016 | Commence/commencement: The clearing of vegetation or construction of any infrastructure, excluding fences and signage, associated with the proposed action. |
| Original dated 19/08/2016 | Department: The Australian Government Department or any other agency administering the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> from time to time. |
| Variation dated 24/08/2018 | Environmental Management Plan Guidelines means the Environmental Management Plan Guidelines (2014), or subsequent revision. Available at www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines . |
| Original dated 19/08/2016 | EPBC Act: the Environment Protection and Biodiversity Conservation Act 1999 (Cth). |
| Original dated 19/08/2016 | EPBC Act Environmental Offsets Policy (2012): the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (October 2012), or subsequent revision, including the Offset Assessment Guide. |
| As varied on the date this instrument was signed | Koala habitat: forest or woodland with two or more known koala food tree species, OR one food tree species that alone accounts for >50% of the vegetation in the relevant strata. Koala habitat does not include habitat that is subject to threats, such as dogs and vehicle strike. As described in EPBC Act referral guidelines for the vulnerable koala (combined populations of Qld, NSW and the ACT). Commonwealth of Australia, 2014. |
| Original dated 19/08/2016 | Known koala food tree species: species of trees whose leaves are consumed by koalas. Koala food trees can generally be considered to be those of the following genus: Angophora, Corymbia, Eucalyptus, Lophostemon and Melaleuca. Note that food tree species may vary spatially and temporally and information specific to local area is likely to be most accurate. For lists of koala food tree species refer to the scientific literature or QLD Department of Environment and Heritage protection koala habitat webpage: www.ehp.qld.gov.au/wildlife/koalas/koala-ecology.html |
| Variation dated 24/08/2018 | Legally secured means placing on the land title, for the duration of the impact of the action , a voluntary declaration under the <i>Vegetation Management Act 1999 (Qld)</i> . |
| Original dated 19/08/2016 | Minister: the Minister administering the Environment Protection and Biodiversity Conservation Act 1999 (Cth) and includes a delegate of the Minister. |
| Original dated 19/08/2016 | New or increased impact: A new or increased impact on any matter protected by the controlling provisions for the action, when compared the environmental impact or risk resulting from implementing to the plan that has been approved by the Minister. |
| Original dated 19/08/2016 | Preliminary documentation: Narangba Quarry Expansion, EPBC Act Preliminary Documentation Submission (March 2016). Saunders Havill Group on behalf of Boral Resources (Qld) Pty Ltd. As provided to the Department of the Environment. |
| Original dated 19/08/2016 | Project site: Lot 1 on RP167435, Lot 53 on RP895391, Lot 139 on SL10320 and Lot 93 on SP193378 Raynbird Road, Narangba, Queensland as displayed in <u>Appendix A</u> . |

Appendix B

Offset Area Voluntary Declaration Package



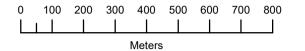


Declared Area Map

2020/010206



LOT on PLAN 53 RP895391, 93 SP193378, 139 SL10320 & 1 RP167435

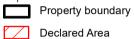


Scale: 1:12000

(original size A3)



Declared Area reference start points



Notes:

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

Labelled Category B areas indicate a change in Regional Ecosystem classification as a result of detailed assessment.

Map Information:

Horizontal Datum: GDA 1994

Projection: Universal Transverse Mercator - Zone 56

Map Prepared by: DGH

Department of Natural Resources, Mines and Energy PO Box 589, Dalby, Qld, 4405

Map Preparation Date: 07/02/2020

© The State of Queensland (Natural Resources, Mines and Energy) 2018

Author: D Hinz

Ref number: 2020/010206

Unit: Natural Resource Assessment

Phone: (07) 4531 8513

26 February 2020

Queensland
Government
Department of
Natural Resources,
Mines and Energy

Andrew Lyndon Level 6, 88 Musk Avenue, KELVIN GROVE QLD 4059

Dear Andrew

Re: Declaration over part of lots 53 RP895391, 93 SP193378, 139 SL10320 & 1 RP167435– Moreton Bay Regional Council – as an area of high nature conservation value

This is to advise you that a declaration, on the above lot, has been made—consistent with your application—by the Department of Natural Resources Mines and Energy (DNRME) on 24 February 2020.

A copy of each of the following documents is attached for your records:

- Declared area notice
- Offset management plan 6 November 2019 Job No. 7139 Quarry Expansion for lots 53 RP895391, 93 SP193378, 139 SL10320 & 1 RP167435
- Declared area map 2020/010206
- Property Map of Assessable Vegetation PMAV 2020/010207 showing the declared area as a Category A area

If a registered owner requires additional copies of these documents, they can be purchased at any DNRME Customer Service Centre.

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

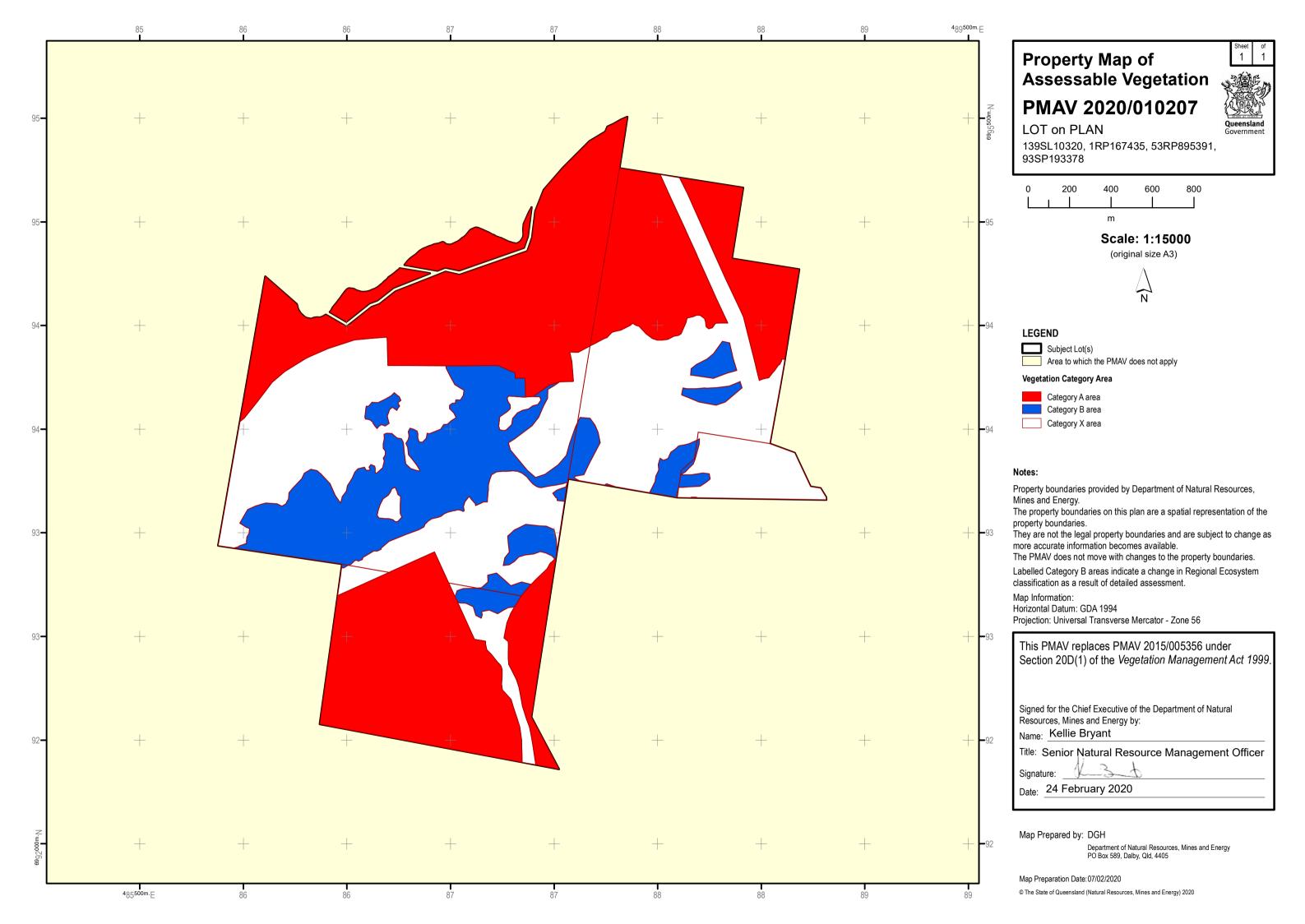
This declaration will be noted on the property titles of the declared area and is binding on current and future owners.

If you wish to discuss this matter further, please contact me on telephone number (07) 4531 8513 quoting the above reference number.

Yours sincerely

David Hinz

Natural Resource Management Officer, Vegetation Management



Appendix C

Written Notification of Commencement of Action



Amy Westman

From: Lyndon, Andrew <andrew.lyndon@boral.com.au>

Sent:Thursday, 4 June 2020 2:00 PMTo:postapproval@environment.gov.auCc:Sam Maynard; Russel Wilson

Subject: Fwd: Tree clearing

Attachments: image001.jpg; image002.jpg; EPBC Approval-notice-conditions.pdf

Attention Zoe Lee

Dear Zoe

We refer to the EPBC Act Approval for the Boral Narangba Quarry, QLD with reference number 2014/7351 (Attached).

As per condition 5 of the approval we would like to confirm that clearing commenced 12 May 2020. We were uncertain whether the 20 day notification period applied to business days or every day of the week because there is inconsistency throughout the approval and the term days or business days are not defined in the approval. We have interpreted the period to apply to business days however please contact me if you have any questions or concerns.

Kind regards

ANDREW LYNDON

Planning & Development Manager - BLPG (Qld)

Telephone: (07)38677603 Mobile: 0401893232

Email: Andrew.Lyndon@boral.com.au



Boral Land and Property Group Level 6, <u>88 Musk Ave, Kelvin Grove QLD 4059</u> www.boral.com.au



----- Forwarded message ------

From: Castle, Nicholas <nicholas.castle@boral.com.au>

Date: Thu, 4 Jun 2020 at 11:29

Subject: Tree clearing

To: Andrew Lyndon andrew.lyndon@boral.com.au

Hi Andrew,

The tree clearing commenced on the 12th May directly after nest box removal.

Nick

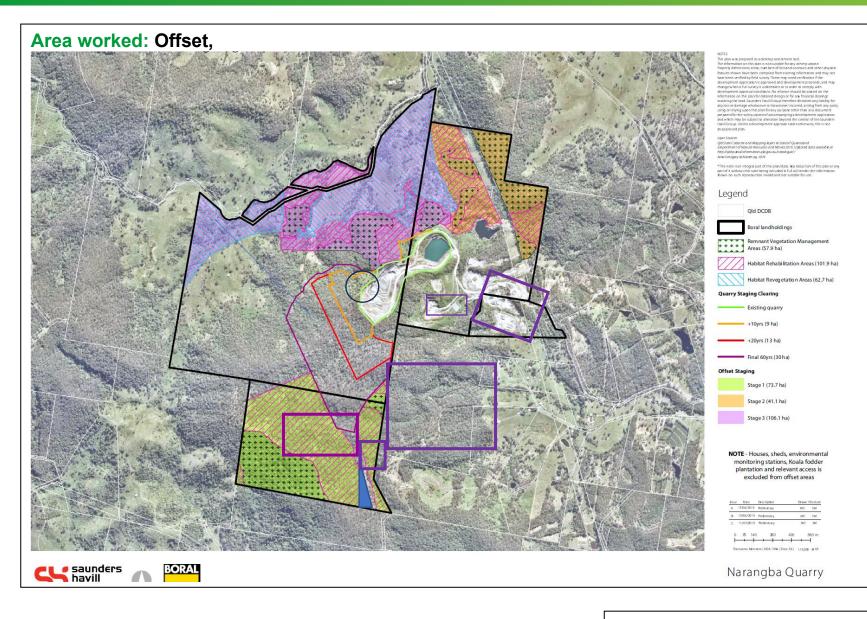
Appendix D

Contractor Reports





21/01/2020, verision 1



Summary of works complete

Month: April 2025 Report date: 5/5/2025

Number of work days completed: 208hrs 0 mins. Rained out: 5 days

| Mailiber of Work da | y 3 completed. 2001113 0 mms, Ramed Out. 5 days |
|---------------------|--|
| Area | Notes |
| Offset C | Cut Stump of Lantana and Groundsel along gully to trackside. Trial back pack spraying of large masses of lantana |
| Haul Road | Management request to high volume spray haul road from 255 down to sales |
| Green Pit | Management request to HV spray all entry and exit tracks to Green Pit |
| Graveyard | High volume spray Graveyard area |

Issues/ incidents/ comments:

- 5 days no access to offset due to rain and slippery tracks
- 2 wild dogs encountered in Offset D. 1x tan and black kelpie type and 1 x stumpy tailed red cattle dog (has been sighted on 2 previous occasions)
- Further damage to Plantation A from deer, leaves eaten off plants and guards torn apart from antlers
- Removal of trees on offset tracks previously inaccessible. **Hazard Large wash out** areas along tracks
- Clearing at top of pit with Indigenous Rangers

Next months work

- Offset C continue lantana and groundsel removal
- Re-establish garden at crib
- High volume spray of access tracks from Stage 2 to Moorina Rd
- Check Balloon Vine
- Check Sediment Ponds for weed control
- Reinstate fire break in Offset B

Chemicals used

Quantity Chemical Purpose used Glyphosate 1100ml Cut Stump HV & Glyphosate 10200ml Backpack spray 1530g Metsulfuron 1500ml Wetter 4600ml HV spray Dicamba

Photos







Cut stump Lantana



Damage to plantation trees from deer

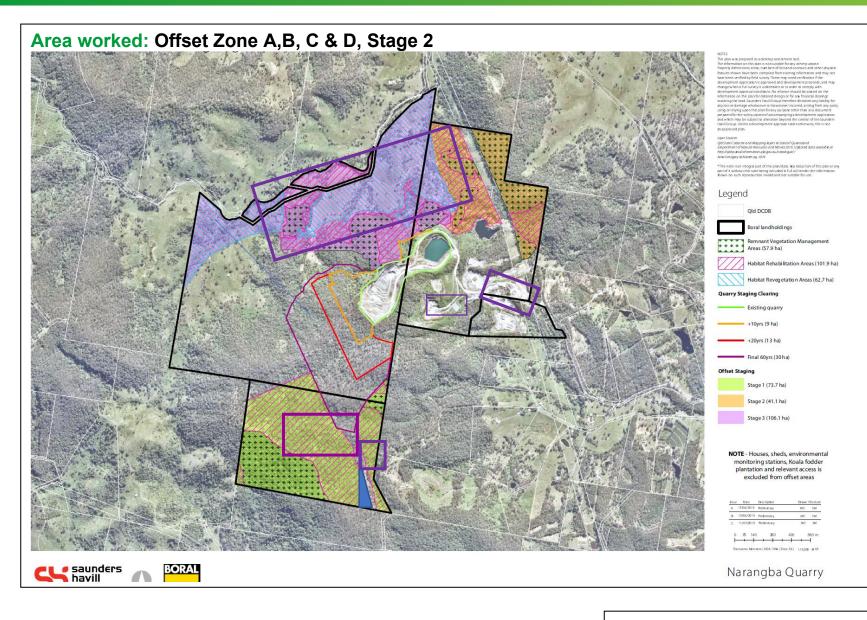




Back pack spray Crib/offices

BORAL®

21/01/2020, verision 1



Summary of works complete

Month: August 2024 Report date: 25/9/2024

Number of work days completed: 195hrs 20 mins, Rained out: 3 days

| Area | Notes |
|----------|--|
| Offset A | Cut stump along southern side of zone. Lantana and groundsel removal |
| Offset B | Brush cut plantation and reinstate fire break |
| Offset C | Boundary of zone A-C cut stump removal of lantana and groundsel in gully |
| Offset D | Removal of tree guards on selected trees in plantation |
| Entry | Back pack spray front office garden and surrounds |
| Stage 2 | High Volume spray Moorina Rd paddock gates, around dust monitors and all Zone J Tracks |

Issues/ incidents/ comments:

- Ongoing rain events prevented some works to be completed and reduced hours this month.
- Offset B evidence of cattle being in area
- Management request to herd pest cattle off haul road and out of working areas
- HAZZARD- Cattle in Active quarry pit and throughout quarry

Next months work

- Offset B &C continue lantana and groundsel removal
- Offset B spray fire break once dry enough
- High volume spray of access tracks from Stage 2 Pig track to Side Entry

Chemicals used

Chemical usedQuanityPurposeGlyphosate2100mlCut StumpGlyphosate8500mlHV & Backpack sprayMetsulfuron45132.5ggWetter1500ml

Photos

Brush cut Plantation B and Fire Break Removal of guards Plantation D Lantana die back from Fire Groundsel flushing after fire



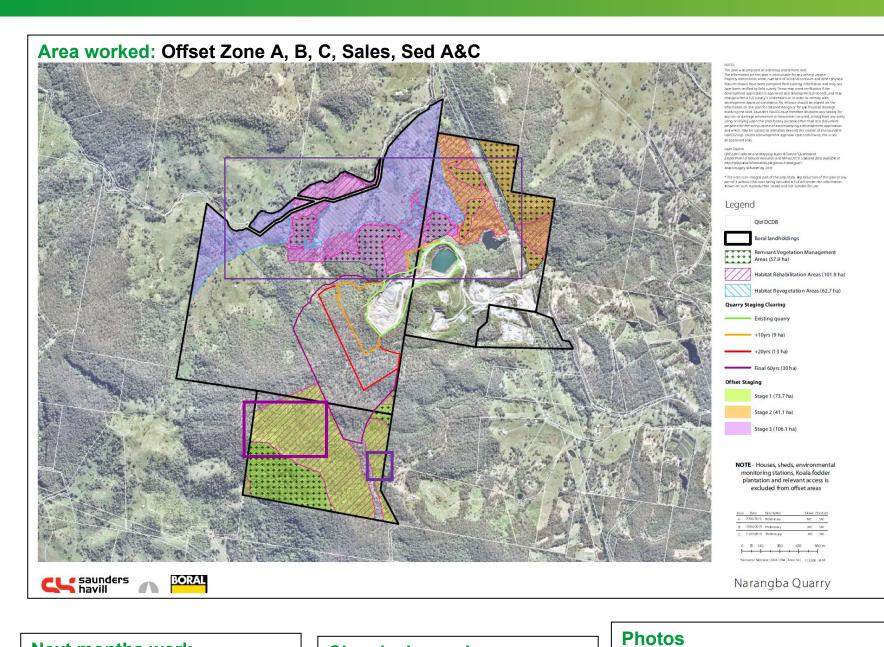






BORAL®

21/01/2020, verision 1



Summary of works complete

Month: December 2024

Report date: 21/12/2024

Number of work days completed: 95hrs 30 mins, Rained out: 5 days

| Area | Notes |
|--------------|--|
| Plantation A | Brush cut circles around plants and back pack spray |
| Offset C | Cut stump in gully |
| Plantation D | Back pack spray weed regrowth |
| Offset B | High Volume spray tracks |
| Stage 2 | High volume spray tracks from Dam, crack house, j paddock, moorina road gates and part dairy track |

Issues/ incidents/ comments:

- Wild Dog caught on trail camera 6.25pm Offset D
- Mark out clearing for fire break reinstalment for cultural burn. Koala sighted in tree on clearing boundary. Checked next morning, it had moved on
- Stage 2 Tracks unable to be sprayed for clearance due to hazardous nature. Wash outs from previous ran and cattle damage
- HAZARD- Cattle in OFFSET AREAS, Active quarry pit and throughout quarry

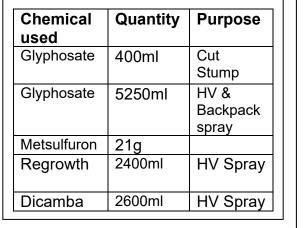
Next months work

- Offset A &C continue lantana and groundsel removal
- Stage 2 tracks needing repair
- Recon works needed after Christmas shut down. Make new plan for rehab works in 2025, requesting weed mapping by Saunders Havill

Chemicals used

High Volume Spray Stage 2 tracks and gates

Bush cut and BP spry Plantation A BP spray Plantation D Cut stump lantana in Gully







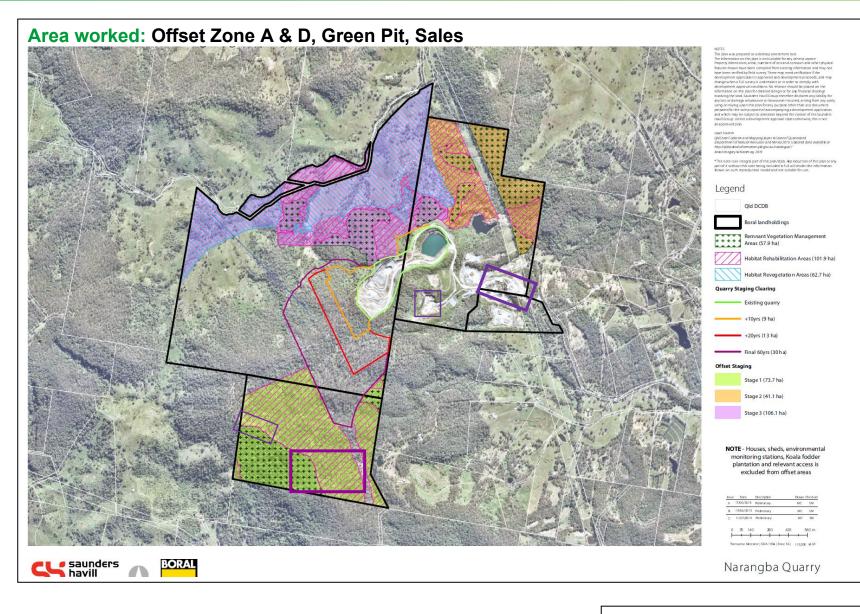






BORAL®

21/01/2020, verision 1



Summary of works complete

Month: February 2025

Report date: 28/02/2025

Number of work days completed: 193hrs 0 mins, Rained out: 0hrs

| Area | Notes |
|-----------|--|
| Offset D | Backpack spot spray Plantation |
| Offset C | Manual and cut stump removal of lantana and groundsel along and into gully. Back pack spray large mass lantana |
| Green Pit | High volume spray observation deck and track. Balloon Vine discovered |
| Sales | Backpack spray behind HME parking and staff carpark and cribb |

Issues/ incidents/ comments:

- Rain events making access difficult
- Offset D still requiring spot spraying regularly, Castor oil seedlings controlled as observe.
- Offset C trial backpack spray of large bushes of lantana
- New weed species located in green pit, Balloon Vine- restricted invasive, category 3.
 High Volume sprayed where possible, further maintenance required until eradicated.
- Stage 2 tracks from the side dam out to Moorina Road needs urgent repair for safety of vehicles and staff. Slashing and high-volume spraying required throughout stage 2, Moorina Rd and dairy storage shed.

Next months work

- Offset C continue lantana and groundsel removal
- Offset B spray fire break once dry enough
- High volume spray of access tracks from Stage 2 to Moorina Rd
- Slashing Zone J
- Balloon Vine checked and maintained

Chemicals used

Chemical Quanity **Purpose** used Glyphosate 4300ml Cut Stump Glyphosate HV & 4400ml Backpack spray Metsulfuron 37.5g Wetter 0ml

Photos

HV Green Pit observation deck Balloon Vine Zone C groundsel & lantana, Zone C Lantana removal Plantation D spot spray





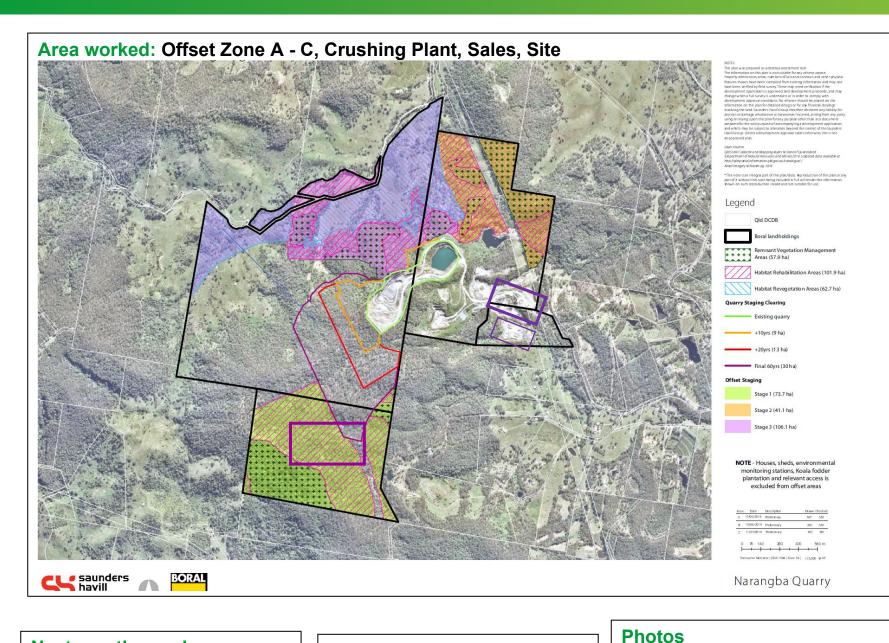






BORAL®

21/01/2020, verision 1



Summary of works complete

Month: January 2025 Report date: 03/02/2025

Number of work days completed: 186hrs 0 mins, Rained out: 0hrs

| Number of work days completed. Toom's Unims, Ramed out. Units | | |
|---|---|--|
| Area | Notes | |
| Offset A | Brush cut circles around trees in blady grass areas in Plantation A. Brush cut large areas of Seteria Backpack spray circles around trees for weed growth | |
| Offset B | Brush cut Plantation | |
| Offset C | Manual and cut stump removal of lantana and groundsel along and into gully | |
| Sales | High volume spray Browns Creek Entry, Mechanic workshop, blending plant and sales corner Brush cut sales bund walls | |
| Entry/Office/Cribb | Brush cut front entry garden and gate. Back pack spray office/cribb/garden/workshop/crushing plant | |
| Crushing Plant | Management request to spray and around plant & control room, removal of vegetation around stairs | |

Issues/ incidents/ comments:

- Rain events prevented some works to be completed and reduced hours this month.
- Offset A Plantation watering
- New weed species located in control room area/weighbridge off ramp
- 235 trees in Plantation A have perished
- 23/1/25 Cultural survey burn undertaken outside of offset area around pit

Next months work

- Offset C continue lantana and groundsel removal
- Offset B spray fire break once dry enough
- High volume spray of access tracks from Stage 2 to Moorina Rd
- Slashing Zone J
- Count nest box's that need to be replaced/moved

Chemicals used

Quanity

2400ml

2900ml

13.5g

1000ml

Purpose

Cut

Stump

Backpack

HV &

spray

Chemical

Glyphosate

Glyphosate

Metsulfuron

Wetter

used

i ree removai crusner pi

Tree removal crusher plant Noojoora Burr found

Plantation A before and after brush cutting

Plantation B brush cut

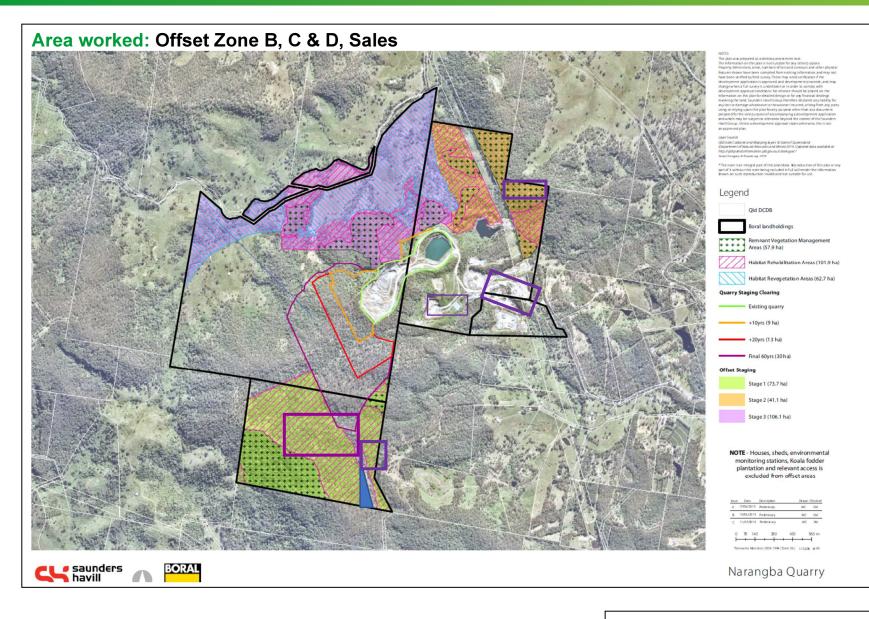












Summary of works complete

Month: July 2024 Report date: 08/7/2024

Number of work days completed: 199hrs 30 mins. Rained out: 16hrs

| | , |
|-------------------------|---|
| Area | Notes |
| Offset A | Flagging taped perimeter of Plantation A as exclusion zone in preparation of planned burn |
| Offset B | Manual and cut stump removal of lantana regrowth and groundsel. Long grass making cut stump difficult |
| Offset C | Manual and cut stump removal of lantana and groundsel along and into gully |
| Offset D | Set up exclusion zone for rare corky cucumber vine in preparation for planned burn |
| Entry | Trim lomandra and grevillea for weighbridge operation |
| Workshop/Crushing plant | Macaranga's cut down near stairs of crushing plant. Mechanical removal of umbrella plant bush and palms along walkway. Chainsaw and mechanical removal of large gum species on Sales floor ramps and workshop walkway |

Issues/ incidents/ comments:

- Ongoing rain events prevented some works to be completed and reduced hours this
- Offset D- Backpack sprayed for weed regrowth, rare corky cucumber tagged and fenced off in preparation for planned burn.
- Management request to herd pest cattle off haul road and out of working areas Planned burn carried out July 22nd, Offset A zone only. Zone D-reh still waiting for permit.

Next months work

- Offset B &C continue lantana and groundsel removal
- Offset B spray fire break once dry enough
- High volume spray of access tracks from Stage 2 to Moorina

Chemicals used

Chemical Quanity Purpose used Glyphosate 1100ml Cut Stump 4300ml HV & Glyphosate Backpack spray Metsulfuron 45g 0ml Wetter

Photos

Tree removal crusher plant Backpack spray D Trim shrubs for licence plates HV spray for burn buffer Exclusion zone for burn





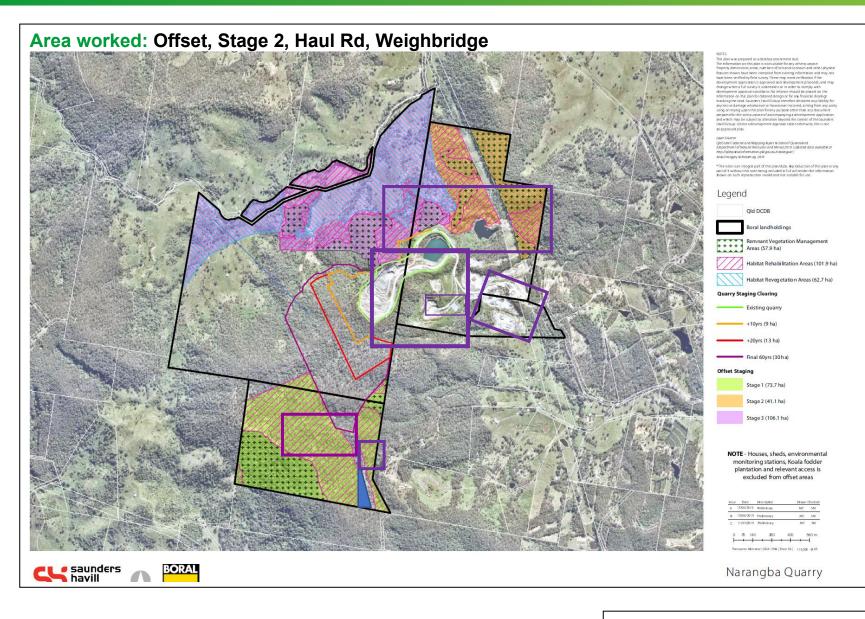






BORAL®

21/01/2020, verision 1



Summary of works complete

Month: March 2025 Report date: 12/3/2025

Number of work days completed: 120hrs 0 mins, Rained out: 5 days

| Area | Notes |
|-------------|--|
| Crib Garden | Prune trees with pole saw in preparation for new water tank pad |
| Offset | Removal of fallen trees and branches on tracks throughout offset area |
| Stage 2 | Removal of trees off all tracks from sales out to Moorina Rd |
| Haul Road | Management request to high volume spray haul road from 255 down to sales |
| Weighbridge | Management request to trim trees along weighbridge down to sales floor |
| Wash Bay | High volume sprayed around tanks at wash bay |
| Graveyard | High volume spray tracks to Graveyard |

Issues/ incidents/ comments:

- 3 days of closure for all quarries in SEQ due to Cyclone Alfred. Subsequent 6 days of contractor lock out from site doe to no power and WHS reasons
- Damage to plantations from Cyclone, trees and guards lost. Fallen trees and branches on tracks
- Check die off from high volume spray in Green Pit , Ballon Vine will require continual observation and control

Next months work

- Offset C continue lantana and groundsel removal
- Re-establish garden at crib room
- High volume spray of access tracks from Stage 2 to Moorina Rd

Chemicals used

Chemical Quanity **Purpose** used Glyphosate 0ml Cut Stump HV & Glyphosate 4000ml Backpack spray Metsulfuron 50g Wetter 0ml 1250ml HV spray Dicamba

Photos

Tree removal tracks Pruning for tank pad







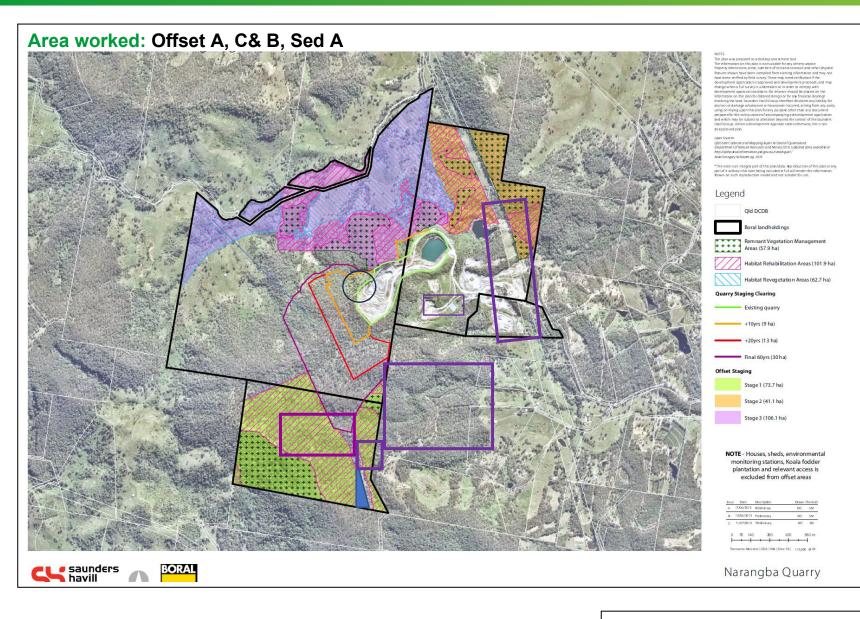




Haul Road HV spray and Green Pit Tracks HV spray Wash Bay

BORAL®

21/01/2020, verision 1



Summary of works complete

Month: May 2025

Report date: 10/6/2025

Number of work days completed: 123hrs 15 mins, Rained out: 0 days

| Area | Notes |
|-------------------|---|
| Offset C | Cut Stump of Lantana and Groundsel along gully to trackside. |
| Offset B | Brush cut Plantation and reinstate fire break |
| Offset A | Brush cut circles around trees in plantation to keep clear from competition |
| Sediment A | High Volume spray sediment A, drains, tracks |
| Bottom Dam | High volume spray dam area and pipeline |
| Crib/Office | Back pack spray around crib and office/weighbridge |

Issues/ incidents/ comments:

- Trees fallen on fire break requiring removal
- HV spray around dust monitor past sediment dam
- Clearing campaign started at 225 with Indigenous Rangers
- New Planting area sourced in Offset C
- Brush cut circles around trees in Plantation A to keep clear, also cut large clumps of setaria grass to stop seeding

Next months work

- Offset C continue lantana and groundsel removal
- Re-establish garden at crib room
- High volume spray of access tracks from Stage 2 to Moorina Rd
- Quote for 100 new tree plantations
- Spray circles around plantation A trees

Chemicals used

| Chemical used | Quantity | Purpose |
|---------------|----------|---------------------------|
| Glyphosate | 200ml | Cut Stump |
| Glyphosate | 6200ml | HV & Backpack spray |
| Metsulfuron | 93g | |
| Wetter | 1000ml | |
| Dicamba | 3200ml | HV spray |
| | | |

Photos



Brush cut Plantation B



Reinstall Fire Break in Zone B Back pack spray garden

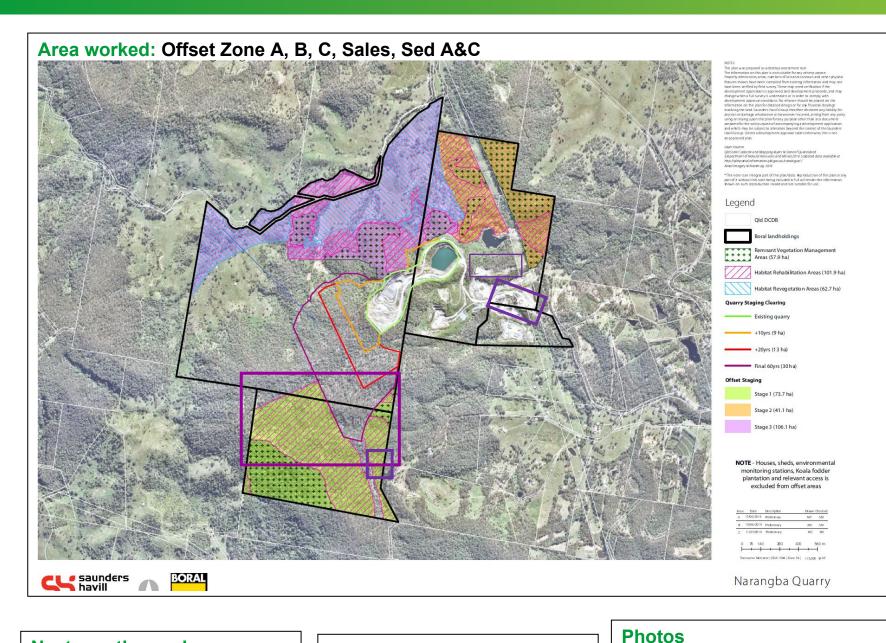




Brush cut Plantation A



Clearing Pit bench



Summary of works complete

Month: November 2024

Report date: 2/12/2024

Number of work days completed: 144hrs 10 mins. Rained out: 0 days

| Area | Notes |
|--------------|--|
| Offset A | Cut stump Lantana and groundsel removal hillside. Plantation watering carried every two days or as required High volume spray tracks from entry 255 to A/C boundary and loop |
| Plantation B | Brush cut Plantation, quick regrowth of grass due to rain |
| Entry | Brush cut front triangle garden, entry and gates |
| Sales | Brush cut sales floor |
| Sediment A | Management Request- brush cut Sed A near floats and backpack spray High Volume spray drain way and surrounding tracks |
| Sediment C | Management Request- High volume spray Sed C spillway |

Issues/ incidents/ comments:

- Management Request- Sed basin A followed up brush cutting with back pack spray of papyrus weed after brush cutting
- Civilian sleeping in car at side access lane to quarry, moved on once we started works in
- Stage 2 Tracks unable to be sprayed for clearance due to hazardous nature. Wash outs from previous ran and cattle damage
- HAZARD- Cattle in OFFSET AREAS, Active quarry pit and throughout quarry

Next months work

- Offset A &C continue lantana and groundsel removal
- Continue high volume spraying offset tracks when access is dry
- Stage 2 tracks needing repair
- Start recon works for Christmas shut down

Chemicals used

Quanity

500ml

6400ml

1000ml

4200ml

92g

Purpose

Cut

Stump

Backpack spray

HV Spray

HV Spray

HV &

Chemical

Glyphosate

Glyphosate

Metsulfuron

Wetter

Dicamba

used





Brush cut sales floor



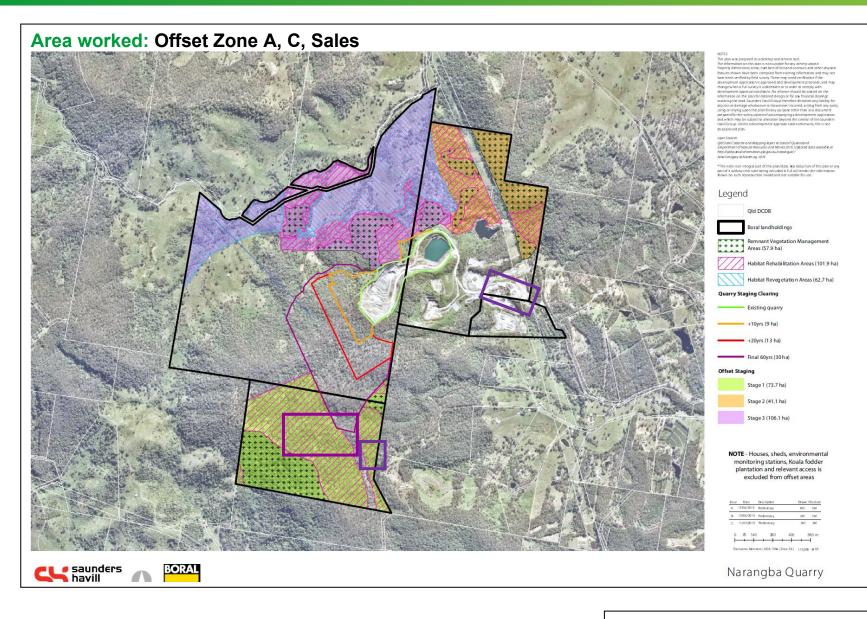


Sediment C HV spray over flow spillway & surround

Sediment A brush cut around floats and spray out

BORAL®

21/01/2020, verision 1



Summary of works complete

Month: October 2024 Report date: 12/11/2024

Number of work days completed: 188hrs 30 mins, Rained out: 2 days

| Area | Notes |
|--------------|---|
| Offset A | Cut stump Lantana and groundsel removal hillside. Plantation watering carried every two days or as required |
| Plantation D | Backpack spray weed regrowth |
| Sales | Management request- tree growing out of Primary Hill, Cut stump and poison. Tree fallen on track from side gate to dam, requested chainsaw removal |
| Offset C | 4 deer caught on trail camera. 2 males, 2 female |

Issues/ incidents/ comments:

- Tracks slippery after rain in offset, can't access all areas
- Cattle and Deer destroying Plantation A. Eating trees, pulling them out of the ground, snapping stakes, damaging guards.
- Watering from Blue Pit Dam
- HAZARD- Cattle in OFFSET AREAS, Active quarry pit and throughout quarry

Next months work

- Offset A &C continue lantana and groundsel removal
- Offset B spray fire break once dry enough
- Discuss solution for deer and cattle
- Watering Plantation A, keep record of losses due to predation

Chemicals used

Chemical Quanity **Purpose** used 2400ml Glyphosate Cut Stump HV & Glyphosate 200ml Backpack spray Metsulfuron 3g Wetter 0ml

Photos

Deer in Offset Destroyed trees & guards



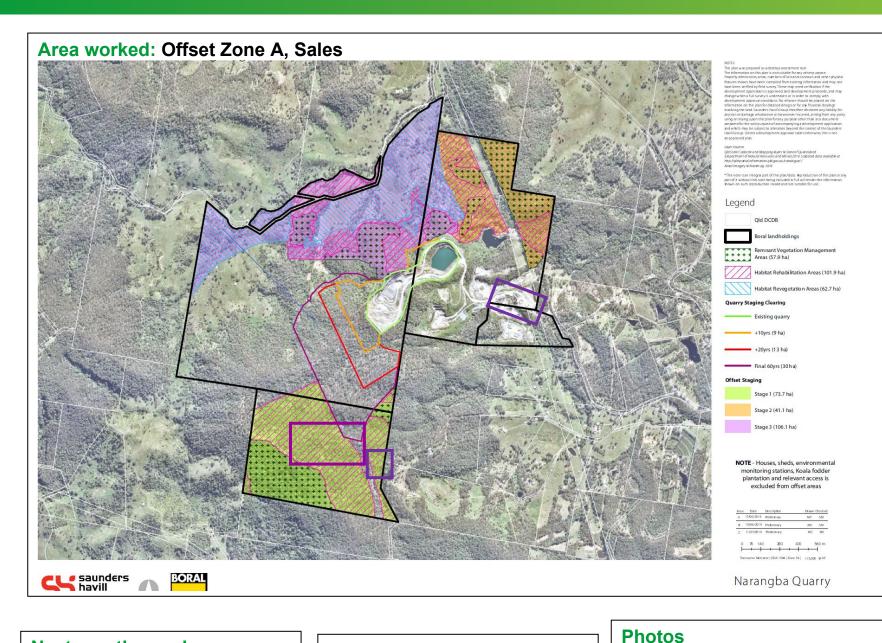


Fallen tree on tracks





Cut stump lantana



Summary of works complete

Month: September 2024

Report date: 5/10/2024

Number of work days completed: 107hrs 15 mins. Rained out: 0 days

| Area | Notes |
|----------|--|
| Offset A | Cut stump along southern side of zone. Lantana and groundsel removal along gully. Installation of new plantation, watering carried every two days or as required |
| Sales | Management request- back pack spray around pug mill and wash bay tanks for snake hazard Back pack spray around crib and office & gardens |

Issues/ incidents/ comments:

- 500 trees planted in A Zone of Offset
- Cattle destroying Plantation A. Eating trees, pulling them out of the ground, snapping stakes, damaging guards.
- Watering from Blue Pit Dam
- HAZARD- Cattle in OFFSET AREAS, Active quarry pit and throughout quarry

Next months work

- Offset A &C continue lantana and groundsel removal
- Offset B spray fire break once dry enough
- Trail camera installed for cattle in offset
- Watering Plantation A, keep record of losses due to predation

Chemicals used

Chemical

Glyphosate

Glyphosate

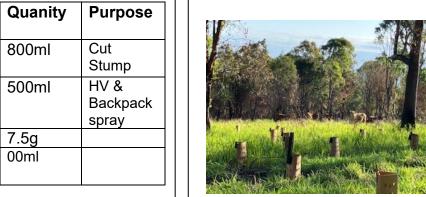
Wetter

Metsulfuron 7.5g

00ml

used

Cattle in Plantation A, eating and destroying newly installed plants Requested spray around tanks to keep clear









LEADING THE WAY IN ENVIRONMENTAL MANAGEMENT



Contents

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Document Control Page

Version Control

| Version | Purpose | Author | Reviewed / approved by | Date |
|---------|---------|----------------|------------------------|------------|
| 0.1 | Draft | Jessica Hobart | Tiffany Sieuwerts | 11/06/2024 |
| 1.0 | Final | Jessica Hobart | Tiffany Sieuwerts | 1/07/2024 |
| 2.0 | Final | Jessica Hobart | Tiffany Sieuwerts | 10/07/2024 |

Distribution Control

| | Purpose | | | Date |
|-----|---------|-------|---------------|------------|
| 1.0 | Final | Boral | Matthew Allan | 10/07/2024 |
| 2.0 | Final | Boral | Matthew Allan | 10/07/2024 |

Project Number: BSQ6312

Our Document Reference: BSQ6312-Boral-NarangbaFeralAnimalManagementProgram-Rev2.0

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1. Introduction

Biodiversity Australia Pty Ltd (Bio Aus) was contracted by Boral to conduct Vertebrate Pest Management at Narangba Quarry. Biodiversity Australia was engaged to assess and manage wild dogs (*Canis lupus familiaris*) within the site. As such, a monitoring and control program was undertaken during which, the management of wild dogs was the focus of feral animal control. The report contains the methodology and results of these survey and control works. This report also contains valuable post-monitoring results that will inform management strategies during future feral animal programs.

1.1 Objectives

The objectives of the project were to:

- Establish the approximate size of the feral canid populations within Narangba Quarry;
- Reduce the number of feral canids within Narangba Quarry through trapping and humane euthanasia; and
- Provide data-based recommendations for future pest animal management at Narangba Quarry.

1.2 Site Location and Description

The Narangba Quarry is located on Raynbird Road, Narangba, 37km north of Brisbane and northwest of the Narangba Township (Figure 1). Boral's landholdings cover an area of 469.8 hectares. Approximately 50ha are occupied by quarry operations and 420ha are buffer land. The site is surrounded by state forest, with established and under construction housing estates to the east. Agricultural properties lie to the south-east. Management efforts were focused within areas stipulated within *Vertebrate Pest Management Plan* (2020).

The site itself is predominantly open eucalypt woodland and open forests. The subject site is dominated by Northern Grey Ironbark (*Eucalyptus siderophloia*) and Grey Gum (*Eucalyptus propinqua*) within the canopy. Other species present include Tallowwood (*Eucalyptus microcorys*), Brush Box (*Lophostemon confertus*) and Forest Red Gum (*Eucalyptus tereticornis*).

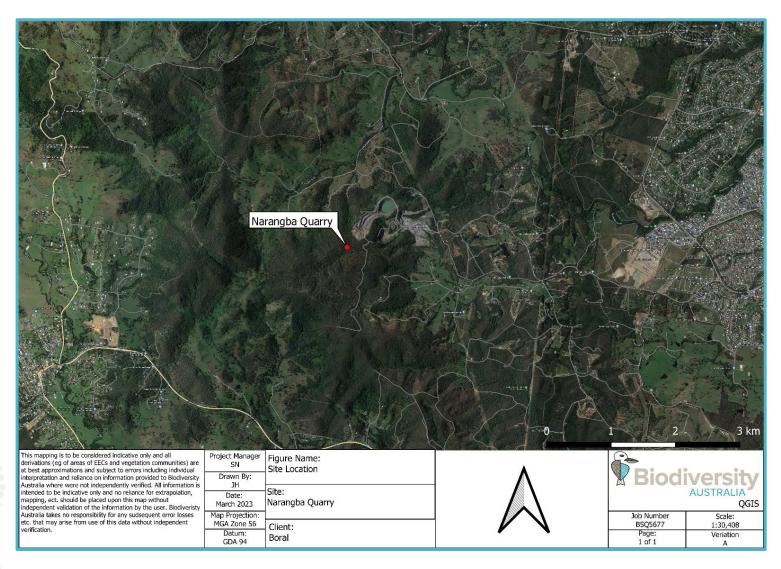


Figure 1: Site Location

1.3 Target Species

1.3.1 Wild dog (*Canis lupus familiaris*)

The term wild dog encapsulates any wild-living dogs including dingoes, feral dogs and hybrids. Dingoes were initially brought to Australia by Asian seafarers, approximately 4000 years ago (Glen et al., 2007). Domestic dogs then arrived in Australia as domestic pets of European settlers. It was from here that domestic dogs escaped to or were released into the wild. It is not possible to distinguish between pure dingoes and hybrids purely by colour or appearance. To determine this, DNA tests can be conducted using hair follicles or the ear tips of humanely killed wild dogs.

Wild dogs cause significant damage to the agricultural industry through their predation on livestock and are a restricted invasive animal under the *Biosecurity Act 2014*. They preferentially feed on small and medium-sized mammals, including native mice, dunnarts, bandicoots and wallabies, but they will prey upon a variety of native and exotic animals, including insects, kangaroos and livestock. They are implicated in the decline of several native species. As opportunistic feeders they may also enter sites where human activity has made food easily available, such as rubbish disposal areas.

Control methods for wild dogs include baiting, trapping, exclusion fencing, shooting and the use of guard animals. Donkeys and alpacas are often used to ward off wild dogs on cattle or sheep farms.

2. Methodology

All trapping methodologies followed the standards set out in the Standard Operating Procedure, as produced by Pest Smart – Invasive Animals CRC (Sharp, 2012). All Narangba Quarry standard protocols were followed and adhered to throughout the control period. Biodiversity Australia ensured to check in with Narangba Quarry staff upon arrival each day throughout the management period and as required whilst moving through gates as outlined by Narangba Quarry in their protocols.

2.1 Pre-Trapping Monitoring Period

Sixteen consecutive days of pest animal monitoring with remote surveillance cameras was undertaken with the aim of identifying wild dog travel routes. Nine pre-approved locations were utilised, as stipulated within the *Vertebrate Pest Management Plan* (2020).

Passive infrared (PIR) camera traps were installed in selected areas, mapped using a GIS system, and given a unique identifier (Figure 2). They were installed on Thursday 18th of April 2024 and left in place for sixteen days until the 3rd May 2024. Camera outputs were formally assessed at the end of the monitoring period, and the following data collected:

- Species;
- Number of animals seen;
- Sex of animals (where this could be determined);
- Direction of travel and activity observed;
- Camera trap number; and
- Time of day.

2.2 Trapping Period

A canid trapping program was conducted over a thirteen-day period at Narangba Quarry. This occurred two weeks after the camera trapping period due to wet weather. Traps were installed in selected areas and mapped using a GIS system (Figure 3).

Traps were set on the Friday 24th of May 2024 and collected on Wednesday 5th of June 2024. During this time, Biodiversity Australia assessed the traps on a daily basis and serviced them when required.

Because weather conditions play a considerable role in the success of dog trapping programs, record of the weather conditions, humidity, temperature, and wind speed and direction were recorded each day Biodiversity Australia attended site (Appendix A).

Wild canids often traverse well defined paths along topographic features, and it is expected that wild dogs and foxes will frequent established paths on a regular basis for the ease of travel these provide. Scent lures were placed with traps near these paths to attract wild canids. The interaction between the placement of traps/lures and the direction of wind was given careful consideration in order to ensure that scents of lures were blown across expected wild dog travel routes.

The following data was collected for all pest animals captured:

- Species;
- Sex;
- Date of capture;

- Location, including GPS coordinates of capture location;
- Trap type;
- Method of euthanasia; and
- Pictures of animals prior to and post euthanasia.

2.2.1 Trap preparation

Before use, traps were cleaned and treated with a tannin and wax solution to remove any scent and to give the traps a protective coating of wax. At this point, each individual trap was tested to ensure that all parts were accounted for, intact, and functioning properly.

2.2.2 Soft jaw trap installation

As per the National Standard Operating Procedure for wild dogs (NATSOP-DOG001) (Appendix 2), soft jaw traps (SJT) were utilised within the management program. Soft jaw (SJ) traps were strategically placed, in order to minimise the exposure of trapped individuals to harsh conditions such as direct sunlight. Once traps were positioned in a shallow hole in the ground, the trap was then anchored and set. The Biodiversity Australia team member ensured that surrounding debris did not interfere with the spring mechanism.

A lure or attractant was placed in a location of high canid activity, aiming to provoke an investigation. The trap was placed at a pre-determined distance and bearing from the lure in the expectation that the target animal would step in that spot resulting in a capture. A mixture of artificial and natural lures were used.

2.2.3 Trap monitoring

Each trap was checked every morning for animal welfare purposes. Throughout the process additional baits/scent lures were laid in or around traps as was deemed necessary by Biodiversity Australia staff.

2.2.4 Euthanasia

The appropriate firearm and ammunition were used to ensure an instant lethal shot. For a wild dog a smaller calibre rifle such as a .22 rimfire or .22 magnum rimfire with hollow/soft point ammunition is recommended. Each shot was taken at a safe distance once the animals were settled and still.

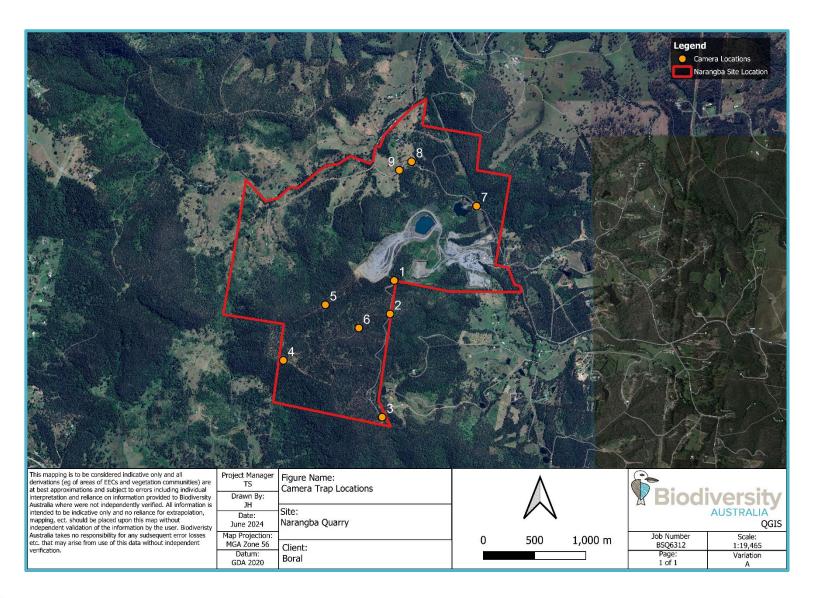


Figure 2: Camera Trap Location

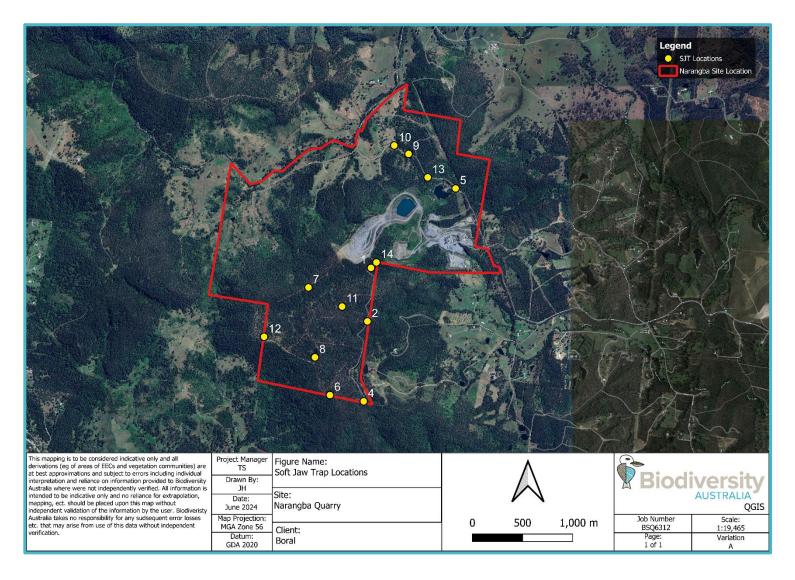


Figure 3: Soft Jaw Trap Locations

2.2.5 Bycatch

The below procedures were followed when a non-target species was caught in the SJT traps.

- Native injured: Transport to a local carer or Wildcare;
- Native not injured: Release;
- Domestic Pet injured/non-injured: Transport to local vet; and
- Pest/Non-native: Humanely euthanise.

2.2.6 Analysis

The interaction between the placement of traps and the direction of the wind was given careful consideration to ensure expected wild dog travel routes were given adequate exposure to the scents of lures accompanying traps. For example, if a trap was positioned to the western side of an expected dog travel route, wind blowing in an eastwardly direction would expose the scent of the lure to the travel route. As such, all days wind was blowing in an eastward wind direction would be considered when calculating the percentage of management days the scent of the trap was exposed to dog travel routes. Weather data for the duration of the trapping period is contained in Appendix A.

In order to calculate the percentage of management days that lures were exposed to dog travel routes, the percentage of management days that wind blew in each direction (north, south, east, west etc.) was calculated (Figure 3). The number of days that each lure's scent was blown towards paths was then calculated.

3. Results

3.1 Pre-Works Monitoring

PIR camera monitoring at Narangba captured several images of wild dogs, over several camera locations (Photo Plate 1 & 2). Non-target feral species were also observed within the monitoring event including cattle, Red Fox, feral pigs, European Hares, and Red Deer. Figure 4 depicts the fauna caught within each camera trap location.

It was not possible to determine the sex of all the individual feral species observed. Most individuals observed were adults, with some juveniles also observed.

A total of four (4) wild dogs were photographed. These were captured on CT 1, 2, 3, 4, 8 & 9. All dogs photographed were adults. Individuals were able to be deciphered due to unique markings that were observed (Photo Plate 1& 2). Photo Plates 3-7 depict other feral animals observed.

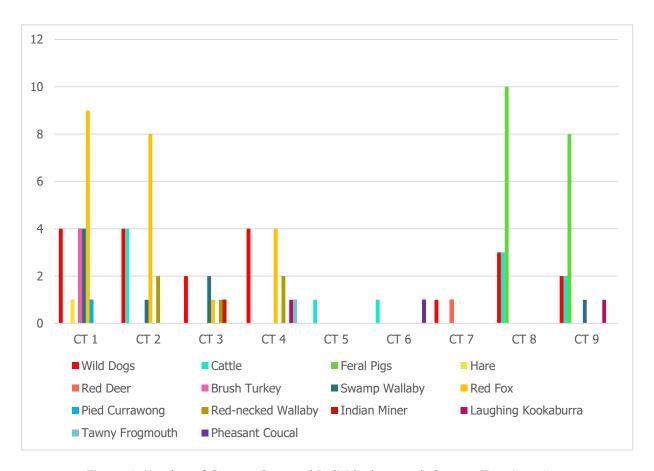


Figure 4: Number of Camera Captured Individuals at each Camera Trap Location



Photo Plate 1: Wild Dogs caught on CT4



Photo Plate 2: Wild Dogs caught on CT3



Photo Plate 3: Wild Pig Group Caught on CT8



Photo Plate 4: Red Fox Caught on CT1

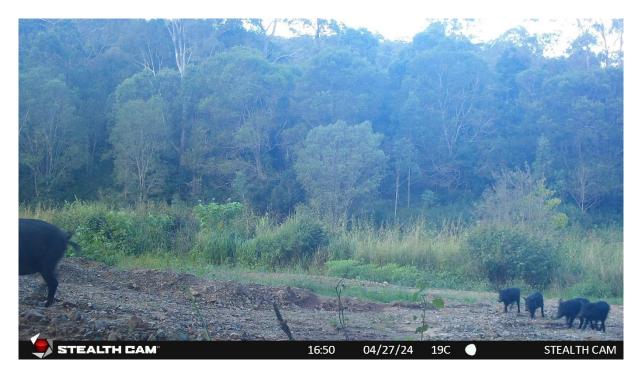


Photo Plate 5: Feral Pig Caught on CT8



Photo Plate 6: Hare Caught on CT1



Photo Plate 7: Red Deer Caught on CT7

3.1.1 Opportunistic Sightings

Opportunistic sightings are included within this report to provide information on the types and species of animals that have the potential to cross property boundaries.

Table 1 summarises opportunistic sightings at Narangba Quarry during this period.

Table 1: Opportunistic sightings across the management period at Narangba Quarry.

| Species Common Name | Scientific Name | Status |
|---------------------|-----------------------|----------------|
| Brush Turkey | Alectura lathami | Native |
| Domestic Cow | Bos taurus | Domestic/Feral |
| Red-necked Wallaby | Macropus parryi | Native |
| Swamp Wallaby | Wallabia bicolor | Native |
| Pied Currawong | Strepera graculina | Native |
| Indian Miner | Acridotheres tristis | Native |
| Pheasant Coucal | Centropus phasianinus | Native |
| Tawny Frogmouth | Podargus strigoides | Native |
| Laughing Kookaburra | Dacelo novaeguineae | Native |
| Red Fox | Vulpes vulpes | Feral |
| Red Deer | Cervus elaphus | Feral |
| Feral Pig | Sus scrofa | Feral |
| European Hare | Lepus europaeus | Feral |

3.1.2 Calculated Relevant Abundance Frequency

Calculated Relevant Abundance is provided within this report to give insight into the wild dog abundance onsite, compared to the other species abundance that was found throughout the monitoring period.

The calculated relative abundance is calculated by dividing the total number of a species caught on camera, by the total number of monitoring points over the thirteen-day monitoring period. Table 2 summaries the calculated relevant abundance of the target species caught on camera onsite.

Table 2: Opportunistic sightings across the management period at Narangba Quarry.

| Species | Total Number Recorded | Number of Monitoring Points | Calculated Relative Abundance | Calculated Relative Abundance (%) |
|---------------|--------------------------|--------------------------------|-------------------------------------|---|
| Wild Dog | 4 | 117 | 0.03 | 3 |
| Red Fox | 9 | 117 | 0.08 | 8 |
| Feral Pig | 18 | 117 | 0.15 | 15 |
| European hare | 1 | 117 | 0.009 | 0.9 |
| Red Deer | 1 | 117 | 0.009 | 0.9 |

3.2 Trapping

Canid trapping activities resulted in the capture and euthanasia of two Red Fox individuals.

Table 2 summarises the captures.

Other observations of note while the traps were in place included:

- Trap 4 was triggered on 29th May but was found with no trapped animal and no lure present.
- Trap 8 was triggered on 30th May but was found with no trapped animal and no lure present
- Trap 1 and 4 was triggered several times by cattle movements within the area.

Trap 9 had bait eaten by mice on 17th March.

Table 3: Summary of individuals caught in traps, including target and "other" species.

| Date of capture | Trap Number | Species common name | Scientific name | Sex/Age | Count |
|-----------------|----------------|---------------------|-----------------|---------|-------|
| 04/06/2024 | 8 | Feral Fox | Vulpes vulpes | M/A | 1 |

| 05/06/2024 4 Feral Fox <i>Vulpes vulpes</i> F/A 1 |
|---|
|---|

3.2.1 Trap Exposure

Placement of traps relative to paths was given careful consideration by Biodiversity Australia to ensure that dogs would have adequate access and exposure to traps to increase efficacy of the control program. The objective was to ensure that the trap was downwind of the lure for the greatest period of time. During the trapping period the wind was moderate. On the days when the wind blew, it blew most frequently from the south-south-west, standard for the area compared to last years data. Traps situated north of a path received the least amount of exposure during the control period (23%), whereas traps situated on the southern sides of the path received the highest amount of exposure (76%) (Table 4).

Table 4: Percentage of control days that scents of lures at each trap were exposed to nearby tracks (rounded to the nearest 5%).

| Trap Number | Trap Position (relative to path) | % of Management Days Trap Scents were Exposed to Dog Traffic Areas |
|-------------|----------------------------------|--|
| 1 | SSW | 62% |
| 2 | SSW | 62% |
| 4 | SSE | 15% |
| 5 | SSE | 15% |
| 6 | SSW | 62% |
| 7 | SSE | 15% |
| 8 | WSW | 62% |
| 9 | SSW | 62% |
| 10 | SSE | 15% |
| 11 | WSW | 62% |
| 12 | SSW | 62% |
| 13 | SSW | 62% |

| 14 | WSW | | | 62% | |
|----|--|--|-----|-----|--|
| | Average exposure (% of management days): | | 48% | | |

3.2.2 Trap Disturbances

Trap disturbances can help to give an indication of animal activity in the area. Over the duration of the trapping period, there were 5 recorded trap disturbances (Table 5). None of these trap disturbances was attributed to the capture of a wild dog. Three were triggered without any animals recorded.

Table 5: Trap disturbances noted over the duration of the wild canid trapping period.

| Dates of disturbances | Trap ID | Species | Sex | Age | Result | Count |
|--------------------------|---------|---------|-----|-------|---|-------|
| 29/05/2024 | 4 | - | - | - | Trap triggered, unknown cause | - |
| 30/05/2024 | 8 | - | - | - | Trap triggered, unknown cause | - |
| 03/06/2024 | 9 | - | - | - | Trap triggered due to cattle | - |
| 04/06/2024 | 8 | Red Fox | М | Adult | Trap triggered, capture & Euthanised | 1 |
| 05/06/2024 | 4 | Red Fox | F | Adult | Trap triggered, capture & Euthanised | 1 |
| | | | | | Total captures | 2 |

4. Discussion

Camera monitoring captured images of a total of four (4) wild dogs. Opportunistic monitoring also captured European Hares, Red foxes, Feral Pigs, and a single red deer. Domestic cattle and several native wallabies and birds were also observed.

During the wild canid control period a total of two (2) red foxes (one male, one female) was captured and successfully removed from Narangba Quarry. It was noted that due to the cattle within the southern portion of the site, trapping success was decreased here due to traps being triggered. It was also noted in camera 4 observations that high level of activity (vegetation rehabilitation) was being conducted within the area. With consistent human presence within the area, this may also reduce the likelihood of pest species within the area.

Trapping success would have been majorly impacted by the abundance of prey species such as wallabies, feral piglets, deer and European hares. With these prey species frequently seen and traversing the subject site, the trapping bait would not have been as successful compared to a site with no prey available to the predators. This was predicted to have reduced the overall effectiveness of the monitoring and trapping program. It was noted that at least one of the wild dogs were observed to be underweight, while the others appeared healthy.

5. Recommendations

Biodiversity Australia's management efforts resulted in the successful capture of two (2) red foxes. The wild canid population at Narangba Quarry requires ongoing management and application of the knowledge gained throughout this program.

The following recommendations are suggested for future control works to increase success of the feral animal management program:

- Focus control events around times of peak activity or when target species are more likely to respond to lures;
- Management to occur within appropriate timeframes and during times of less frequent activity (e.g. vegetation works) within the base to minimise site disturbance and possible animal dispersal.
- Inclusion of other feral animal management programs such as pigs, foxes, deer and European hares. Biodiversity Australia has an in-depth background in feral management of all the above species.

6. References

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Sharp, T. (2012). DOG001: Trapping of wild dogs using padded-jaw traps. Pest Smart. Invasive Animals CRC. http://www.pestsmart.org.au/wp-content/uploads/2013/08/DOG001_trapping.pdf

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7. Appendix

7.1 Appendix 1 – Weather Report for Trapping Period

Weather data for the duration of the trapping period

| | Min | Max | Rainfa | | 9am | | | Зрт | ı |
|------------|-----------------|-------------|---------------------|-------|-----|-----------------------|-------|-----|-------------------|
| Date | Tem p. ⁰C | Temp. °C | II per day mm | Temp. | % | Wind Directio n | Temp. | % | Wind Direction |
| 24/05/2024 | 12.9 | 22.7 | 0 | 18.8 | 68 | SSW | 20.5 | 74 | SE |
| 25/05/2024 | 16.5 | 21.5 | 0.2 | 18 | 94 | SW | 20.5 | 76 | S |
| 26/05/2024 | 14.7 | 23.4 | 1 | 19.6 | 75 | SW | 21 | 69 | ESE |
| 27/05/2024 | 13.7 | 23.1 | 0 | 18.7 | 80 | SW | 22 | 65 | ESE |
| 28/05/2024 | 15 | 22.7 | 0 | 18.2 | 87 | SSE | 22.6 | 66 | SSW |
| 29/05/2024 | 15.8 | 23.4 | 0 | 19.9 | 71 | S | 22 | 74 | SSE |
| 30/05/2024 | 16.3 | 22.3 | 14 | 19.6 | 80 | SSW | 20.5 | 78 | SSE |
| 31/05/2024 | 15.6 | 24.4 | 0.4 | 18.4 | 94 | SSW | 23.3 | 72 | SSE |
| 1/06/2024 | 17.8 | 22.4 | 1.2 | 19.3 | 98 | N | 21.5 | 87 | N |
| 2/06/2024 | 13.6 | 22.4 | 2.4 | 16.3 | 76 | W | 21.4 | 45 | SW |
| 3/06/2024 | 11.4 | 20.7 | 0 | 16.2 | 64 | W | 20.1 | 42 | W |
| 4/06/2024 | 8.8 | 20.4 | 0 | 13.2 | 69 | W | 19.6 | 45 | NE |
| 5/06/2024 | 8.7 | 20.8 | 0 | 13.7 | 78 | SW | 19.3 | 56 | ENE |

7.2 Appendix 2 – DOG001 Soft Jaw Trapping Procedure



LEADING THE WAY
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1. Introduction

Biodiversity Australia Pty Ltd (BA) was contracted by Boral (the Client) to conduct Vertebrate Pest Management at Narangba Quarry's Offset Area (the Site, Figure 1). Biodiversity Australia was engaged to undertake these works in line with the Saunders Havill Group *Vertebrate Pest Management Plan* (VPMP) (2020). As such, a monitoring and management program was undertaken to determine the feral/pest species present within the Offset Area and decrease their population. This program is conducted on a yearly basis, with 2025 being the fourth year of works. This report also contains valuable post-monitoring results that will inform management strategies during future feral animal programs.

A total of eight (8) Passive infrared (PIR) cameras were installed within May 2025, as per the VPMP. As per the results of the PIR cameras, twelve (12) Soft Jaw Traps (SJT) were installed within June 2025 to assist in the eradication of pest species within the Site.

1.1 Objectives

For the Offset Area to remain compliant, the projects' objective is to assess five (5) target species, monitor and manage their presence and abundance within the Site. The VPMP provides a rating scale towards the pest species which rates them from low to high priority, as below:

- High Priority Feral and unwanted domestic dogs (Canis familiaris).
- Medium Priority Red Fox (Vulpes vulpes) and Feral Cat (Felis catus).
- Low Priority Red Deer (Cervus elophus) and Feral Pig (Sus scrofa).

As per the VPMP objectives, BA conducted a program which:

- Established the approximate size of the five (5) populations within the Site.
- Reduced the number of high priority species (Wild Dog) within the Site through trapping and humane euthanasia.
- Provide data-based recommendations for future pest animal management at the Site.

1.2 Site Location and Description

The Narangba Quarry is located on Raynbird Road, Narangba, 37 kilometres (km) north of Brisbane and northwest of the Narangba Township (Figure 1). Boral's landholdings cover an area of 469.8 hectares (ha). Approximately 50ha are occupied by quarry operations and 420ha are buffer land. The site is surrounded by state forest, with established and under construction housing estates to the east. Agricultural properties sit to the south-east. Management efforts were focused within areas stipulated within *Vertebrate Pest Management Plan* (2020).

The site itself is predominantly open eucalypt woodland and open forests. The subject site is dominated by Northern Grey Ironbark (*Eucalyptus siderophloia*) and Grey Gum (*Eucalyptus propinqua*) within the canopy. Other species present include Tallowwood (*Eucalyptus microcorys*), Brush Box (*Lophostemon confertus*) and Forest Red Gum (*Eucalyptus tereticornis*). The Site is consistent with the state mapping, which is displayed in Table 1.

Table 1: Regional Ecosystems Present Onsite

| RE | Description |
|-----------------------------|--|
| RE 12.11.3 (Least Concern) | Eucalyptus siderophloia, E. propinqua +/- E. microcorys, Lophostemon confertus, Corymbia intermedia, E. acmenoides open forest on metamorphics +/- interbedded volcanics |
| RE 12.11.3a (Least Concern) | Eucalyptus siderophloia, E. propinqua +/- E. microcorys, Lophostemon confertus, Corymbia intermedia, E. acmenoides open forest on metamorphics +/- interbedded volcanics |



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| RE 12.11.10 (Least Concern) | Notophyll vine forest +/- Araucaria cunninghamii on metamorphics +/- interbedded volcanics |
|---------------------------------|--|
| RE 12.11.14 (Least Concern) | Eucalyptus crebra, E. tereticornis, Corymbia intermedia woodland on metamorphics +/- interbedded volcanics |
| RE 12.11.18 (Least Concern) | Eucalyptus moluccana woodland on metamorphics +/- interbedded volcanics |
| RE 12.12.12 (Of Concern) | Eucalyptus tereticornis, Corymbia intermedia, E. crebra +/- Lophostemon suaveolens woodland on Mesozoic to Proterozoic igneous rocks |
| RE 12.12.15b (Least Concern) | Mixed open forest including combinations of <i>Eucalyptus propinqua</i> , <i>E. siderophloia</i> , <i>Corymbia intermedia</i> , <i>E. microcorys</i> , <i>Lophostemon confertus</i> open forest on Mesozoic to Proterozoic igneous rocks |
| RE 12.12.16 (Least Concern) | Notophyll vine forest on Mesozoic to Proterozoic igneous rocks |



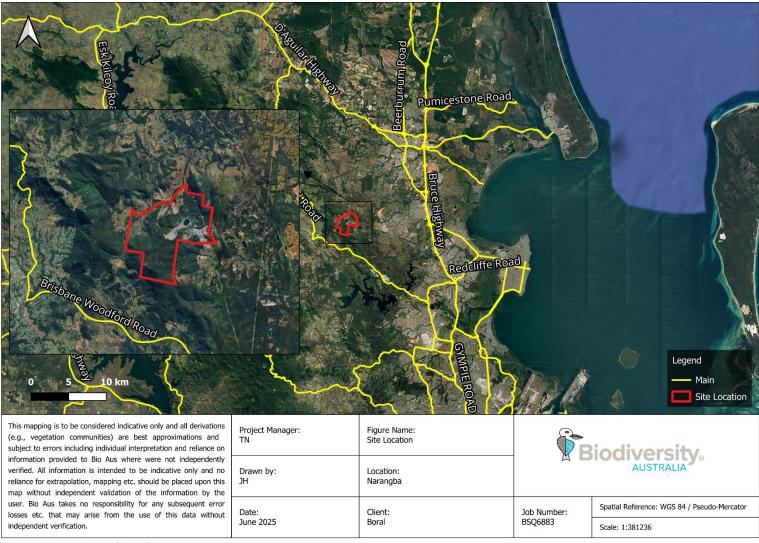


Figure 1: Location of the Site



1.3 Target Species

As per the VPMP, five (5) target species are priority within the Site, to monitor and manage presence, as detailed below.

1.3.1 High Priority

1.3.1.1 Wild & Unwanted Domestic Dog (Canis lupus familiaris)

Wild Dogs cause significant damage to the agricultural industry through their predation on livestock and are a restricted invasive animal under the *Biosecurity Act 2014*. They preferentially feed on small to medium-sized mammals, including native mice, dunnarts, bandicoots and wallabies, they will prey upon a variety of native and exotic animals, including insects, kangaroos and livestock. As opportunistic feeders they may also enter Sites where human activity has made food easily available, such as rubbish disposal areas.

Control methods for Wild Dogs include baiting, trapping, exclusion fencing, shooting, and the use of guard animals. Donkeys and alpacas are often used to ward off Wild Dogs on cattle or sheep farms.

1.3.2 Medium Priority

1.3.2.1 Red Fox (Vulpes vulpes)

Red Foxes are a category 3, 4, and 6 restricted invasive animal under the *Biosecurity Act 2014*. This pest species is primarily a carnivorous scavenger and predator, however, are also opportunistic feeders and can consume an enormous variety of animal and plant material. Foxes will consume bandicoots, antechinus, frogs, birds, insects, fruit, vegetables and grain.

Red foxes will predate upon livestock, mainly lambs and goat kids, and native animals. These pest animals are managed by erecting exclusion fencing, trapping, shooting, and poisoning.

1.3.2.2 Feral Cat (Felis catus)

Feral Cats are a category 3, 4 and 6 restricted invasive animal under the *Biosecurity Act 2014*. Feral cats are mostly nocturnal with peak hunting activity occurring at dusk and dawn. Eyeshine from this species is a distinctive green/yellow colour making it easily distinguishable from other species of this size. During the day they will take refuge within hollow logs, dense clumps of grass, piles of debris, rabbit burrows, and hollow limbs in standing trees.

Studies on the species diets show that 375 Feral Cats on Macquarie Island can consume 56, 000 European rabbits and 58, 000 sea birds per year and Legge et al (2020) state that Feral Cats are implicated in the extinction of twenty-five (25) mammal species and causing population declines in many other species including *Pezoporus occidentalis* (night parrot) and *Psephotellus pulcherrimus* (paradise parrot). Control methods for this species include exclusion fencing, trapping, shooting, and the use of lures.

1.3.3 Low Priority

1.3.3.1 Red Deer (Cervus elophus)

Red Deer are classed as restricted invasive animals under the *Biosecurity Act 2014*. Introduced in the nineteenth century, Red Deer were originally released near Esk, but are now found throughout Queensland, New South Wales, Victoria and South Australia. This species has a three-fold impact, being Environmental, Economic and Social.

Red Deer cause devastating damage to the natural environment, by overgrazing native vegetation, damaging trees (e.g. ringbarking), and spreading weeds. They cause economic damage to forestry, agricultural and horticultural systems, by overgrazing and competing for pasture with cattle, and damaging irrigation and



fencing. They are also known to pose risk to humans, during rutting season, and being a traffic hazard in suburban areas.

Control methods for Red Deer include shooting, trapping and exclusion fencing.

1.3.3.2 Feral Pig (Sus scrofa)

Feral Pigs are a category 3, 4 and 6 restricted invasive animal under the *Biosecurity Act 2014*. This species is found throughout all habitats in Queensland with greatest concentrations around drainage basins and swamp areas of the coast and inland. During hot weather they will stay near water sources. Evidence of feral pigs include fresh diggings or rooting of the ground, tracks and faeces, mud or hair at holes in fences, wallows, tusk marks, and mud rubs on trees and nests in vegetation made by sows.

Feral pigs damage crops from sowing to harvest by uprooting seed and seedlings to feeding on or trampling mature crops. They feed on seed, sugar cane, grain crops, fruit and vegetable crops and research indicate they will also take lambs. Pastural areas can be damaged by grazing and rooting and pigs can also spread weed seeds. Control methods include the installation of fencing, trapping, shooting and poisoning.



2. Methodology

Management works within the Site included pre-trapping monitoring and trapping. All Site standard protocols were followed and adhered to throughout the management period. Biodiversity Australia ensured to check in with Client staff upon arrival each day throughout the management period and as required whilst moving through gates as outlined by Site protocols. Methodology for each management period is detailed in Sections 2.1 and 2.2 below.

2.1 Pre-Trapping Monitoring Period

In accordance with the VPMP, eight (8) PIR cameras were installed across the Site for eighteen (18) consecutive days (9 May 2025 - 26 May 2025) by a suitably qualified BA Senior Vertebrate Pest Officer. In line with the VPMP, camera traps were installed within the same vicinity as previous years, to ensure consistency with the data. PIR Camera trap locations were mapped using a GIS system and given an identification number (Figure 2). Locations were set along established dirt tracks, animal tracks, edges of vegetation, and waterways.

Camera outputs were formally assessed at the end of the monitoring period, and the following data collected:

- Species.
- Number of animals seen.
- Sex of animals (where this could be determined).
- Direction of travel and activity observed.
- Camera trap number.
- Time of day.

Data collected during the monitoring provides insight on pest animal travel routes and indicated activity that the Offset Area is utilised for. Opportunistic data on other feral animal species and native species is collected throughout the data analysis, will also be used to contribute to understanding of feral animal activity levels both prior to and following control efforts.

2.2 Trapping Period

A trapping program was conducted over a twelve (12) day period within the Site. This occurred three (3) weeks after the camera trapping period due to wet weather. Twelve (12) traps were installed in selected areas and mapped (Figure 3).

Traps were set on the 17th of June 2025 and collected on 27th of June 2025. During this time, BA assessed the traps on a daily basis and serviced them when required.

In consideration of Wild Dog trapping, weather conditions was recorded daily, the following was recorded:

- Humidity
- Temperature
- Wind speed and direction

This is to be referred to in results, not in methods. (Appendix A-1).

Wild Dogs often traverse well defined paths along topographic features, and it is expected that Wild Dogs and Red Foxes will frequent established paths on a regular basis for the ease of travel these provide. Scent lures were placed with traps near these paths to attract Wild Dogs. The interaction between the placement of



traps/lures and the direction of wind was given careful consideration in order to ensure that scents of lures were blown across expected Wild Dog travel routes.

The following data was collected for all pest animals captured:

- Species.
- Sex.
- Date of capture.
- Location, including GPS coordinates of capture location.
- Trap type.
- Method of euthanasia.
- Pictures of animals prior to and post euthanasia.

2.2.1 Trap Preparation

Before use, traps were cleaned and treated with a tannin and wax solution to remove any scent and to give the traps a protective coating of wax. At this point, each individual trap was tested to ensure that all parts were accounted for, intact, and functioning properly.

2.2.2 Soft Jaw Trap Installation

As per the National Standard Operating Procedure for Wild Dogs (NATSOP-DOG001) (Appendix A-2), SJT's were utilised within the management program. Soft jaw traps were strategically placed, in order to minimise the exposure of trapped individuals to harsh conditions such as direct sunlight or rain. Once traps were positioned in a shallow hole in the ground, the trap was then anchored and set. The BA team member ensured that surrounding debris did not interfere with the spring mechanism.

A lure or attractant was placed in a location of high Wild Dog activity, aiming to provoke an investigation. The trap was placed at a pre-determined distance and bearing from the lure in the expectation that the target animal would step in that spot resulting in a capture. A mixture of artificial and natural lures were used.

2.2.3 Trap Monitoring

Each trap was checked every morning for animal welfare purposes. Throughout the process additional baits/scent lures were laid in or around traps as was deemed necessary by BA staff.

2.2.4 Euthanasia

The appropriate firearm and ammunition were used to ensure an instant lethal shot. For a Wild Dog, a smaller calibre rifle such as a .22 rimfire or .22 magnum rimfire with hollow/soft point ammunition is recommended. Each shot was taken at a safe distance once the animals were settled and still.

1.1.1 Bycatch

The below procedures were followed when a non-target species was caught in the SJT traps:

- Native injured: Transport to a local carer or Wildcare.
- Native not injured: Release.
- Domestic Pet injured/non-injured: Transport to local vet.
- Pest/Non-native: Humanely euthanise.



1.1.2 Analysis

The interaction between the placement of traps and the direction of the wind was given careful consideration to ensure expected Wild Dog travel routes were given adequate exposure to the scents of lures accompanying traps. For example, if a trap was positioned to the western side of an expected Wild Dog travel route, wind blowing in an eastwardly direction would expose the scent of the lure to the travel route. As such, all wind was blowing in an eastward wind direction would be considered when calculating the percentage of management days, the scent of the trap was exposed to Wild Dog travel routes.

In order to calculate the percentage of management days that lures were exposed to Wild Dog travel routes, the percentage of management days that the wind blew in each direction (north, south, east, west etc.) was calculated. The number of days that each lure's scent was blown towards paths was then calculated.



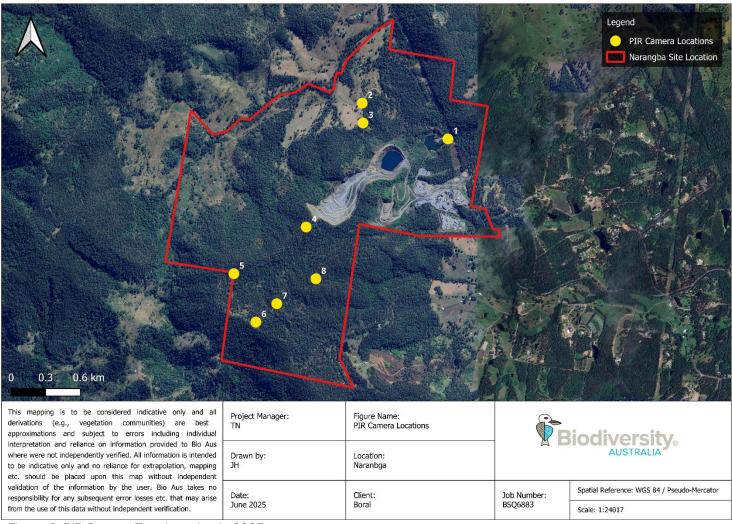


Figure 2: PIR Camera Trap Location in 2025





Figure 3: Soft Jaw Trap Locations



3. Results

3.1 Pre-Works Monitoring

Pre-works PIR camera monitoring within the Site captured a total of eleven (11) Wild Dogs, five (5) Red Foxes and fourteen (14) Feral Pigs. Results for the PIR camera monitoring period is displayed in Table 2 and Appendix A-3. It should be noted that Camera Trap 5 had technical issues, resulting in no photos.

Table 2: PIR Camera Trapping Results (Pests Only)

| Day | Time of Day (Day or Night) | Camera Trap # | Species | Number Observed | Sex (if determined) | Comment |
|-----|-------------------------------|------------------|-----------|--------------------|------------------------|--|
| 2 | Night | 4 | Wild Dog | 2 | Male and Female | 1 mottled Female, 1 Tan Male |
| 3 | Day | 6 | Wild Dog | Wild Dog 1 | | No white tips |
| | Night | 3 | | 1 | Male | Healthy Male – Tan |
| | Night | 4 | | 1 | Female | Tan – Healthy |
| 4 | Dusk | 6 | Wild Dog | 1 | Female | Same individual as Day 3 |
| | Dusk | 7 | | 1 | Unknown | Unknown Individual - Tan |
| | Night | 4 | Red Fox | 1 | Unknown | - |
| 5 | Night | 1 | Wild Dog | 1 | Female | Same as Day 2 Female |
| | Night | 4 | Wild Dog | 3 (1 new) | 1 Male, 2 Females | Same pair as Day 2. Extra female, mottled colour. |
| 7 | Night | 8 | Tina Dog | 1 | Female | Tan – dark muzzle. |
| | Night | 3 | Red Fox | 1 | Unknown | - |
| | Night | 1 | Wild Dog | 1 | Female | Same as Day 2 Female |
| | Dusk | 2 | | 1 | Unknown | Same as Day 4, CT 7 individual. |
| 8 | Day | 4 | | 1 | Unknown | Same as Day 4, CT 7 individual. |
| | Night | 7 | | 1 | Unknown | Same as Day 4, CT 7 individual. |
| | Day | 8 | | 2 | Unknown | - |
| 0 | Night | 8 | Wild Dog | 1 | Female | Same as Day 7, CT 8. |
| 9 | Night | 1 | Red Fox | 1 | Unknown | - |
| | Dusk | 2 | | 2 | Male and Female | Same as Day 2 pair |
| | Day | 4 | NATI L D | 1 | Female | Same as Day 7, CT 4 Female |
| 10 | Dusk | 6 | Wild Dog | 1 | Female | Same as Day 7, CT 4 Female |
| | Night | 7 | | 2 | Male and Female | Same as Day 2 pair |
| | Night | 3 | Feral Pig | 1 | Female | - |
| | Night | 7 | | 2 | Male and Female | Same as Day 2 pair |
| 11 | Day | 8 | Wild Dog | 3 (2 new) | Males and Females | Same Female as Day 7, CT 8. Two new individuals |
| | Day | 3 | Feral Pig | 2 | Males | - |



| 12 | Day | 3 | Feral Pig | 11 (9 new) | Males and Females | |
|----|--------------------|---|------------|----------------------|----------------------|------------------------------------|
| | Night | 4 | Red Fox | 1 | Unknown | - |
| 13 | Dusk | 7 | Wild Dog | 1 | Unknown | Same as Day 4, CT 7 individual. |
| | Day 3 Feral Pig 11 | | 11 | Males and Females | - | |
| | Day | 4 | | 1 | Female | Same as Day 7, CT 4 Female |
| 14 | Day | 6 | Wild Dog | 1 | Male | Same as Day 4, CT 4 Male. |
| | Day/Night | 7 | | 4 (1 new) | Males and Females | Same as Day 7, CT 4 Individuals |
| 15 | Day | 7 | Wild Dog | 1 | Female | Same as Day 7, CT 4 Female |
| | Night | 2 | Wild Dog | 2 | Male and Female | Same as Day 2 pair |
| | Night | 3 | - Wild Dog | 2 | Male and Female | Same as Day 2 pair |
| 16 | Night | 3 | Feral Pig | 3 | Male and Females | Same as Day 13, CT3. |
| | Dusk | 3 | Feral Pig | 11 | Males and Females | Same as Day 13, CT 3. |
| | Night | 4 | Red Fox | 1 | Unknown | Adolescent |
| | Night | 3 | | 1 | Female | Same as Day 2 Female |
| 17 | Day | 4 | Wild Dog | 1 | Female | Same as Day 7, CT 4 Female |
| 17 | Dusk | 7 | | 4 | Males and Females | Same as Day 14, CT 7. |
| | Day | 3 | Feral Pig | 2 | Female | - |

Note – Separate Individuals are in bold, to determine number of each species observed.

3.1.1 Calculated Relevant Abundance Frequency

Calculated Relevant Abundance (CRA) is provided within this report to give insight into each targeted feral animals abundance onsite, compared to the other species abundance that was found throughout the monitoring period. The CRA is calculated by dividing the total number of a species caught on camera, by the total number of monitoring points over the eighteen-day monitoring period. Table 3 summaries the CRA of the target species caught on camera within the Site.

Table 3: Calculated Relevant Abundance Frequency

| Species | Total Number Recorded | Number of Monitoring Points | Calculated Relative Abundance | Calculated Relative Abundance (%) | 2024 Calculated Relative Abundance (%) |
|-----------|--------------------------|--------------------------------|-------------------------------------|---|--|
| Wild Dog | 11 | 144 | 0.08 | 8% | 3% |
| Red Fox | 5 | 144 | 0.03 | 3% | 8% |
| Feral Pig | 14 | 144 | 0.97 | 9.7% | 15% |



3.1.2 Wild Dogs

Within the 2025 Narangba Offset Area Monitoring program, eleven (11) Wild Dogs were observed within the Site. Individuals were able to be deciphered due to unique markings that were observed. This is an increase to 2024, with four (4) Wild Dogs observed. This is shown in the CRA, with a result of 8%, compared to 3% in 2024. Individuals that were previously observed in 2024, were sighted in the 2025 program, as displayed in Photo Plate 1 below. This reveals crucial knowledge, that Wild Dog Individuals are utilising the Site consistently, and not just traversing through.

Displayed in Figure 4, the number of sightings of Wild Dogs increases between Camera Traps 4, 7, and 8. These cameras are located in the central and southern portion of the Site, where human activity is lower compared to the northern portion of the Site. This differs from 2024 monitoring period, with Wild Dog observations higher in the north (4 dogs sighted in 2024 in the north).

The observed increase in Wild Dog and Feral Pig activity within the site (refer Section 3.1.6) suggests a significant rise in local food availability. Likely prey species include juvenile Feral Pigs, Deer and Cattle, European Hares, and macropod joeys, all of which are known to be preferred food sources for Wild Dogs.



Photo Plate 1: Top - Individual Sighted in 2024, Bottom - Same Individual Sighted in 2025



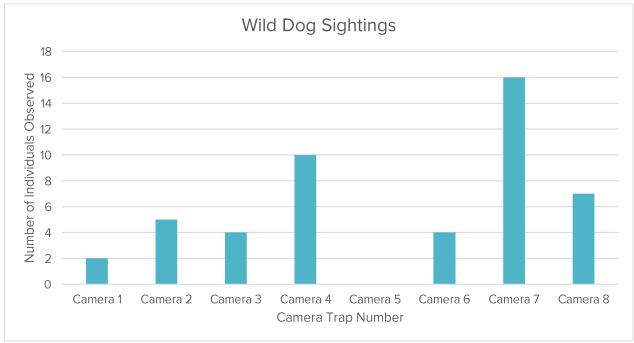


Figure 4: Wild Dog Sightings per Camera.

3.1.3 Red Foxes

Within 2025, a total of five (5) Red Foxes were observed within the Site. This resulted in a 3% CRA, which compared to last year's monitoring program (2024), was a 5% decrease. This decrease in Red Foxes within the Site could be a result of the increasing population of Wild Dogs that are present. Sightings of this species was at Camera Trap 1, 3, and 4. These are located in the centre and northern portions of site. These sightings also align with the sightings of European Hares, one (1) of the primary non-native food sources for Red Foxes.

3.1.4 Feral Cat

Within 2025, no Feral Cats were sighted within the Site. This is conducive data, with last years (2024) results also showing no Feral Cats within the Site.

3.1.5 Deer

No Deer were recorded within the Site for 2025. In 2024, one (1) Red Deer stag was recorded, in the centre of the Site. This slight variation in results could be due to differing weather between 2024 and 2025. Deer are known to forage on open grassy glades within open forests, however, if feed is scarce, they will forage on woody matter and tree shoots. In 2024, the Site experienced wetter conditions, compared to 2025 (BOM, 2025), which could explain the absence of this species within 2025, due to it needing to expand its foraging habitat with drier conditions.

3.1.6 Feral Pigs

The 2025 Ormeau Offset Area Monitoring program resulted in a total of fourteen (14) Feral Pigs observed within the Site. This was a slight decrease compared to 2024, where eighteen (18) were recorded. In 2024, records of Feral Pigs were predominantly piglets, whereas in 2025, no piglets were sighted. With these results, it can be assumed that the Feral Pig population is stable within the Site, with no major fluctuations of the population.



3.1.7 Opportunistic Sightings

No non-target pest species as per the VPMP were observed within the Site. Opportunistic sightings of native animals were captured throughout the camera trapping program. A total of five (5) native species were observed including Red-necked Wallabies (*Macropus rufogriseus*), Swamp Wallabies (*Wallabia bicolor*), Spotter Harrier (*Circus assimilis*), Brush Turkey (*Alectura lathami*), and Laughing Kookaburra (*Dacelo novaeguineae*). It was noted that sightings of native wildlife was less than 2024. In 2024, a total of fourteen (14) red-necked wallabies were observed, while in 2025, four (4) were sighted.

European Hares (*Lepus europaeus*) were also sighted within the monitoring program, at Camera Traps 1 and 4. A total of six (6) individuals were observed, predominately at Camera Trap 1. This is consistent with previous monitoring programs, showing no increase in the population within the Site.

3.2 Trapping

Trapping activities resulted in the capture and euthanasia of one (1) Red Fox and two (2) Wild Dogs. These results are displayed in Table 4. Trap disturbances can help to give an indication of animal activity in the area. Over the duration of the trapping period, there were nine (9) recorded trap and lure disturbances (Table 4).

Table 4: Trapping Results

| Date of capture | Trap Number | Lure Disturbance | Trap Disturbance | Species | Sex/Age | Count | Comment | |
|-----------------|----------------|---------------------|---------------------|----------|---------|-------|---|--|
| | | | | | | | | |
| 18/06/2025 | 10 | Y | Y | Red Fox | Male | 1 | Adult – Euthanised | |
| 18/06/2025 | 3 | Y | Y | - | - | - | No animal present. Feral Pig hairs observed in trap. | |
| 19/06/2025 | 2 | Y | N | - | - | - | Lure dug out. Suspected Red Fox. | |
| 20/06/2025 | 11 | Y | Y | - | - | - | No animal present. Trap and lure dug out. | |
| 21/06/2025 | 5 | Y | Y | Wild Dog | Female | 1 | Adut – Euthanised | |
| 22/06/2025 | 1 | Y | N | - | - | - | Lure dug out. | |
| 22/06/2025 | 12 | Y | N | - | - | - | Lure dug out. | |
| 22/06/2025 | 7 | Y | N | - | - | - | Lure disturbed. Fox tracks observed. Fox lures added to this trap. (e.g. Fox Urine). | |
| 23/06/2025 | 8 | Y | N | - | - | - | Lure dug out. Suspected Red Fox. | |
| 24/06/2025 | 4 | Y | N | - | - | - | Lure dug out. Suspected Wild Dog. | |
| 24/06/2025 | 3 | Y | N | - | - | - | Lure dug out. Suspected Wild Dog. | |
| 28/06/2025 | 8 | Y | Y | Wild Dog | Female | 1 | Adult – Euthanised | |



3.2.1 Trap Exposure

Placement of traps relative to paths was given careful consideration by BA to ensure that dogs would have adequate access and exposure to traps to increase efficacy of the control program. The objective was to ensure that the trap was downwind of the lure for the greatest period of time.

Table 4: Percentage of control days that scents of lures at each trap were exposed to nearby tracks.

| Trap Number | Trap Position (relative to path) | % of Management Days Tracks were exposed to Trap Scents |
|-------------|-------------------------------------|--|
| 1 | N | 8.3% |
| 2 | W | 8.3% |
| 3 | Е | 17% |
| 4 | SW | 33% |
| 5 | S | 33% |
| 6 | W | 33% |
| 7 | Е | 17% |
| 8 | SE | 17% |
| 10 | NE | 17% |
| 11 | W | 33% |
| 12 | N | 8.3% |
| 13 | Е | 17% |
| Averag | ge exposure (% of management days): | 20.16% |

4. Recommendations

Increased Wild Dog and Feral Pig activity indicates a rise in local food availability, likely supporting larger predator populations. It is recommended that targeted control measures be implemented to address this trend. Recommendations for future management of each species is detailed in Table 5.

Table 5: Recommendations

| Species | Recommendation |
|------------------------------|---|
| Soft Jaw Trapping Program | A Soft Jaw Trapping program is recommended to continue as per the VPMP requirements and locations, and should target the following species: Red Fox Wild Dog |
| Cage Trapping Program | A strategic Cage Trapping Program targeting Feral Pigs is recommended to occur in conjunction with the Soft Jaw Trapping Program. Traps will be Feral Pig specific, and placement will be based on the same year PIR camera trapping results, and previous years PIR camera results. |
| Deer Program | Deer have been observed throughout the Site in previous years. Biodiversity Australia recommend that management of Deer occur, if an increase of activity is observed within the Site. Management will include (But no limited to): Thermal Shooting Program Trapping Program |



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6. Appendix

A-1 Weather Report for Trapping Period

| Date | Min Temp. | Max Temp. ⁰ C | Rainfall per day mm | Max Wind Gust | | |
|------------|-----------|-----------------------------|------------------------|---------------|-------|-------|
| | | | | Direction. | Speed | Time |
| 17/06/2025 | 12.1 | 19.5 | 0 | SW | 24 | 8:53 |
| 18/06/2025 | 12 | 21.3 | 0 | SSW | 28 | 10:07 |
| 19/06/2025 | 12.1 | 22.4 | 0 | S | 37 | 21:03 |
| 20/06/2025 | 12.7 | 21.3 | 0 | S | 35 | 14:11 |
| 21/06/2025 | 13.8 | 19.9 | 0.6 | SSE | 31 | 16:35 |
| 22/06/2025 | 14.7 | 22 | 2.4 | S | 30 | 5:52 |
| 23/06/2025 | 15 | 22.5 | 5.2 | S | 22 | 5:17 |
| 24/06/2025 | 14.9 | 23.3 | 1.2 | N | 28 | 18:23 |
| 25/06/2025 | 16.1 | 22.4 | 0.2 | W | 50 | 14:53 |
| 26/06/2025 | 11.8 | 19.6 | 0 | WSW | 37 | 0:42 |
| 27/06/2025 | 10 | 20 | 0 | SSE | 35 | 20:18 |
| 28/06/2025 | 13.1 | 20.5 | 2 | SSW | 30 | 9:38 |



A-2 DOG001 Soft Jaw Trapping Procedure





Voluntarily adopted by the Vertebrate Pest Committee 2012 with the Invasive Plants and Animals Committee endorsing minor updates September 2017.

BACKGROUND

Wild dogs, which include feral domestic dogs, dingoes and their hybrids, prey on livestock causing significant impact on agricultural production. Methods of control include poisoning with sodium monofluoroacetate (1080), trapping, shooting, exclusion fencing, aversion and use of livestock guarding animals.

Trapping of wild dogs is often used where poison baiting is less effective, for example, in or around lambing paddocks where there is abundant food. Trapping is useful for targeting individual problem animals, or as a follow-up after 1080 baiting programs, but is regarded as an inefficient method for general population control.

Padded jaw traps are used to reduce the incidence and severity of foot injuries sustained by dogs. Traps are inspected daily and caught dogs are shot whilst still held by the trap. If the traps cannot be checked daily, lethal trap devices containing an humane toxin should be used to prevent prolonged exposure and suffering.

This National Standard Operating Procedure (NATSOP) is a guide only; it does not replace or override the legislation that applies in the relevant state or territory jurisdiction. The NATSOP should only be used subject to the applicable legal requirements (including WH&S) operating in the relevant jurisdiction.

APPLICATION

- Trapping is time-consuming and labour intensive and is therefore best suited for control of small populations or problem individuals.
- Traps have the potential to cause significant suffering and distress so should only be used when there is no suitable alternative.
- Humane and successful trapping requires extensive training and experience. Trapping by
 inexperienced operators can result in 'trap-shy' dogs that are difficult to catch because they have
 previously escaped from a carelessly prepared and presented trap.
- Selection of appropriate traps and trap of capturing of non-target animals, and to minimise the pain and distress experienced by trapped animals.
- Every effort must be made to avoid animal deaths from factors such as exposure, shock, capture myopathy and predation.
- Once trapped, wild dogs are euthanased by shooting at the site of capture.
- Traps must be used in accordance with relevant state and territory legislation (see Table 1). In some states for example, Western Australia, a permit may be required to trap within certain municipalities.
- Shooting of wild dogs in traps should only be performed by skilled operators who have the
 necessary experience with firearms and who hold the appropriate licences and accreditation.
 Storage and transportation of firearms and ammunition must comply with relevant legislation
 requirements.
- Unless otherwise authorised by the relevant vertebrate pest authority, where leg-hold traps cannot
 be checked at least once daily a lethal toxin must be applied to the jaws of the trap or a lethal trap
 device must be used. Use of the lethal toxin or lethal trap device is to bring about a relatively quick
 death of trapped animals. This is preferable to the dog suffering a prolonged death from exposure,
 dehydration and/or stress. New lethal trap devices using humane toxins are currently being
 developed for use in all states and territories.



Table 1: Relevant State and Territory animal welfare and related legislation relevant to the use of traps (legislation correct 2012).

| Jurisdiction | Legislation | Conditions |
|--------------|---|--|
| ACT | Animal Welfare Act 1992 | Use of steel-jaw traps is prohibited. Trapping with padded-jaw traps, cage traps and treadle snares is permitted. |
| NSW | Prevention of Cruelty to Animals Act 1979 | Use of steel-jaw traps is prohibited. Trapping with padded-jaw traps, cage traps and treadle snares is permitted. |
| NT | Animal Welfare Act 2000 | Use of steel-jaw traps is prohibited. Trapping with padded-jaw traps is permitted |
| QLD | Animal Care and Protection Act 2001 | Steel-jaw traps are not prohibited traps |
| TAS | Animal Welfare Act 1993 | Leg-hold traps and snares are prohibited. |



| SA | Animal Welfare Act 1985 | Small steel-jaw traps are prohibited. Large steel-jaw traps are prohibited in most areas except for wild dog control along the dingo fence and for research purposes. The large steel-jaw traps are required to be bound with cloth soaked strychnine or modified. |
|-----|--|--|
| VIC | Prevention of Cruelty to Animals Act 1986 Prevention of Cruelty to Animals Regulations 2008 | Mandatory features of traps, conditions of use, inspection periods and where traps may be set are specified for all trap types. All steel-jaw traps are prohibited. Padded traps are permitted for wild dogs, foxes and rabbits. Confinement traps, net traps and rodent kill traps are permitted. Lethal snares are illegal. Non-kill snares and kill traps require Ministerial approval. |



Animal Welfare Act 2002

Agriculture and Related Resources
Protection (Traps) Regulations 1982

Only padded steel-jawed traps are permitted for wild with a cloth soaked in strychnine.
Only padded steel-jawed traps are permitted for fox control and use in research programs. Permits are required to set traps in metropolitan areas. Neck snares are illegal.

ANIMAL WELFARE CONSIDERATIONS

Impact on target animals

- Traps which catch dogs on the leg or foot cause pain and distress in two ways; pressure of the trap jaws on the captured limb and restraint of the animal. Injuries will inevitably occur to some animals, especially when they struggle to escape the trap. These range from swelling of the foot and lacerations to dislocations and fractures. Wild dogs may also inflict injuries to their feet and legs by chewing on the captured limb, and to their teeth, lips and gums by gnawing at the trap jaws. To reduce capture distress, trapped dogs must be destroyed humanely and as quickly as possible.
- It is preferable to set traps at sites where vegetation can provide shade and shelter. However, sites should be avoided where there is a risk of the trapped animal becoming entangled in understorey vegetation or fences, which could result in dislocation of the limb.
- Captured animals must be approached carefully and quietly to reduce panic, further stress and risk of injury.
- To minimise the animal welfare implications of leaving dependent pups to die a slow death from starvation it is preferable not to undertake trapping when females are whelping, that is, June to August in temperate areas.
- If lactating bitches are caught in a trap, efforts should be made to find dependent pups and kill them quickly and humanely with a shot to the brain.
- Traps should be inspected at least daily. In remote and extensive areas where this may not be
 possible, a lethal trap device containing a humane poison should be used to prevent prolonged
 exposure and suffering.

Impact on non target animals

Traps are not target specific, so a wide range of nontarget species may be caught. These can
include birds (eg ravens, magpies, pied currawongs, kangaroos, wallabies, rabbits, hares,
echidnas, goannas, wombats, possums, bandicoots, quolls and sheep). If there is a high risk of
trapping non-target animals, traps should not be set.



- Different groups of non-target animals suffer different levels of injury and distress. For example:
 - Wallabies often experience serious injuries (eg dislocations) due to the morphology of their limbs and because they become very agitated when restrained.
 - Goannas (eg lace monitors) also suffer from dislocations and can die from hyperthermia.
 - Birds, rabbits and hares can be preyed upon by foxes, cats and wild dogs while caught in traps.
- Traps must not be set near areas such as waterholes or gully crossings that are regularly
 frequented by nontarget species. Animal tracks and pads or holes in fences should also be
 avoided.
- If scavenging birds or goannas are known to frequent the area, food baits should not be used.
- If the trap is not checked for many days trapped nontarget animals will suffer for a prolonged period, dying from thirst, exposure and/or stress.
- Live non-target animals caught in traps must be examined for injuries and signs of illness or distress and dealt with as follows:
 - o Animals which are unharmed or have only received minimal injuries such as minor cuts or abrasions should be immediately released at the site of capture.
 - Animals which have more severe injuries or which are suffering from thermal stress should receive appropriate attention. An animal suffering from thermal stress can initially be placed in a suitable quiet holding area which provides warmth or shade to allow recovery before release. Animals with treatable injuries that cannot be immediately released or those failing to recover from thermal stress should be presented to a veterinarian or a registered wildlife carer for treatment.
 - Animals that have injuries which are untreatable or which would compromise their survival in the wild should be euthanased using a technique that is suitable for the species. For more information on euthanasia techniques refer to Methods of Euthanasia.
- If a domestic pet is caught, it should be taken to the nearest animal shelter, council pound or
 veterinarian where it can be scanned for a microchip and the owner contacted, or assessed for
 suitability of re-homing.
- If foxes or feral cats are caught in the trap they must be euthanased quickly and humanely by a shot to the brain using an appropriate firearm.

HEALTH AND SAFETY CONSIDERATIONS

- Firearms are hazardous. All people should stand well behind the shooter when a dog is being shot. The line of fire must be chosen to prevent accidents or injury from stray bullets or ricochets.
- Care must be taken when handling wild dog carcasses as they may carry diseases such as
 hydatidosis and sarcoptic mange that can affect humans and other animals. A dog with obvious
 mange should only be handled while wearing gloves. Routinely wash hands after handling all
 wild dog carcasses.
- Operators should be wary of the risks of injury when placing and setting traps. Protective clothing, boots and leather gloves may help prevent injuries from shovels, hammers and trap jaws.



EQUIPMENT REQUIRED

Traps

- Approved padded-jaw traps suitable for catching wild dogs must be used for example, padded Lanes dingo trap or Victor Soft-Catch® trap no. 3. It is illegal to use serrated, steel-jawed traps in most states and they are not recommended for use in any circumstances on animal welfare grounds.
- Traps must have the following characteristics:
 - o The jaws have no teeth.
 - The jaws are offset to increase the space between them when closed (ie a distance of 6-8 mm remains when the jaws are closed).
 - Each jaw has a rubber-like pad to cushion the impact of the jaws on the limb and to prevent the limb sliding out. The padding fills the offset gap when the jaws are closed.
- Traps should also have:
 - A spring placed in the anchor chain to act as a shock absorber, reducing the chance of dislocation of thek,captured limb. Swivels are located on both ends of the anchor chain allowing the trap to twist as the animal struggles to escape.
- Adjustable pan tension so that a certain minimum force is required to depress the pan and trigger the trap. This minimises the chance of smaller non-target animals setting off the trap.

Lures

- Olfactory stimuli such as dog faeces and/or urine, or a commercially prepared lure (eg synthetic fermented egg) are used to lure wild dogs into the trap set.
- The attractiveness of lures will vary with season and location.

Meat baits

- A handful of meat bait (eg beef, rabbit, lamb, chicken, and kangaroo) can also be placed near the trap.
- Attractiveness and palatability of the bait will vary with season and location.

Firearms and ammunition

- Firearms no smaller than a .17 calibre rimfire with hollow/soft point ammunition are recommended for euthanasia.
- 12 gauge shotguns with shot sizes of BB or AAA may also be used.

PROCEDURES

Selection of trap sites

• Traps should be set where the dog is most likely to find and investigate the unfamiliar lure odour eg beside regularly used boundary pads, near scent pads and around scratch points. Do



not set traps near fences and other objects such as trees, bushes etc. in which the trapped dog may become entangled.

• The location of all trap sites must be accurately recorded and marked. This information should be readily available to others in case the trapper is unable to return to check traps.

Setting of traps

- It is preferable to set traps at the end of each day and check them each morning.
- Test that the trap is functioning properly before setting.
- Traps should only be anchored to stakes or fixed objects if there is a shock absorbing device
 such as a spring fitted to the anchor chain and a swivel attaching the chain to the trap. It is
 recommended to use a short length of chain (approx. 50 cm). Alternatively the trap can be tied
 to 'drags', objects such as rocks, solid pieces of steel or small logs that will move when the dog
 pulls against the trap.
- Set the trap and place into position in the hole in the ground. Ensure that surrounding shrubs or debris will not interfere with the spring mechanism.
- Camouflage the area around the trap with leaves, grass debris etc. but leave a slightly cleared area (10–15 cm) over the area of the plate.
- Place the lure on a slightly elevated clump of grass, stick or rock behind the trap. The distance from the plate of the trap to the decoy is critical and should be 45–50 cm, roughly equivalent to the distance between a dog's front feet and his nose when leaning forward to smell.

Shooting of wild dogs

- Trapped dogs should be euthanased by shooting whilst still held by the trap.
- Unnecessary people should keep away from the area to allow the dog to become less agitated. The shooter should approach the animal in a calm and quiet manner.
- To maximise the impact of the shot and to minimise the risk of misdirection the range should be as short as possible, that is around 5-20 cm from the head if using a rifle, 1–2 m if using a shotgun.
- Never fire when the dog is moving its head, be patient and wait until the dog is motionless
 before shooting. Accuracy is important to achieve a humane death. One shot should ensure
 instantaneous loss of consciousness and rapid death without resumption of consciousness.
 Shots must be aimed to destroy the major centres at the back of the brain near the spinal cord.
 This can be achieved by one of the following methods (see diagrams below):

Frontal position (front view)

The firearm is aimed at a point midway between the level of the eyes and the base of the ears, but slightly off to one side so as to miss the bony ridge that runs down the middle of the skull. The aim should be slightly across the centreline of the skull and towards the spine.

Temporal position (side view)

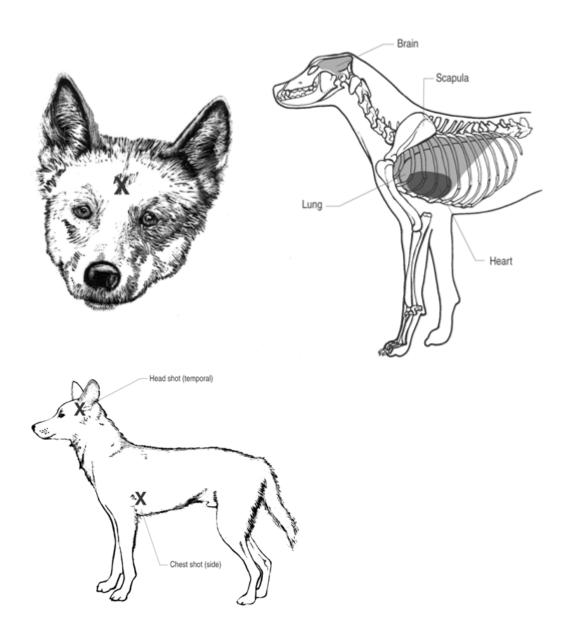
The firearm is aimed horizontally at the side of the head at a point midway between the eye and the base of the ear.

- Death of shot animals should always be confirmed by observing the following:
 - o Absence of rhythmic, respiratory movements
 - Absence of eye protection reflex (corneal reflex) or 'blink'
 - o A fixed, glazed expression in the eyes



 Loss of colour in mucous membranes (become mottled and pale without refill after pres sure is applied). If death cannot be verified, a second shot to the head should be taken immediately.

Recommended shot placements for wild dogs



Note: Head shots (temporal or frontal) should be used for shooting wild dogs caught in traps. In order: Side view, Side view (skeleton), Head shot (frontal)



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The Centre for Invasive Species Solutions manages these documents on behalf of the Environment and Invasives Committee (EIC). The authors of these documents have taken care to validate the accuracy of the information at the time of writing. This information has been prepared with care but it is provided "as is", without warranty of any kind, to the extent permitted by law.

If you have printed this document please ensure you regularly check https://pestsmart.org.au for the latest updates of these documents.

Reference me as: Sharp T (2012) NATSOP-DOG001 National Standard Operating Procedure: Trapping of wild dogs using padded jaw traps. PestSmart website: https://pestsmart.org.au/toolkit-resource/trapping-of-wild-dogs-using-padded-jaw-traps/

A-3 PIR Camera Monitoring Results

A-3-1 Camera 1 – Top: Wild Dog, Middle: Red Fox, Bottom: European Hare









A-3-2 Camera 2 – Top & Middle: Wild Dog, Bottom: Feral Pigs









A-3-3 Camera 3 – First Three: Wild Dogs & Red Fox, Bottom Three: Feral Pigs









FERAL ANIMAL MANAGEMENT PROGRAM REPORT | NARANGBA QUARRY | AUGUST 2025









A-3-4 Camera 4 – Top & Middle: Wild Dogs, Bottom: Red Fox









A-3-5 Camera 6 – Wild Dogs









A-3-6 Camera 7









A-3-7 Camera 8











S28 – A OPERATIONAL POST BURN REPORT

| BURN NAME | Boral Narangba FMU-12 HRB | Lot/Plan/s No. (all approvals obtained) 🏻 Yes | 53/RP895391 93/SP193378 |
|------------------------|------------------------------|---|----------------------------|
| Burn No. | Bor_Nar_01.24 | | |
| Location | Narangba Quarry | Road Segment No. | NA |
| LGA | Moreton Bay Regional | Proposed Timing | NA |
| Date burn started | 23/07/2024 | Time | 10:00 |
| Date burn/s deemed out | 24/07/2024 | Time | 12:00 |
| Permit # | F 538428 | Complexity | CR2-54 |

| Incident Controller | Joshua Bull | Fireland Director |
|---------------------|-------------|-------------------|
| | Name | Position |

| | | | | - | | |
|---|---|-------------------|---|-----------|-------------------|--|
| SITUATION - OUTCOMES | | | | | | |
| Area to be treated | 26.3 Ha | Percentage aim | 40 - 60% | Last Fire | Unknown | |
| Actual treated area | ~ 17 Ha | Percentage | ~ 65% | Severity | Low / Moderate | |
| | MISSIC | N - OUTC | OMES | | | |
| Aim & Objectives (Outline the general intent of the proposed burn and the specific objectives. Consider fuel load, fuel structure & mosaic effect) | Management Plan. Objective 1. Undert Objective measures | ake planned bur | required to support the naiming for 40-60% co | overage. | | |
| Outcomes (Outline if the objectives were met, if not why not) | Objectives were met. Approximately 60% coverage achieved across the burn area. Good continuous burn coverage around containment lines, particularly the Southern and Western edge. Reduction in near surface and surface bushfire fuels. No breaches of containment. Minimal heavy timbers ignited and minimal damage to habitat trees observed. | | | | | |
| List recommendations (For burn area, may include fire trail works) | Continue current access fire trails maintenance program. Provides good burn containments and access for fire response if required. Continue current rotation of planned burning areas for ecological and mitigation, targeting areas as seasons and conditions permit. | | | | | |



| EXECUTION - DETAILS | | | | | | |
|--|---|-----------------------------|-----------------------|----|-----------------|--------------------|
| Weather Statistics | | | | | | |
| Date/Time | Temperature (degrees) | Relative Humidity (%) | Wind Spec (km/h | ed | Direction | Other |
| 23/07/2024 10:00 | 17 | 57 | 8 | | SSW | |
| 11:00 | 19 | 51 | 9 | | S | |
| 12:00 | 20 | 46 | 8 | | SE | |
| 13:00 | 21 | 41 | 8 | | SE | |
| 14:00 | 21 | 42 | 8 | | ESE | |
| 15:00 | 21 | 44 | 9 | | ESE | |
| 16:00 | 20 | 49 | 9 | | E | |
| 17:00 | 17 | 59 | 8 | | E | |
| 18:00 | 14 | 73 | 5 | | ESE | |
| Comments (List any weather conditions that significantly impacted operations) Ignition used | Nil. Good fuels and Fire danger index On ground igniti | Low / Mod | | | id recovery and | d regeneration. 90 |
| (Describe the ignition) | Aerial Ignition Line and spot ignitions along trails and internal lighting was used to contain, manage intensity and for burn coverage. Used available conditions and predominant wind direction on site. Lighting commencing at the high point near point 12a and crews moved both ways. Crews moved West and crews moved South. Some internal lighting occurred on the Northern side of Browns Creek to encourage coverage to available fuels. Mush damper fuels and conditions in this area. | | | | | |
| Implementation Comments | The slopes on the Southern side of Browns Creek were more open with grassy fuels and more available for burning under planned conditions. South facing slopes with a more closed canopy, less grass and more weedy had near surface fuels that were less available for burning. Fuels that were available were targeted. | | | | | |
| | ADM | INISTRAT | ION | | | |
| Complaints No Issues | Nil. | | | | | |
| Infrastructure damage ☑ No Issues | Nil. | | | | | |
| Impact on road network ☑ No Issues | Nil. | | | | | |
| Impact on community | Nil. | | | | | |



| 50 C | |
|---|------|
| ⊠ No Issues | |
| Impact on direct residents or stakeholders No Issues | Nil. |
| Other | Nil. |
| (Include any other comments) | |

SAFETY

Any incidents

Nil.











































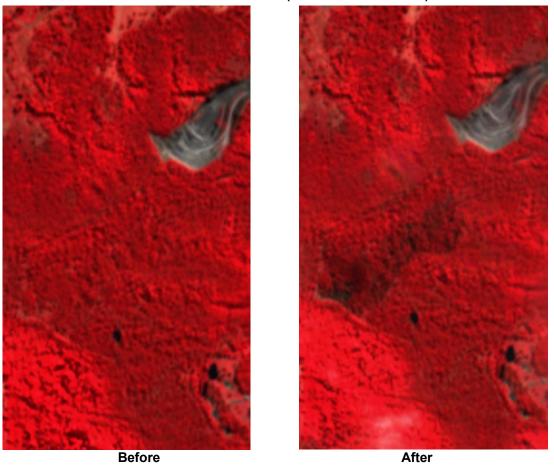








Satellite visible burn scar (Source: Sentinel Hub)

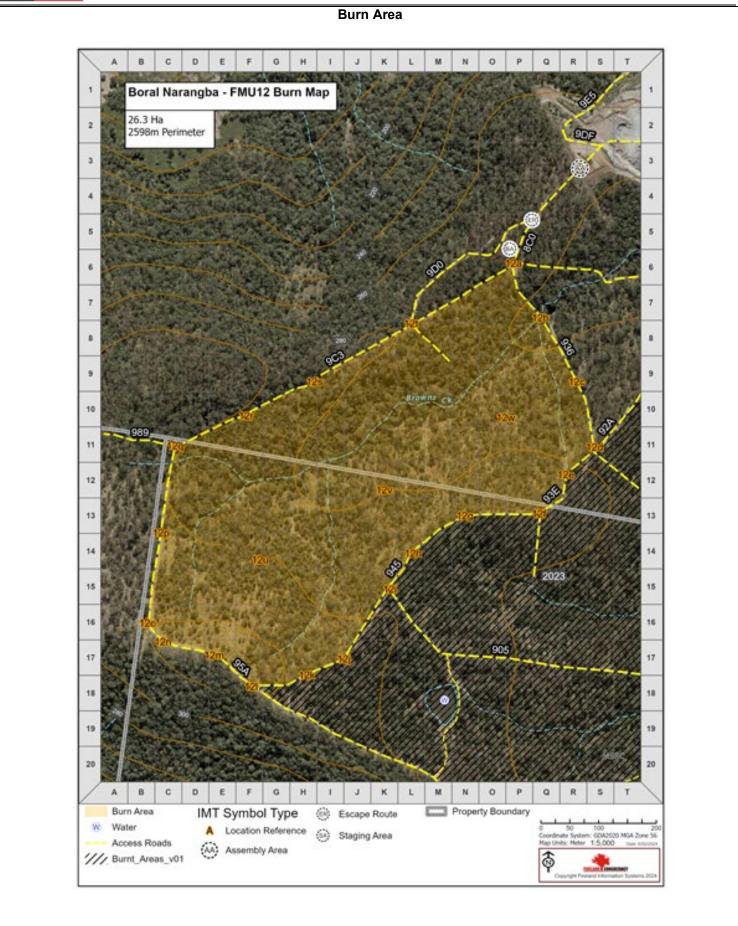




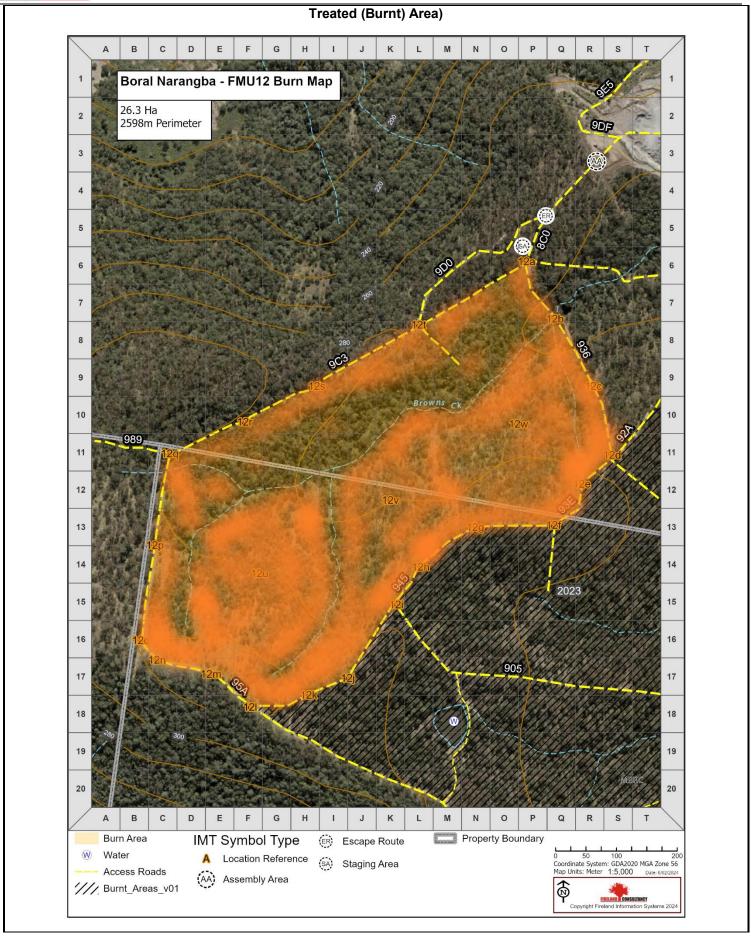
Permit to Light

| (Constitution of Constitution | | it to Light Fi | re | G 538428 |
|---|---|---|--|--|
| Chief Fire Warder's District / Fire Warder's District / Fire Warder's District / Fire Warder's Street Indones | len's District, hereby grant to: Lac Road Road the following Lot No (s) and Plan No (s). | the disclosure of all orders, notices, notifications policiation. The requirement to make disclosure is that give the second of | or entitions currently affecting the land one of the goodificons upon which this per BRKBANE BELLE BELLE BRANE BRA | Boral Diany FMU , ph; 0447 431 727 |
| for the specific purpose of: hazard mi Subject to the following conditions: | tigation, debris removal, weed control, past | ure management, other | - Hazard Mitig | a-for: |
| A firebreak sufficient to prevent to Base | he spread of fire is to be in place. For this pe | ermit, breaks are to be: slashed / n | nown (to a height not exceed | ding 100mm) bare earth, natural, or ー イ ー 子 metres. |
| 3. There must be enough capable p For this permit, there are to be | | lote 1 below) to control the fire ar illowing equipment on site and in thic les,— | nd prevent it's spread beyond close attendance on the fire | d the planned boundary of the fire. |
| 5. The fire must not be lit before / a | refr and / pfn or between ry QFES responses, the permit holder must r igade must be notified prior to lighting. The | | | |
| | py of the permit in their possession before I be made safe and the fire patrolled until the come for be combooled | nere is no longer any risk of the fir | · | |
| This permit covers the period from: Date:/4./6/24 | 14, 6,24 to 1,8,24 N | lote: If the fire is not out when the | e Permit expires, the Fire war | den must be contacted |
| Note 1. Persons must be physically and mentally | | | /// | (Fire Warden) |











S27 – C OPERATIONAL PRESCRIBED BURN PLAN

| BURN NAME | Boral_Narangba Quarry_FMU09 | | Lot/Plan/s No. | 139/SL10320 | |
|---|-----------------------------|----------------------------------|--|--|--|
| Burn No. | 2025_FMU09 | | (All approvals obtained) ☐ Yes | | |
| Location | Naran | gba Quarry | Road Segment No. | NA | |
| LGA | Moreto | on Bay City | Proposed Timing | Jan - Dec | |
| Permit Number | | | Actual Date | | |
| | | | | | |
| Prescribed Burn Plan | ner | Adam Bruce, Fireland Officer | | 18/07/2025 | |
| | | Name & position | | Signature & date | |
| | | Burn Planning checklist complete | | Yes No | |
| Burn Plan Reviewer | | Ben Tidey | | 26/07/2025 | |
| | | Name & position | | Signature & date | |
| | Burn Plan Review checklis | | t complete | Yes No | |
| | | | | | |
| ATTACHMENTS (not all attached – see file) | | | | | |
| □ Burn permit (Mandatory) □ Burn map (Mandatory) □ Complexity Rating (Mandatory) □ Pre-Burn Works order (if applicable) □ Vegetation & Habitat Map (if applicable) □ Traffic management plan (if applicable) | | | ☐ Map of notified re☐ Media advice (if a☐ Risk assessment☐ Contingency map☐ Other (if so what) | (if applicable) o/s (if applicable) | |

KEY MESSAGES FOR CREW BRIEFING

(Further details contained within Burn Plan)

Management of significant values:

- 40 60% burnt area
- Koala pre burn walk through. On going monitoring.
- Hollow bearing tress
- Casuarina limit fire impacts
- Northern and eastern edge has grass breaks adjust lighting accordingly
- High Voltage Powerlines Eastern Edge
- Cattle Fencing



SITUATION (SMEACS)

| PLANNING | | | | | | | |
|--|--|---|--|--|---|--|---|
| Complexity Rating: | (CR - 1) | (CR – 1), complexity [48]. | | | | | |
| SITE CHARACTERISTICS (ref | fer to Op | er to Operational Burn Map) | | | | | |
| Area to be treated | ~9Ha | Percentage aim: | 40-60% | Last fire type: | Unknown | Last fire: | Unknown |
| Description of site (Topography, slope and aspect) | located t | | est of the un | it. The asp | ects vary acros | There is a draiss the blocks, c | |
| FUEL CHARACTERISTICS | | | | | | | |
| Vegetation type (General description of vegetation & fuel type, height, fuel variability) | thickenin Southerr moisture | g midstory lay section is mo aspects and s | er. re leaf fuel swales. cross the no | dominated | | n/northeast of the ace grass and searce | |
| Overall fuel hazard rating | Low | | e 🛛 High | n 🛚 Very | / High | treme | t/Ha |
| VALUES ASSESSMENT | | | | | | | |
| Significant Fauna/Flora on site. (Any values listed here that may be adversely affected by the planned fire to be included in the Values Management section.) | Source of Essential NCA State Known icon Presence | habitat preserus | g Mgt Report nt: ⊠ Yes E □ V □ N on: □ Yes ikely: ⊠ Ye | t ☐ Atlas o ☐ No IT ☐ LC ☐ ☑ No s ☐ No | | a ☑ Other de in values asses | sment |
| | Source of Essential NCA State Known in Presence Value at 1 Species: Source of Essential NCA State Known in Presence of Essential NCA State NCA STAT | habitat preser us | g Mgt Report nt: Yes E V N on: Yes kely: Yes nned fire act s lathami (Gl g Mgt Report nt: Yes E V N on: Yes kely: Yes | t | No ⊠ Yes – inclu Cockatoo) f Living Australia I SLC □ NL | a ☐ Other de in values asses a ☑ Other (CEP) de in values asses | – BMP v1.1) |
| | VMA Classification of the control of | scription: Euca chics +/- interbed agement Guide : Summer to late TY: Low. L: 3-6 years. L_MIN: 3. L_MAX: 6. GY: Aim to burn es mosaics. ISS g., Lantana cam y burning only wifunburnt areas | cern Least lyptus crebra dded volcanio lines: e-autumn. 40-60% of an UES: The su hara) with fire vith sufficient | t Concern 🔯 (a, E. tereticoncs) ny given areabstrate is type might be resoil moisture | nis, Corymbia ir a. Spot ignition i pically nutrient ri quired. Maintain e. Burning shoul | n cooler or moist ch and grassy. O ground litter and d aim to produce | er periods control of d fallen timber e fine scale |



| | Regional Ecosystem code: 12.11.9 VMA Class: □ Not of Concern ☑ Least Concern □ Of Concern □ Vulnerable □ Endangered Short Description: Eucalyptus tereticornis subsp. tereticornis or E. tereticornis subsp. basaltica open forest on metamorphics +/- interbedded volcanics, usually on ridges, crests and upper slopes. Fire Management Guidelines: SEASON: Summer to winter. INTENSITY: Plan for low to moderate. Unplanned occasional high intensity wildfire will occur. INTERVAL: 4-8 years maintains a healthy grassy system. 8-20 years for shrubby elements of understorey. INTERVAL_MIN: 4. INTERVAL_MIN: 4. INTERVAL_MAX: 20. STRATEGY: Aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey with open understorey of predominantly non-rainforest species). ISSUES: Occurs on exposed ridges and crests but soils are heavy and retain moisture. May contain heath species in understorey. Frequent fire is needed to maintain understorey integrity, keeping more mesic species low in the profile of the understorey so that other species can compete. It is essential that wildfires are not the sole source of fire in this ecosystem. High intensity fires occur periodically through time, however frequent low to moderate intensity fires will create the disturbance required to keep the understorey diverse. A follow-up burn soon after a high intensity wildfire can be considered to reduce germinating/resprouting mesic species. Value at threat from planned fire activities: ☑ No □ Yes – include in values assessment |
|--|--|
| | |
| Cultural Heritage. (Any values listed here that may be adversely affected by the planned fire to be included in the Values Management section.) | Value: No values listed or identified Source of record: ☐ Cultural Heritage Register ☐ Other (pls specify) Value at threat from planned fire activities: ☐ No ☐ Yes – include in Values Management. If a potential cultural heritage value is identified during the planned works, then the |
| | Cultural Heritage Chance Find protocol is to be implemented. |
| Bulit Assets & Utilities | Value: Moorina Road (Northern and Northwest boundary of properrty) |
| (Any values listed here that may be adversely affected by the planned fire to be included in the Values Management section.) | Source of record: ☑ Site inspection ☑ Imagery ☐ Other (pls specify) Value at threat from planned fire activities: ☐ No ☑ Yes – include in Values Management. |
| , | Value: Boral Narangba Quarry Site |
| | Source of record: ☐ Site inspection ☐ Imagery ☐ Other (pls specify) |
| | Value at threat from planned fire activities: ☐ No ☒ Yes – include in Values Management. |
| | Value: Multiple Private Residents (1x NW of burn, 1x NE or burn) |
| | Source of record: ☐ Site inspection ☐ Imagery ☐ Other (pls specify) |
| | Value at threat from planned fire activities: ☐ No ☐ Yes – include in Values Management. |
| | Value: High Voltage Powerlines – Eastern Edge |
| | Source of record: ☐ Site inspection ☐ Imagery ☐ Other (pls specify) |
| | Value at threat from planned fire activities: □ No ☑ Yes – include in Values Management. Value: Cattle Fencing |
| | |
| | Source of record: ⊠ Site inspection ☐ Imagery ☐ Other (pls specify) |



| Control Lines | | | | |
|--|------------------|-------------------|-------------------|----------|
| Control lines | Desired standard | Name | Location / Alphas | Prep |
| Refer to Operational Map | | | | required |
| Critical – 2WD Urban fire truck or water tanker etc. | UTV | Northern Boundary | 9.1 – 9.6 | Yes |
| Strategic – 4WD Medium appliance | Secondary | Eastern Boundary | 9.6 – 9.9 | Yes |
| Secondary – 4WD Light | Strategic | Southern Boundary | 9.9 – 9.14 | No |
| appliance (Echo or Isuzu etc.) | Strategic | Western Boundary | 9.14 – 9.1 | No |
| Other - 4WD Utility | | | | |
| UTV – Polaris | | | | |
| Walking trail – not vehicle trafficable | | | | |
| Creek / fuel moisture differential | | | | |

| Contingency control lines | Desired standard | Name | Location / Alphas | Prep req. | Keys req. |
|---|--------------------------------|--|---------------------------|-----------|--------------|
| (Identify where a breach of containment could possibly occur. List fallback lines in the event of a breakout) | Critical | Moorina Road | North / Northwest of burn | No | Yes |
| | Secondary | Boral Internal track infrastructure – FMU08 Sothern boundary | South of burn | No | Yes |
| | Secondary | Boral Internal track infrastructure – FMU08 Southern boundary | East of burn | No | Yes |
| Control line and contingency prep works required | Yes (If yes , has the F | Pre burn works order she | eet been populated?) | | |



MISSION

| Aim & Objectives | Aim |
|---|---|
| (Outline the general intent of the proposed burn and the specific objectives. Consider fuel load, fuel structure & mosaic effect) | Maintain and enhance ecological values associated with existing vegetation communities through the implementation of appropriate fire regimes. Through planning minimise likelihood of damage to assets and minimise nuisance impacts of smoke to neighbouring dwellings and public roads. Objectives Planned burn is contained within the burn unit perimeter. Planned burn achieves 40 – 60% burnt area. Nil damage to infrastructure. |
| Expected duration of burn/timeline | 3 - 6 hours of active ignition plus ongoing patrol and mop up. |

EXECUTION

| PREFFERED FIRE/FUEL PARAMETERS | | | | | | | | |
|--|---|-----|-----|-----------------------|------------|-------------------|--------|-----|
| Weather conditions | Max temp | 30° | | Max wind speed | d | 20 km | Min RH | 20% |
| | | | | & preferred direction | | S/SE influence | Max RH | 80% |
| Flame height | 0.3m – 1.5m (average) | | :) | Scorch Height: | | 3 - 6m (average) | | |
| Other guidelines | Burn with best possible soil moisture given implementation constraints. | | | | | | | |
| (List any weather and fuel | | | | | | | | |
| moisture conditions which will prohibit or restrict burning) | Max fire danger index | | Max | | Max KBDI ~ | ~120 | | |
| profibit of restrict burning) | | | | | | | | |
| Suggested ignition method | ☐ Ground ☐ Aerial ☐ Slingshot ☐ Other (if other what) | | | | | | | |
| Ignition pattern | Given the preferred wind direction of a Southerly / South-Easterly influence, begin ground lighting at point 9.6 one crew heading in a northerly direction, and the other | | | | | | | |
| (Describe the ignition method and | | | | | | | | |
| sequence of lighting) | crew heading in a southerly direction simultaneously to create burnt edge meeting | | | | | | | |
| (Procedure may be modified on | containment requirements. | | | | | | | |
| the day of the burn, based on | Burning nattern and strategies along Northern and Fastern adda may shange | | | | | | | |
| conditions and test burn) | Burning pattern and strategies along Northern and Eastern edge may change depending on conditions on the day due to the grass breaks. | | | | | | | |
| | depending on conditions on the day due to the grass breaks. | | | | | | | |
| | Some internal lighting may be required to meet objectives. | | | | | | | |



| SUGGESTED RESOURCES | | | | | | |
|---|---|-----------------|------|------|--------------------|--|
| Resource type: | Number required: | | | | | |
| | Fireland | Council/Utility | RFSQ | QFES | Other Land manager | |
| Light Attack ~ 400 litre | 3 | | | | | |
| Polaris | 2 | | | | | |
| Totals: | 5 | | | | | |
| Specialist personnel | Fauna Spotter/ Catcher | | | | | |
| (List function & name) | | | | | | |
| Contingency resources | Additional Fireland resources to be available pending pre burn implementation review. | | | | | |
| (List additional resources required if breakout occurs) | | | | | | |
| Water points | Туре | Location | | | | |
| (Refer to operational map) | Dam / Creek | 9.14 on map | | | | |
| (Describe the type e.g. hydrant, dam, static etc. & the location/s- | Dam | | | | | |
| grid reference) | Water trailer | TBC if required | | | | |



ADMINISTRATION

| Assembly area | 392 Moorina Road (apx) - Access Point gate |
|--|--|
| (Refer to Operational Burn Map) | |
| (Describe the location) | |
| Catering | Self sufficient |
| (Describe location, time and supplier) | |
| Fuel | BP - New Settlement Road, Oakey Flat Rd, Narangba QLD 4504 |
| (Describe location and type) | |

| NEIGHBOUR & LANDOWNER NOTIFICATIONS | | | | | | | |
|--|---|-------|----------------------|--|--|--|--|
| ☑ Firecom must be notified prior to lighting up, and at the completion of the day. ☐ All landowners must give consent for works to be carried out on their land. ☑ 72 hours' notice must be given to adjoining landowners/occupiers. | | | | | | | |
| Agency / Neighbour | Contact No. | Notes | | | | | |
| | | | | | | | |
| QFES media | QFESMedia@qfes.qld.gov.au | | Notify pre ignition. | | | | |
| Neighbours | | | Letter Box drop | | | | |
| Dept Health | GCHHSDisaster@health.qld.gov. au | | Notify pre ignition. | | | | |
| Dept Health | SHECC@health.qld.gov.au | | Notify pre ignition. | | | | |
| Firecom BNE | 1800 017 029 | | Notify pre ignition. | | | | |
| Local Ward office | tony.latter@moretonbay.qld.gov.au | | Notify pre ignition. | | | | |
| Patrol (outline patrol responsibilities, timeframe & resources) | Mop-up heavy fuel and fuels likely to reignite or pose a fire escape hazard - no active fire or large heavy fuels involved within 10m of containment line edge. | | | | | | |
| Other (Include any other logistical arrangements. Gate keys?) | Keys required for access to burn area and for other internal gates. Escort required | | | | | | |



COMMAND AND COMMUNICATIONS

| ORGANISATIONAL STRUCTURE | | | | |
|---|---------------------------------|-----------|-----------|--------|
| Position | Name | Call Sign | Channel/s | Mobile |
| Incident Controller | | | | |
| □Sector □ Crew leader Name TBA | | | | |
| □Sector □ Crew leader Name TBA | | | | |
| □Sector □ Crew leader Name TBA | | | | |
| □Sector □ Crew leader Name TBA | | | | |
| □Sector □ Crew leader Name | | | | |
| Safety advisor | | | | |
| COMMUNICATIONS | | | | |
| Fire command | Network/Channel: FC - Channel 1 | | | |
| Fire ground | Network/Channel: FC - Channel 1 | | | |
| Aviation | Network/Channel: | | | |
| Contingency communications (Describe arrangements if radio network fails) | Mobile phones, vehic | le UHF | | |



SAFETY

| Crew briefing (Prior to lighting up all personnel are to be briefed using the SMEACS) | Reassess hazard trees within a minimum of 1.5 tree lengths of all boundaries after the burn and prior to igntion. Elevation of site – fatigue management and crews' hydration Grassy breaks and increased patrol |
|---|--|
| Incidents | All incidents or near misses should be immediately reported to the IC and recorded in the Incident Log. Refer to Emergency and Incident Flow Chart. Start Incident Reporting as soon as practicable. |
| Escape routes (list locations) refer to operational burn map | Track to west of block- onto Moorina Road Track to East into quarry area. |
| Safe areas (list locations) refer to operational burn map | Point 9.14 East into quarry area. |
| Evacuation points (List location) refer to operational burn map | Moorina Road gate |

| BRIEFING UNDERTAKEN | | | | | | | | | |
|---------------------|----------|--------------------------------------|------------------------------|--|--|--|--|--|--|
| Date | Time | Incident Controller's signature (IC) | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| INCIDENT CON | NTROLLER | HANDOVER BRIEFING | | | | | | | |
| Date | Time | Outgoing IC signature | Incoming IC name & signature | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| DEBRIEF UND | ERTAKEN | | | | | | | | |
| Date | Time | Incident contro | ller's signature (IC) | | | | | | |
| | | | | | | | | | |

SAFETY BRIEFING – to be completed all burn days



VALUES MANAGEMENT

All burn prep tasks listed below are to be copied across into the Burn Prep Task Register.

Table 1: Burn Area Values Management

| This section to be used to identify threats to the identified values within (or adjacent) to the burn area from the planned fire event and recommended mitigation measures. | | | | | | | | |
|---|---|--|---|----------------------------|--|----------------------------|--|--|
| Value Type | Name of the | Location | Assets impacted | Work type | Impact Mitigation Strategy – Task/Constraint | Timing | | |
| Select from pulldown list. | feature/value | | (Species / buildings impacted) | Select from pulldown list. | Must be a task or constraint. For fauna refer to the Standard Mitigation Actions sheet and insert relevant details. Any <u>tasks</u> to be transferred to the <i>Burn Prep Works Order</i> section. | Select from pulldown list. | | |
| Utility | Example: Power poles | Refer to Ops Map | Koala | Asset protection | Task – remove fuels from within 1m of base of poles. | > 7 days before burn | | |
| Natural | All large hollow bearing trees, defined as live and dead trees greater than 80cm DBH having tree hollows with a diameter of more than 35cm that are a minimum of 6m above the ground. | Throughout site | - Glossy Black Cockatoo | Habitat tree prep | (T) Remove the fuel from within 1m of the base of the tree. Extend this treatment area as required to allow for adjacent fuels and slope. Where located in fine fibrous barked trees extend this treatment area as required. | > 3 days before burn | | |
| Natural | At risk moderate hollow bearing trees, defined as live or dead trees with a hollow/s 10 - 35cm in diameter located in either fine fibrous barked trees or trees with basal defects. | Throughout site | - Glossy Black Cockatoo | Habitat tree prep | (T) Remove the fuel from within 1m of the base of the tree. Extend this treatment area as required to allow for adjacent fuels and slope. Where located in fine fibrous barked trees extend this treatment area as required. | > 3 days before burn | | |
| Natural | Large to moderate size dead standing trees, defined as dead trees greater than 25cm DBH that have not been treated as hollow bearing trees. | Throughout site | - Glossy Black Cockatoo | Habitat tree prep | (T) Remove the fuel from within 30cm of the base of the tree. Extend this treatment area as required to allow for adjacent fuels and slope. Where located in fine fibrous barked trees extend this treatment area as required. | > 3 days before burn | | |
| Natural | Significant fauna species | Throughout site | - Koala | Fauna - search | (T) Conduct a walk-through assessment by a qualified Fauna Spotter Catcher on the day of the burn to identify the presence of any significant fauna (i.e. koala's, echidnas). Where found, their location is to be assessed and specific mitigation measures (e.g. exclusion of fire from the area immediately adjacent to the animal) implemented based on the risk to each individual. | Day of Burn | | |
| Natural | Large coarse woody debris, hollow bearing trees (live and dead) and riparian vegetation communities | Throughout site | - Koala - Glossy Black Cockatoo - Tusked Frog | Scheduling | (C) Undertake planned burns with suitable soil moisture conditions to reduce the likelihood of large coarse woody debris (logs, stumps), hollow bearing trees (live and dead) and riparian vegetation communities from being negatively impacted. KBDI < 120 | Day of Burn | | |
| Natural | Riparian vegetation communities | Throughout site | - Glossy Black Cockatoo - Tusked Frog | Scheduling | (C) Minimise fire impacts and fire behaviour adjacent to and within riparian areas through selection of appropriate weather conditions and lighting patterns. | Day of Burn | | |
| Natural | Unburnt patches and fire severity | Throughout site | - Koala - Glossy Black Cockatoo - Tusked Frog | Execution and lighting | (C) Keep fire behaviour and burn extent as low as reasonably practical to achieve the identified objectives whilst maintaining safety and planned burn security. Aim for Low to Moderate fire severity class (Average flame height <3.0m, Average scorch height <6.0m as per QPWS PB Guideline). KBDI < 120 | Day of Burn | | |
| Built | Cattle fencing | Along Northern boundary of burn unit | - Fencing | Execution and lighting | (C) Minimise fire impacts and fire behaviour adjacent to and within riparian areas through selection of appropriate weather conditions and lighting patterns. | Day of Burn | | |
| Built | Multiple Private Residents on Moorina Road – adjoining burn block | Northwest and Northeast of Burn | - Fencing | Execution and lighting | (C) Minimise fire impacts and fire behaviour adjacent to and within riparian areas through selection of appropriate weather conditions and lighting patterns. | Day of Burn | | |

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Table 2: Smoke Management

Assessment (Describe what may be affected and the strategies to reduce the risk of adverse effects)

This section to be used to assess values (relating to smoke) that may be threatened (adversely) from the planned fire event

| Value Type | Name of the value | Location | Threat | Work type | Mitigation – Task/Constraint | Timing | |
|----------------|---|------------------------------------|----------------------------|----------------------------|---|----------------------|--|
| Select from | | | (from the activity) | Select from pulldown list. | Must be a task or constraint. | Select from pulldown | |
| pulldown list. | | | | | Any tasks to be transferred to the Burn Prep Works Order section. | list. | |
| Person | Example: Vulnerable persons | Hospital to SE of burn | Smoke impacts - health | Scheduling | Constraint – only burn with a northerly wind. | Day of burn | |
| Built | Moorina Road | North / Northwest of Burn | Smoke impacts – Visibility | Scheduling | (C) Burn with suitable atmospheric conditions to allow smoke to rise and be disperse in upper air stream.(C) Burn under wind conditions that minimise smoke impacts. | Day of Burn | |
| Built | Boral Narangba Quarry Site | South of Burn | Smoke impacts – Visibility | Scheduling | (C) Burn with suitable atmospheric conditions to allow smoke to rise and be disperse in upper air stream. (C) Burn under wind conditions that minimise smoke impacts. | Day of Burn | |
| Built | Multiple Private Residents on Moorina Road | Northwest and Northeast of Burn | Smoke impacts – Visibility | Scheduling | (C) Burn with suitable atmospheric conditions to allow smoke to rise and be disperse in upper air stream.(C) Burn under wind conditions that minimise smoke impacts. | Day of Burn | |

Table 3: Traffic Management

Assessment (Describe what may be affected and the strategies to reduce the risk of adverse effects)

This section to be used to assess values (in relation to traffic management) that may be threatened (adversely) from the planned fire event

| Value Type Select from bulldown list. | Name of the value | Location | | Select from pulldown list. | | Timing Select from pulldown list. |
|---|-------------------|---------------|----------------------------|----------------------------|---|-----------------------------------|
| Built | Moorina Road | North of Burn | Smoke impacts – Visibility | Scheduling | (C) Burn with suitable atmospheric conditions to allow smoke to rise and be disperse in upper air stream. (C) Burn under wind conditions that minimise smoke impacts. | > 3 days before burn |

Table 4: Personal Safety Management

Assessment (Describe what threats are present that may cause adverse effects to staff, contractors or site users from the planned activity)

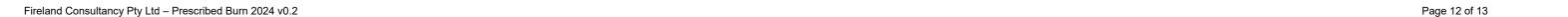
This section to be used to assess specific threats that exist that could adversely affect individuals from the activity.

| This section to | inis section to be used to assess specific threats that exist that could adversely affect individuals from the activity. | | | | | | | |
|----------------------------|--|----------------------|--|----------------------------|---|----------------------|--|--|
| | Name of the value | Location | Threat | Work type | Mitigation – Task/Constraint | Timing | | |
| Select from pulldown list. | | | (from the activity) | Select from pulldown list. | Must be a task or constraint. | Select from pulldown | | |
| pulldown list. | | | | | Any tasks to be transferred to the Burn Prep Works Order section. | list. | | |
| Person | Fireland staff | Throughout burn unit | Personal harm from hazard tree strike. | Hazard tree prep | Any hazard tree within 1.5 tree lengths of any road, walking trail, building or critical infrastructure. Hazard tree is defined as any tree (including limbs or branches) that has the potential to become hazardous (through tree fall and impact) through exposure to fire during the planned burn. (T) Remove the fuel from within 1m of the base of the tree. Extend this treatment area as required to allow for adjacent fuels and slope. Where located in fine fibrous barked trees extend this treatment area as required. | > 3 days before burn | | |
| Person | Fireland staff | Adjacent quarry area | Person harm - injuries to crews | Planned Burning Activities | (C) No access into quarry area without an escourt. | Day of Burn | | |

Fireland Consultancy Pty Ltd – Prescribed Burn 2024 v0.2

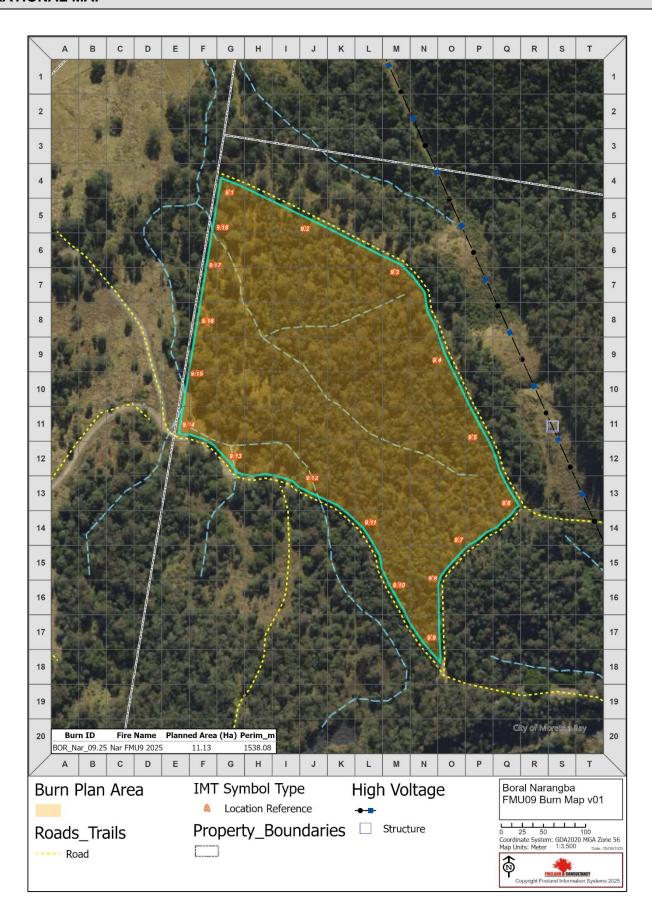


Table 5: Control line and Contingency control line prep tasks **Assessment** (Describe the current and desired Fireline standards that are required to deliver the planned activity) **Current control line Desired control line** Name of the control line Location Work type Mitigation - Task/Constraint Timing standard Select from pulldown list. standard Select from pulldown list. Must be a task or constraint. Select from pulldown list. Select from pulldown list. Any tasks to be transferred to the Burn Prep Works Order section. Other Other Example: Northern control line Pt A - D on Ops Map Control line - slashing Task - Slash to 4m width. > 7 days before burn





OPERATIONAL MAP



Appendix E

Weed Management Plan





Weed Management Plan - Summary Offset Management Plan - Stage 1

Raynbird Road, Narangba Prepared for Boral Resources Pty Ltd



Weed Management Plan – Stage One Offsets

Objectives and Management Measures

Completion criteria for the Stage One offset site are as follows:

- WONS reduced to less than 10% of baseline levels.
- Baseline weed mapping will be conducted before the weed removal program is initiated. Weed mapping is then to be conducted annually and reported in the Annual Compliance Report (ACR).
- Weed management within Stage 1 offset areas will commence within 12 months of the action commencing with remnant status to be achieved after 10 years.

Management measures for the control of WONS, specifically Lantana will include:

- All identified WONS will be treated within 12 months of the commencement of each stage of clearing for the quarry extension.
- A suitably qualified bush regeneration contractor will be engaged to undertake the necessary weed control.
- Control of infestations will utilise techniques that avoid disturbance to surrounding areas.
- WONS, and other high-risk weeds, will be monitored annually until they are not detected, at which point monitoring will be carried out every 2 years until they are consistently identified at densities less than 10% of the baseline infestation.

Timeline of OMP processes

| Timing | Event | |
|------------------------------------|--|--|
| 6-months post-commencement | Specific treatment techniques developed | |
| | Weed Management Plan developed | |
| Within 12-months post-commencement | All identified WONS will be treated within 12 months of the commencement of each stage of clearing for the quarry extension | |
| Annually | WONS, and other high-risk weeds, will be monitored annually until they are not observed, at which point monitoring will be carried out every 2 years until they are consistently identified at densities less than 10% of the baseline infestation | |
| Conord | Control of infestations will utilise techniques that avoid disturbance to surrounding areas. | |
| General | A suitably qualified bush regeneration contractor will be engaged to undertake the necessary weed control. | |

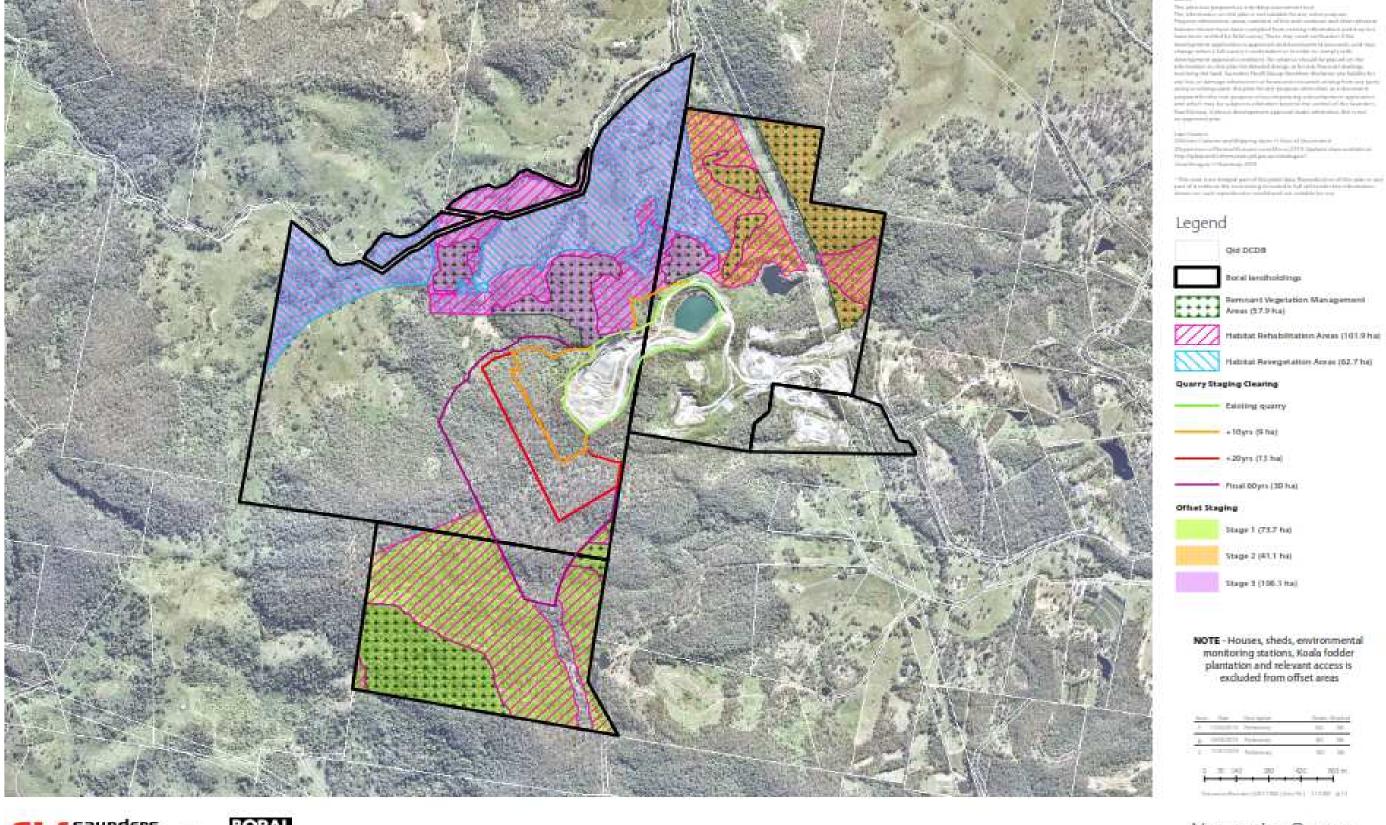
Weed Management

Stage one of the OMP is the first of a three-stage offset, located almost entirely on Lot 93 on SP193378. Stage one of the offsets site accounts for approximately 73.7 ha of this total offset area.

The Offsets Management strategy (OMS) which underpinned the OMP, outlined a detailed approach to the management of weeds, specifically Weeds of National Significance (WONS) onsite, involving strategic division of habitat into three management categories. Stage One of the Offsets site contains two of these categories including (1) habitat rehabilitation and (2) remnant vegetation management. As detailed in the OMS, the areas that are identified as suitable for habitat rehabilitation are those that are not mapped as remnant vegetation, but still retain relatively intact vegetation with high potential to return to quality habitat. These areas in their existing state are degraded due to weed invasion or past land uses requiring clearing of the ground layer.

Remnant vegetation management areas are those identified as remnant vegetation are those areas of existing vegetation mapped under the *Vegetation Management Act 1999* (VMA) as remnant. These areas were observed as having the potential to experience some disturbance from surrounding land uses, understorey clearing and/or weed invasion. Remnant vegetation management areas account for 57.9 ha of the total offset site and habitat rehabilitation management areas account for 15.8ha across Stage One (**Figure 1**). **Figure 2** presents the baseline weed mapping results for the Stage One offsets area, mapped in September 2020. This Plan provides recommendations for guiding weed management onsite in regard to the achieving the objectives set out in the Offsets Management Plan. Details on the roles and responsibilities, monitoring processes and risk management supporting weed management within the offsets area are provided for reference within this onsite management plan.

Figure 1 – Narangba Offsets site Stages and habitat management









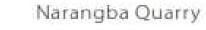


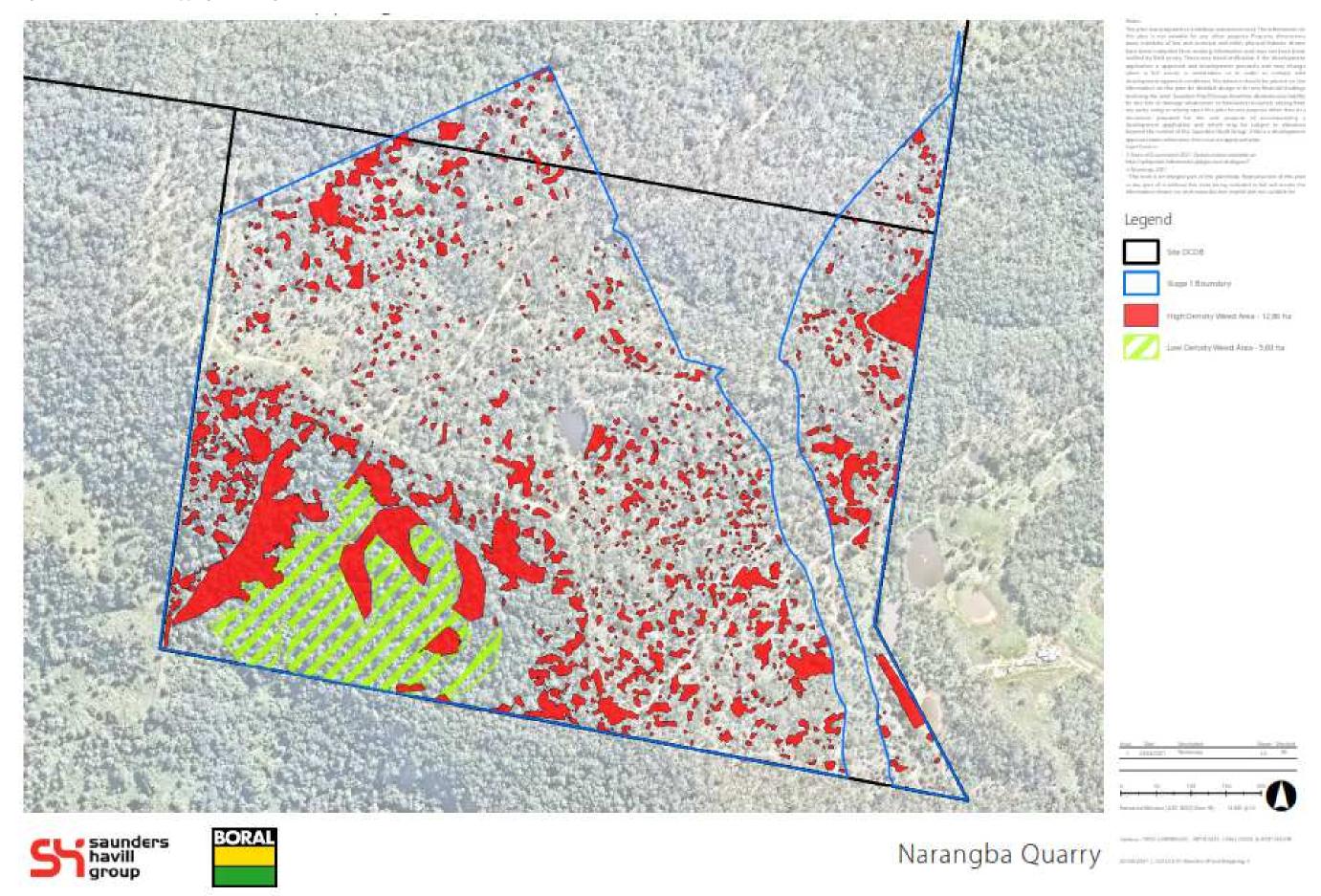




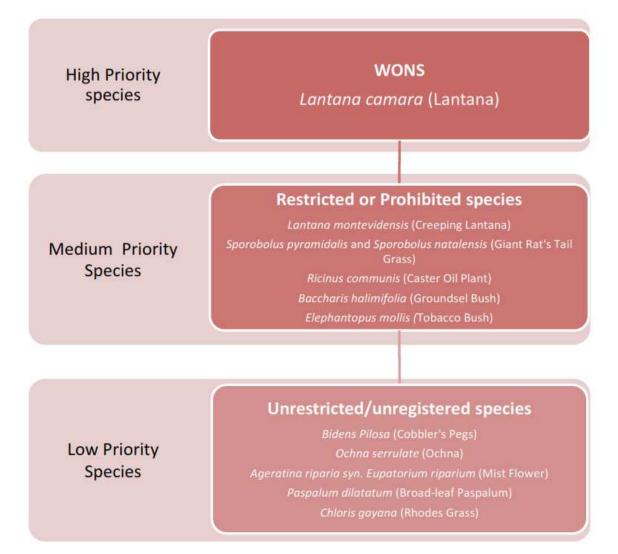




Figure 2 – Baseline Weed Mapping across Stage One



Hierarchy of weed management – Stage One



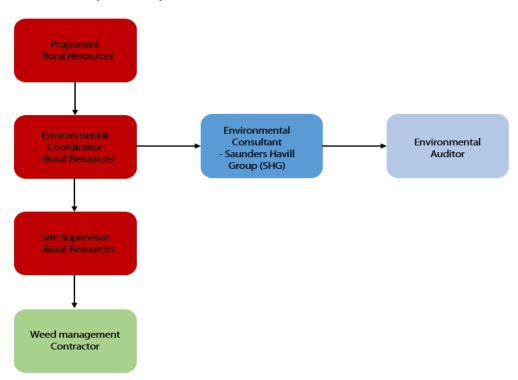
Control methods to be utilised within the offset site for treatment of Lantana camara

| Infestation extent | Physical | Control Option Mechanical | Chemical | |
|---|--------------|---|--|--|
| Low infestation (individual plants, small area) | Hand removal | Not suitable | Spot spray or cut and paste small infestations | |
| Moderate infestation (Multiple plants, moderate total area) | Not suitable | Slasher, brush cutter, hedger, stick- rake, etc. Increased disturbance from this method will likely result in | More significant infestations may need to utilise high | |
| High infestation (Many plants, large area) | Not suitable | significant germination of target weed species. Follow up treatment would be required. Not suitable for areas susceptible to erosion such as waterways or steep slopes. | volume spraving devices to | |

Control methods for weed management

| Control method | Process | Use | Advantages | Disadvantages |
|---|---|---|---|---|
| Cut and paste | technique involves cutting the stem at ground level and then paint the open cut with suitable herbicide. Herbicide needs to be applied within 15 seconds of the cut or risk the plant not absorbing the chemical. | woody weeds (Lantana, Ochna, etc) and vines that are actively growing and not stressed. | accurate application of herbicide to target species reducing the likelihood of impacting native species in proximity | time consuming/labour intensive |
| Foliar spray (High volume and spot spray | herbicide is diluted and sprayed over the target species which is absorbed through the leaves | used for grasses, herbs and shrubs (up to shoulder height) that are actively growing and not stressed | utilises a high-volume spray (such as a quick spray) for use on large infestations or using handheld applicators for more targeted spraying (spot spray). can be quickly applied to multiple weed species, grasses, shrubs, herbs, etc. allowing for larger areas to be treated | off target damage can be high particularly if weather conditions are not optimal. good coverage of herbicide on the target species can be difficult if the infestation is particularly dense or foliage is not at optimal growth stage |
| Cut and spray regrowth | involves large infestations of lantana being slashed, either by machinery or hand help power tolls (brush cutter, hedger, etc) and then left to regrow. Regrowth and new shoots are then foliar sprayed | Large infestations of woody weeds (e.g. lantana) | Minimises the area requiring spray treatment (allowing for more direct application) while simultaneously improving the rate of uptake by the plant and leading to more successful treatment | Timing of follow-up spray - If sprayed prematurely then uptake of herbicide will be insufficient to kill target weeds. If time between initial treatment and follow up is too long, then the infestation will return to its original form |

Chain of Responsibility



Identified Roles

| | | | Contact ph./details |
|--------------------------------|-------------------|---------|---------------------------|
| Role | Nominated Person | Company | |
| | | | 0401 896 115 |
| Proponent/ Project Coordinator | Paul West | Boral | |
| | | | 0466 405 885 |
| Environmental Coordinator | Matthew Allan | Boral | |
| | DAWE Compliance | | |
| Administering Authority | Monitoring Branch | DAWE | EPBCMonitoring@awe.gov.au |
| | | | TBA |
| Site Supervisor | Quarry Manager | Boral | |
| | | | TBA |
| Site Contractor | TBA | TBA | |
| | | | TBA |
| Environmental Auditor | TBA | TBA | |

Roles and Responsibilities

| Role | Responsibilities | Timeframe |
|-------------------------------|--|--|
| Proponent/Project Coordinator | Liaise regularly with Environmental coordinator | As required, ongoing. |
| Proponent/Project Coordinator | Ensure ACR is published to Boral website by 12th August | Annually |
| | Coordinate and liaise with Environmental Consultant | As required, ongoing. |
| | Oversee onsite work and ensure sufficient data is available to achieve annual compliance | As required, ongoing. |
| Environmental Coordinator | Identify onsite non-compliance events for early intervention | As required, ongoing. |
| | Provide data for annual compliance to environmental consultant | As required, ongoing. |
| | Report non-compliance events within 2 business days of detection | As required |
| | Coordinate weed management contractor | Annually, ongoing. |
| | Ensure periodic inspection of site works is completed | As required, ongoing. |
| Site Supervisor | Ensure sufficient data is collected to inform compliance reporting | As required, ongoing. |
| | Liaise with Environmental Coordinator regularly | As required, ongoing. |
| | Identify onsite non-compliance events for early intervention | As required, ongoing. |
| Site Contractor | Complete weed management (specifically WONS) works as specified under the OMP and as directed by Site Supervisor and Environmental Coordinator | Annually, ongoing. |
| | | Restoration practices to be suitable documented and data and photographs provided to Site Supervisor |
| Environmental Consultant | Coordinate annual EPBC monitoring (weed presence and density, comparison with previous years results) | Annually until WONS presence not recorded, then every 2-years subsequently |
| | Prepare and coordinate EPBC annual compliance reporting | Published to Boral website by 12th August each year |
| Environmental Auditor | Complete auditing of requirements conditioned under the EPBC approval | As required |

Monitoring

Monitoring of weed infestations across the Stage One offsets area will be conducted annually by suitably qualified ecologists to provide data for systematic analysis required to determine the ongoing success of the WMP under the OMP. Monitoring will be conducted in **September** each year to ensure that the timing remains consistent and aligns with the baseline assessment. This annual monitoring will be conducted until WONS are not observed, at which point monitoring will be carried out every 2 years until WONS are consistently identified at densities less than 10% of the baseline infestation.

Periodic visual inspections of treated locations will take place following management onsite. Inspections will occur at the discretion of Boral, with the aim of minimising chance of regrowth following initial treatment. Details will be provided by onsite weed management contractors, to Boral's environmental coordinator who will initiate plans for supplementary weed control/management during suitable conditions, where necessary. The following measures will be utilised during monitoring events:

- GPS locate the presence of weeds either via a GPS waypoint or where a large weed infestation is present, create a GPS polyline and walk the extent of the infestation.
- On a field datasheet, detail the time of year of the monitoring event, list of observed WONS, photo location and direction and notes of any notable positive and/or negative changes in weed density and coverage.
- Carry the previous year's weed survey mapping, field datasheet and photos for noting changes in weed infestations and densities.
- Transfer GPS data to the necessary programs to generate weed survey mapping extent and collate all data in excel spreadsheets and save all digital photos to file for ongoing monitoring purposes.

Corrective Actions

• Where unplanned fires or flooding occurs during the monitoring interval, any negative impacts to ecological score will be noted and compared to unaffected monitoring sites of previously the same quality and resulting potential weed infestations following disturbance will be managed to ensure the weed control completion criteria are achieved.

Risk Assessment

A risk assessment of the potential contraindicative events which may occur during implementation of the WMP are outlined in the Table below. These events detail issues which may arise, negatively affecting the improvement of habitat onsite, through the increase or encroachment of WONS.

| Objective | Contraindicative event | Likelihood | Consequence | Risk level | Trigger | Contingency | Associated events |
|--|---|------------|-------------|------------|---|--|---|
| Reduce WONS density to ≤10% baseline levels | Some WONS not treated throughout Stage One | Possible | High | Moderate | Annual Compliance Monitoring (weed density mapping) indicates an increase in weed density across Stage One | Audit and revision of weed management plan and consider increase in frequency of weed management. Revision of seasonal timing and frequency of weed treatment across Stage One. | Annual weed monitoring |
| Reduce WONS density to ≤10% baseline levels | Increase in Weeds of National Significance (WoNS) infestation impacting on ecological function and habitat quality score improvement across Stage One | Unlikely | Minor | Low | Annual Compliance Monitoring indicates a decrease or lack of increase in habitat score specifically due to WONS component | Cause of WONS infestation identified (e.g. external infestation present with seed travelling along drainages). Remediation actions - mapping of new infestation, revision of current control methods, revision and reassessment of frequency of current monitoring actions | Annual weed monitoring |
| Reduce WONS density to ≤10% baseline levels | Infrequent follow up to weed treatment leading to increase in density of WONS | Possible | High | Medium | Mismanagement of weed treatment timing | Audit and revision of weed management plan and consider increase in frequency of weed management. Revision of seasonal timing and frequency of weed treatment across Stage One. | Monthly contractor updates; Annual compliance report; annual weed mapping |
| educe WONS density to ≤10% baseline levels | High rainfall year causing site inaccessibility and leading to extended exclusion of weed treatment across site | Possible | Minor | Moderate | Exclusion from Stage One for greater than 2 months of the year | Revision of timeline of management across the year. Renew objective to achieve 80% WONS treatment across site by end of October each year. | Monthly contractor updates |

Appendix F

Vertebrate Pest Management Plan



Vertebrate Pest Management Plan – Stage One Offsets

Objectives and Management Measures

Management measures for the control of feral or unwanted domestic dogs across the offset area include:

- Baseline and ongoing pest monitoring, including motion activated cameras and scat analysis (where necessary), to identify evidence of feral or unwanted dogs (and other pest species):
 - o Development of a property wide feral animal management program specifying techniques (e.g., trapping, baiting, shooting) and ongoing monitoring methods (including datasheets) to be utilised, to be completed within 12 months of commencement of the action.
- Where practical and appropriate, participate cooperatively in pest management planning and implementation with local land managers (i.e., government departments, local governments, and utility providers) to ensure effective pest management in the locality of the offset area.
- Installation of appropriate signage informing the area is under feral control.

As the management of feral and pest species can only be achieved at a landscape level, management will be carried out over the entire offset area within 12 months of commencing Stage 1 of the quarry extension.

Annual pest monitoring and outcomes will be detailed in the ACR. The ACR will contain details on detected pests, control efforts, and total trapped/baited individuals during the given management period and identified trends of the population of pest animals within the offset area.

Timeline of OMP processes

| Timing | Event |
|------------------------|--|
| | Baseline monitoring of entire offset site completed |
| Within 12-months post- | Management will be carried out over the entire offset area within 12 months of commencing Stage 1 of the quarry extension |
| commencement | Development of a property wide feral animal management program specifying techniques (e.g., trapping, baiting, shooting) and ongoing monitoring methods (including datasheets) to be utilised |
| Annually | Vertebrate pests (specifically wild dogs and koala predators), will be monitored annually until they are not observed for three consecutive years. |
| | Installation of appropriate signage informing the area is under feral control |
| | Where practical and appropriate, participate cooperatively in pest management planning and implementation with local land managers |
| General | GPSs will be used to record the location of pest animals present during regular monitoring and incidental detection. Feral dogs, cats and foxes are of high concern due to their known impact on koala and potential presence via notable tracks or scats will be recorded |
| General | Where pest animal presence is detected, targeted trapping and baiting programs will be implemented on completion of the monitoring program |
| | Field datasheet detailing the time of the monitoring event, observed pest animal scats or tracks, photo location and notes of any evidence of positive and/or negative changes in pest animal occurrence |
| | Comparison of current and previous year's data, with photographic changes in pest animal occurrences |
| | Transfer GPS data to spatial data programs to generate pest animal occurrences and collate all data in excel spreadsheets and save all digital photos to file for ongoing monitoring and reporting purposes. |

1

Vertebrate Pest Management

Stage one of the OMP is the first of a three-stage offset, located almost entirely on Lot 93 on SP193378. Stage one of the offsets site accounts for approximately 73.7 ha of this total offset area. As the management of feral and pest species can only be achieved at a landscape level, management will be carried out over the entire offset area within 12 months of commencing Stage 1 of the quarry extension. This management will be ongoing until completion criteria detailed within the OMP are met under the EPBC approval conditions, being that dogs or evidence of dog presence must not be detected on the offset area for a period of three years.

The control and prevention of invasive animal incursions is to be undertaken in accordance with the relevant legislation (such as the Commonwealth *Biosecurity (Consequential Amendments and Transitional Provisions) Act 2015* and the Queensland *Biosecurity Act 2014*) incorporating control of pest animals by suitably qualified pest management contractors using approved ethical methods. Applicable legislation is detailed within the full VPMP. Any required hazardous materials must be handled and stored in accordance with the material's safety data sheets and the Approved Code of Practice for the Storage and Handling of Dangerous Goods. Pest animal control is to be undertaken in a humane manner with details of all annual pest monitoring reported and included in the Annual Compliance Report (ACR).

Baseline monitoring with remote-triggered cameras was undertaken in 2020, with **Figure 1** detailing the locations of cameras. **Figure 2** shows the proposed updated monitoring site locations, using adaptive management (or "learning by doing"), which are recommended to increase detections of pests onsite from 2021 onwards in consideration of low detection rates in 2020.

This Plan provides recommendations for guiding vertebrate pest management onsite in regard to the achieving the objectives set out in the Offsets Management Plan. Details on the roles and responsibilities, monitoring processes and risk management supporting vertebrate pest management within the offsets area are also included within this onsite reference plan.

Figure 1 – Camera monitoring sites across offsets site in 2020

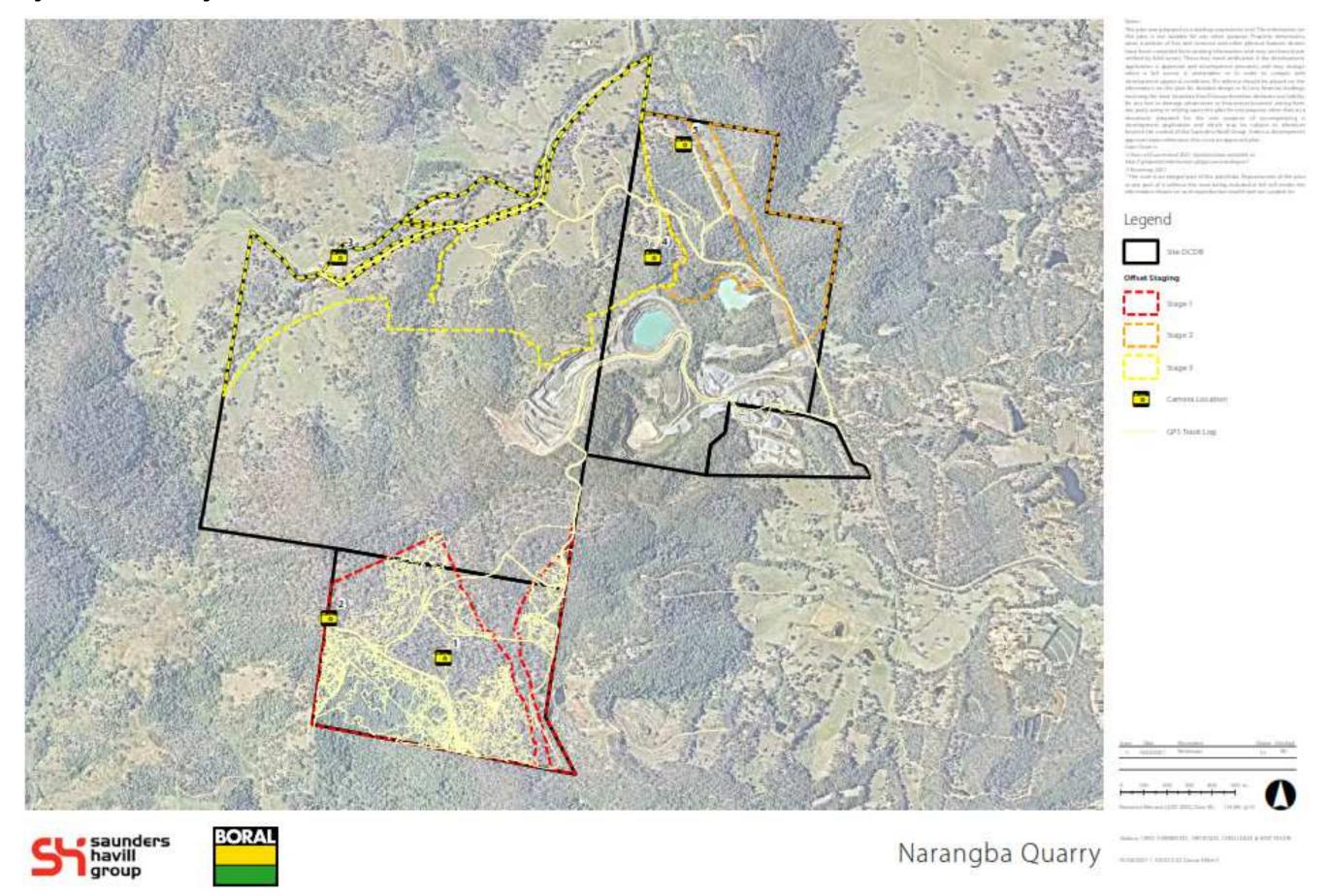
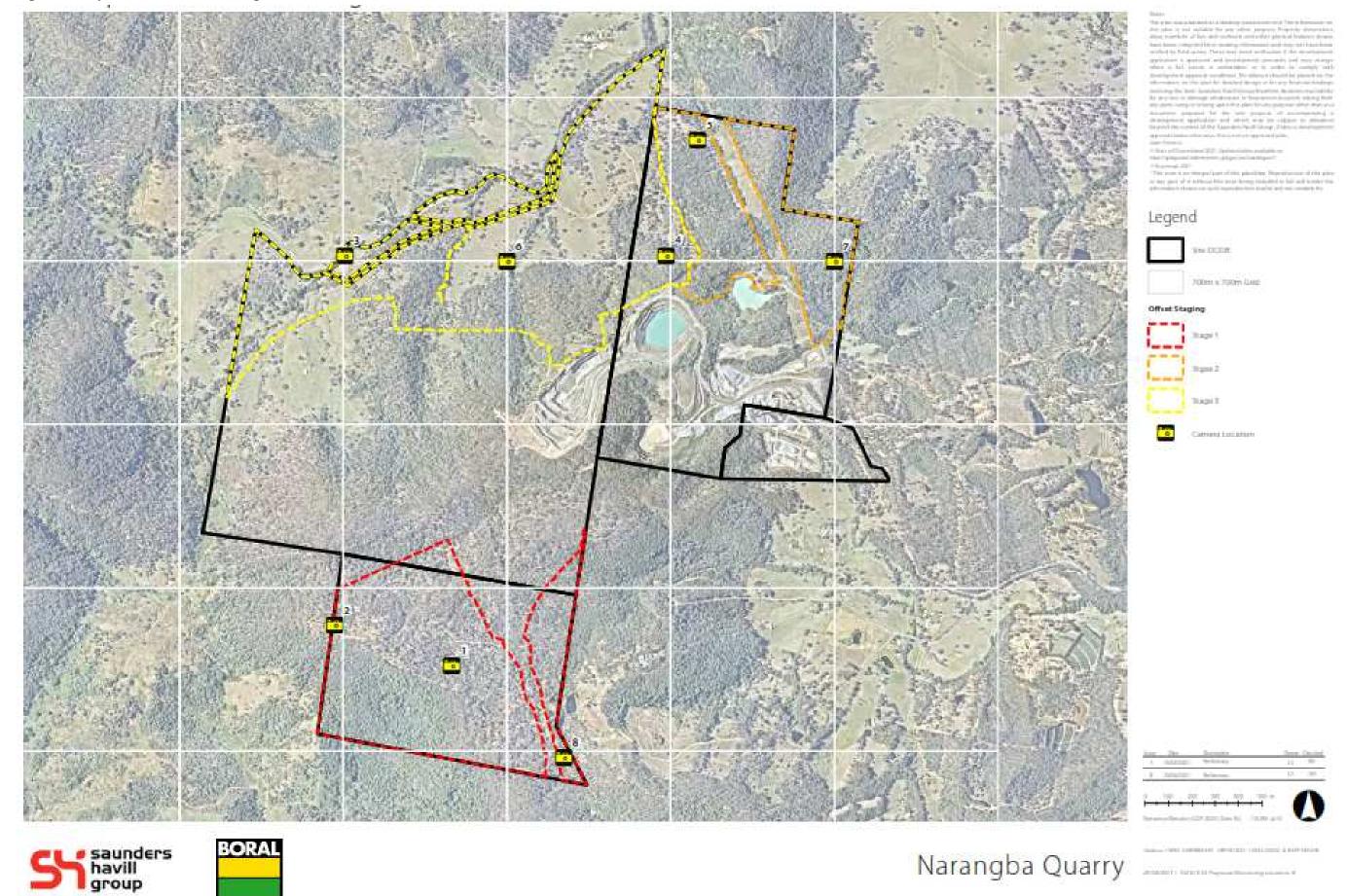


Figure 2. Proposed camera monitoring sites across offsets site – 2021 onwards



Hierarchy of vertebrate pest management – Stage One

Feral or Unwanted Domestic Dogs Canis familiaris **High Priority** species Feral dogs are identified as a key threatening process to the Vulnerable Koala **Red Fox and Feral Cat Medium Priority** Vulpes vulpes and Felis catus **Species** Both red foxes and feral cats are identified as key threatening process under the EPBC Act. **Red Deer and Feral Pig Low Priority Species** Both of these species have the potential to degrade habitat, spread

Recommended control methods for pest species

| Scientific Name | Common Name | Baiting | Fencing | Shooting | Trapping |
|-----------------|-------------|---------|---------|----------|----------|
| Canis familaris | Feral Dog | Y | Υ | Υ | Y |
| Cervus elaphus | Red Deer | N | Υ | Υ | Υ |
| Felis catus | Feral Cat | Υ | Υ | Υ | Υ |
| Sus scrofa | Feral Pig | Υ | Υ | Υ | Υ |
| Vulpes vulpes | Red Fox | Υ | Υ | Υ | Υ |

^{*}Y – Recommended, N- not recommended by the Queensland Government.

Feral species confirmed on-site

| Scientific Name | Common Name | Biosecurity Act 2014 Category |
|------------------|-------------|-------------------------------|
| Canis familiaris | Feral Dog | 3, 4, 6 |
| Cervus elaphus | Red Deer | 3, 4, 6 |
| Felis catus | Feral Cat | 3, 4, 6 |
| Sus scrofa | Feral Pig | 3, 4, 6 |
| Vulpes vulpes | Red Fox | 3, 4, 5, 6 |

Vertebrate Pest Management Methods

| Control method | Process | Advantages | Disadvantages |
|----------------|--|--|--|
| Baiting | It is important that when the baits are placed on-site that they reduce the likelihood of non-target species ingesting the bait. There are distance requirements and exclusions zones when using 1080 poison. Baits are not to be laid: - Within 5m of fenced boundary; - Within 20m of permanent or flowing water bodies; - Within 50m of the centreline of a declared road; - Within 150m of a dwelling. | cost effective, effective in reducing dog numbers. | can affect non-target species, requires qualified, trained officer to deploy and manage program onsite, primary threat to spot-tailed quoll. |
| Fencing | Fencing of areas of habitat where target pest species can be excluded effectively from an area. | highly effective where fully fenced areas can be installed and maintained. | labour-intensive and costly. |

| Control method | Process | Advantages | Disadvantages |
|----------------|--|--|---|
| Trapping | Specialised traps are set in the evening and checked after dawn the following morning, with any target pest species trapped, subsequently destroyed. | Species specific, with traps specialised to target different species and animal sizes. Non-target animals can be subsequently released unharmed. | labour-intensive and costly. |
| Shooting | vertebrate pests are typically trapped and shot onsite, or in large or remote locations, aerial shooting techniques may be utilised. | Can be effective when used in conjunction with other trapping methods. | health and safety concerns, highly trained and licensed officer required to conduct shooting program. |

Trapping

Trapping is considered an effective tool when managing smaller pest animal populations, however, is very labour intensive. Department of Agriculture and Fisheries (DAF) recommended two types of traps for the management of feral dogs, with leg-hold traps now considered inhumane and less selective. Traps should be strategically placed along known wild dog pads or activity areas, with potential lures having potential to increase the effectiveness of traps. Traps must be set at the end of each day and checked the following morning. **This method is highly recommended for use on the Narangba Offsets site**.

Foot-hold traps:

Foot-hold traps are selected to match the foot size of the selected animal. The trap is designed to catch the animal across the tougher padded area of the foot. The objective of foot-hold traps is to hold the animal firmly at the foot but reduced the potential damage. Jaws of foot-holds can be rubber padded, offset, or laminated. These traps are considered effective in the control of feral dogs while reducing non-target animals captures and limiting animal welfare conditions.

Collarum[™] neck restraint:

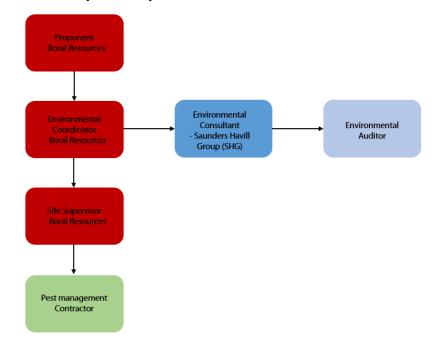
The Collarum™ neck restraint is also a recommended trap by DAF, however, requires a high level of training. While this type of trap is considered humane, the public may not be able to distinguish it from a snare, causing public concern.

The chosen contractor will implement a Predator Trapping Program at the Boral Offset Site. The trapping schedule will incorporate the following:

- Deployment of camera traps onsite to determine optimal trap placement;
- Subsequent trap deployment and monitoring of traps;
- Provision of pest management data to Boral representatives (Environmental Coordinator)

Data collated during the trapping events will be used to compare against previous numbers of vertebrate pests and reported within the Annual Compliance Report.

Chain of Responsibility



Identified Roles

| | Nominated | | Contact ph./details |
|---------------------------|-----------------|---------|---------------------------|
| Role | Person | Company | |
| Proponent/ Project | | | 0401 896 115 |
| Coordinator | Paul West | Boral | |
| Environmental Coordinator | Matthew Allan | Boral | 0466 405 885 |
| | DAWE Compliance | | |
| | Monitoring | | EPBCMonitoring@awe.gov.au |
| Administering Authority | Branch | DAWE | |
| Site Supervisor | Quarry Manager | Boral | TBA |
| Site Contractor | ТВА | TBA | TBA |
| Environmental Auditor | ТВА | TBA | TBA |

Roles and Responsibilities

| Roles and Responsibilities | | |
|----------------------------------|---|---|
| Role | Responsibilities | Timeframe |
| Proponent/Project Coordinator | Liaise regularly with Environmental coordinator | As required, ongoing. |
| r roponent/ r roject coordinator | Ensure ACR is published to Boral website by 12th August | Annually |
| | Coordinate and liaise with Environmental Consultant | As required, ongoing. |
| | Oversee onsite work and ensure sufficient data is available to achieve annual compliance | As required, ongoing. |
| Environmental Coordinator | Identify onsite non-compliance events for early intervention | As required, ongoing. |
| | Provide data for annual compliance to environmental consultant | As required, ongoing. |
| | Report non-compliance events within 2 business days of detection | As required |
| | Coordinate pest management contractor | Annually, ongoing. |
| | Ensure periodic inspection of site works is completed | As required, ongoing. |
| Site Supervisor | Ensure sufficient data is collected to inform compliance reporting | As required, ongoing. |
| | Liaise with Environmental Coordinator regularly | As required, ongoing. |
| | Identify onsite non-compliance events for early intervention | As required, ongoing. |
| Site Contractor | Complete vertebrate pest management (specifically dogs, but in accordance with the hierarchy of pests) works as specified under the OMP | Annually, ongoing. |
| | and as directed by Site Supervisor and Environmental Coordinator | Pest Management practices to be suitably documented and data, report and photographs provided to Site Supervisor. |
| Environmental Consultant | Coordinate annual EPBC monitoring (vertebrate pest presence, comparison with previous year's results) | Annually until vertebrate pest presence not detected for three years. |
| | Prepare and coordinate EPBC annual compliance reporting | Published to Boral website by 12th August each year |
| Environmental Auditor | Complete auditing of requirements conditioned under the EPBC approval | As required |

Monitoring

To achieve optimal results, camera trap locations should be used repeatedly in a systematic approach, installed at the same locations during annual monitoring events. During baseline assessments (2020), the camera traps (except for one), were successful in identifying both native and introduced fauna species.

To analyse the camera trap locations, a square grid was overlayed on the offset site (approximately 700 x 700m). This provides rough indication of mean home range of wild dogs, as home range for the species has been found to vary substantially with differing environmental factors.

During the baseline studies, five cameras were installed however, using the adaptive management framework and aligning with the grid-based approach, an additional three cameras will be installed across the offsets site in subsequent years, potentially one within each offsets stage. For locations for ongoing monitoring across the site refer to **Figure 2**.

The following pest animal monitoring methodology will be implemented:

- GPSs will be used to record the location of pest animals present during regular monitoring and incidental detection. Feral dogs, cats and foxes are of high concern due to their known impact on koala and potential presence via notable tracks or scats will be recorded.
- Field datasheet detailing the time of the monitoring event, observed pest animal scats or tracks, photo location and notes of any evidence of positive and/or negative changes in pest animal occurrence.
- Comparison of current and previous year's data, with photographic changes in pest animal occurrences.

- Transfer GPS data to spatial data programs to generate pest animal occurrences and collate all data in excel spreadsheets and save all digital photos to file for ongoing monitoring and reporting purposes.
- Where pest animal presence is detected, targeted trapping and baiting programs will be implemented on completion of the monitoring program.

Risk Assessment

A risk assessment of the potential contraindicative events which may occur during implementation of the VPMP are outlined in the Table below. These events detail issues which may arise, negatively affecting the improvement of habitat for koala onsite, through the increase of known vertebrate pests onsite, or the establishment of new pests.

| Objective | Contraindicative event | Likelihood | Consequence | Risk level | Trigger | Contingency | Associated events |
|---|--|------------|-------------|---------------|---|---|--|
| Remove vertebrate pests (specifically koala predators – wild dogs and foxes) from offsets site | Annual pest management delayed due to weather or unpredicted event | Possible | Minor | Moderate | Annual Compliance Monitoring (pest monitoring) indicates an increase in detection rates of vertebrate pests across the site. | Audit and revision of vertebrate pest management plan and consider change in timing of pest management. Revision of seasonal timing and frequency of pest monitoring and management events. | Annual vertebrate pest monitoring; onsite reports of vertebrate pests |
| Decrease and remove vertebrate pests (specifically koala predators – wild dogs and foxes) from offsets site | Increase in detection rates of vertebrate pest species impacting on ecological function and habitat quality score improvement across Stage One. | Unlikely | Minor | Low | Annual Compliance Monitoring indicates an increase in detection rates of vertebrate pests across the offsets site. | Reassessment of frequency of current monitoring and pest management events | Annual vertebrate pest monitoring; onsite reports of vertebrate pests |
| Remove vertebrate pests (specifically koala predators – wild dogs and foxes) from offsets site | Infrequent follow up to pest trapping event due to unpredicted weather event, leading to animals remaining in traps for more than one night. | Unlikely | High | Medium | Exclusion from one or more trap site locations for more than a single night, due to unpredicted weather event. | Revision of timeline of management across the year to exclude wet and/or storm season. Review protocol and process with pest management contractor. | Onsite weather updates; short- and long-term weather forecasts; pest contractor report |
| Remove vertebrate pests (specifically koala predators – wild dogs and foxes) from offsets site | High rainfall year causing site inaccessibility and leading to extended exclusion of vertebrate pest management across site | Possible | Minor | Medium | Exclusion from one or more offsets Stages for greater than 3 months of the year | Revision of timeline of management across the year. Renew objective to achieve pest monitoring and management outside of wet season October each year. | Onsite weather updates |

Appendix G

Bushfire Management Plan





Bushfire management plan

Narangba Quarry | Queensland | Offset sites Prepared for Boral Resources (Queensland) Pty Limited | 28 July 2021

Land and Environment Consultants Pty Ltd
13 Pedwell Place
Birkdale Queensland 4159
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Bushfire management plan

R. Janssen.

Final

Report 21041 | Boral Resources (Queensland) Pty Limited | 28 July 2021

Prepared by Robert Janssen

Position Managing principal

Signature

Date 28 July 2021

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at or under the times and conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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Document control

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| Final | 28 July 2021 | R. Janssen | LEC |



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Appendix

Appendix 1 Offset area

Appendix 2 Offset area staging

Appendix 3 Recommended fire regimes

1 Introduction

Land and Environment Consultants Pty Ltd (**LEC**) was engaged by Boral Resources (Queensland) Pty Limited (**Boral**) to prepare a bushfire management plan (**BMP**) for the offset area at Narangba Quarry, located at Raynbird Road, Narangba (**the site**).

The offset area was established as a condition of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) approval for the Narangba Quarry expansion project. The Narangba Quarry expansion project was referred under the EPBC Act on 11 November 2014 and subsequently declared a 'controlled action' requiring assessment by 'preliminary documentation' pursuant to section 18 and 18A (listed threatened species and communities) (EPBC Act reference 2014/7351). The trigger for the controlled action was due to potential impacts on *Phascolarctos cinereus* (the Koala), which is listed as 'vulnerable' under the EPBC Act.

Condition 3a of the EPBC Act approval required the preparation of an offset management plan (**OMP**) for the offset area (SHG 2019).

Management action 4 of the OMP requires a BMP to be prepared for the offset area 'for the purpose of protecting the offset area from high intensity fires as well as for conducting ecological burns with the aim to enhance biodiversity in line with the Queensland regional ecosystem description database fire management guidelines'.

1.1 Scope

The scope of this BMP is limited to the offset area on the offset area plan at Appendix 1.

The OMP requires the BMP to identify management measures for the control of bushfires across the offset area including:

- Installation of firebreaks and access tracks.
- Annual inspection and maintenance of firebreaks and access tracks.
- Prescribed burning undertaken in consultation with, and under the guidance of the Queensland Rural Fire Brigade (RFB) and in compliance with the Queensland Fire and Emergency Services Act 1990 (FES Act).
- Use of domestic livestock or other methods to reduce fuel loads in the event that a fire risk professional, eg representative of the Queensland Rural Fire Brigade, and a suitably qualified person deem that conditions are not suitable for an ecological burn and that grazing is appropriate to manage a high level of fire risk. Level of risk (and any need to repeat this grazing cycle) is to be reassessed by the aforementioned professional following the grazing event.

In addition to the above requirements, the OMP requires landscape level bushfire management to be carried out over the entire offset area within 12 months of commencing stage 1 of the Narangba Quarry expansion project and for the BMP to include a mechanism for regular review of fire breaks, access tracks, fuel loads and outcomes of prescribed burns or other management techniques such as use of domestic livestock.

This BMP does not supersede the bushfire hazard assessment and management plan that was prepared for the Narangba Quarry expansion project (BPA 2019) which provides a range of bushfire protection measures that are required for compliance with the bushfire hazard area performance or

acceptable outcomes of the Moreton Bay Regional Council Planning Scheme 2016 Extractive industry zone code.

1.2 Legislative requirements

Bushfire management operations by Boral and Boral's contractors are governed by the FES Act.

Section 62 of the FES Act requires Boral and/or Boral's contractors to apply to a fire warden (orally or in writing) for a permit to light a fire on any land.

Section 67 of the FES Act requires Boral and Boral's contractors to take all reasonable steps to extinguish or control unauthorised fire on the site and as soon as practical, report the existence and location of the fire to a fire officer or a fire warden.

Bushfire management operations could be subject to other Commonwealth and Queensland legislation relating to environment, heritage and workplace health and safety, including:

- EPBC Act;
- Commonwealth Aboriginal and Torres Strait Island Heritage Protection Act 1984;
- Queensland Mining and Quarrying Safety and Health Act 1999;
- Queensland Planning Act 2017;
- Queensland Nature Conservation Act 1992;
- Queensland Vegetation Management Act 1999 (VM Act); and
- Queensland Heritage Act 1992.

1.3 Boral's requirements

Bushfire management measures are to be performed in accordance with Boral's health, safety and environment policies, procedures and standards, including:

- Health Safety Environment and Quality Standard Emergency Preparedness and Response;
- Site Emergency Response Plan; and
- Site Induction.

1.4 Responsibility

Boral is responsible for the implementation of this BMP.

1.5 Review

To mitigate the risk of unplanned fire causing degradation of habitat quality in the offset area, the OMP requires the management measures in this BMP to be reviewed in the event of an unplanned fire adversely impacting the offset area.

'Adverse impacts' are not defined in the OMP but could mean, for example, management areas that are to be protected from fire are burnt and areas of active rehabilitation or revegetation are damaged.

1.6 BMP outline

This BMP includes the following sections:

- An introduction (this section).
- Description of the offset area.
- Description of the bushfire characteristics of the site.
- Bushfire management strategy.
- Works program.
- Review and evaluation.

2 Offset area

This chapter describes the offset area which includes remnant vegetation and areas requiring either rehabilitation or revegetation to provide suitable habitat for Koala usage.

The location of management areas and staging of rehabilitation or revegetation works is identified on the staging plan at Appendix 2.

2.1 Offset management areas

The OMP identifies 3 management areas across the offset area which are explained as follows:

- Remnant vegetation management area areas identified as remnant vegetation are those areas
 of existing vegetation mapped under the VM Act as remnant. These areas were observed as having
 potential to still be disturbed from surrounding land uses, understorey clearing and/or weed
 invasion.
- Habitat rehabilitation area areas identified as being currently degraded in some way through disturbance and/or weed invasion. Works are to be undertaken within these zones to improve the condition including weed management, natural regeneration, seeding and infill planting as required.
- Habitat revegetation area areas identified as being mostly devoid of vegetation, where grazing
 and other agricultural practices occurred in the past, or are currently occurring. These areas
 require significant planting and on-ground works to establish vegetation communities reflective of
 the nearby remnant vegetation.

2.2 Offset area staging

The OMP identifies that the offset area will be delivered in 3 stages which coincide with the staging of the Narangba Quarry expansion project. Each stage of the offset area, ie stages 1-3, is shown on the staging plan at Appendix 2 and will indicatively commence in 10 years, 20 years and 40+ years, respectively. Notwithstanding the staging of the offset area, bushfire management will be carried out over the entire offset area.

2.3 Koala habitat improvement

Management measures in this BMP must support key actions of the OMP that will improve koala habitat values within the offset area. Considerations for the BMP in relation to the key actions of the OMP include:

- Remnant vegetation management areas management measures will not result in the clearing of remnant vegetation, for example, new fire trails or fire breaks will not be established in remnant vegetation and grazing as a method of fuel hazard reduction will not occur.
- Habitat rehabilitation areas management measures will be tailored to compliment investments into assisted regeneration including the seeding or planting of endemic canopy tree species.
 Grazing as a method of fuel hazard reduction will not occur in habitat rehabilitation areas.
- Habitation revegetation areas management measures will seek to protect habitat revegetation
 areas from fire unless fire is being used as a tool to benefit natural regeneration. Grazing as a
 method of fuel hazard reduction will not occur in areas where revegetation has occurred.

2.4 Risk assessment

The OMP includes a risk assessment which identifies that 'unplanned fire causing degradation of habitat quality through the loss of native plant diversity and abundance within the offset area' is a medium level risk to 'maintaining or improving habitat quality' in the offset area.

3 Bushfire analysis

This chapter provides an analysis of the bushfire characteristics of the offset area.

3.1 Vegetation

Appendix 3 provides a summary of recommended fire regimes for the vegetation (QG 2021) and potential fuel loads (QFES 2019) for vegetation which occurs within the offset area based on regional ecosystem (**RE**) classifications.

REs which occurs within the offset area are shown on Figure 3.1 and recommended fire intervals for REs are shown on Figure 3.2.

3.2 Fire weather

The fire danger season at the Narangba Quarry starts in July, peaks in September and begins to fall in November, but will remain elevated until consistent summer rainfall occurs. Typically, the worst fire weather conditions will be experienced during the fire danger season when the wind direction is from the west.

Forest Fire Danger Index (**FFDI**) values represent the chance of a fire starting, its rate of spread, its intensity and the difficulty of suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long and short-term drought effects. The severe fire weather map in Catalyst (QFES 2021) indicates the 5% annual exceedance probability FFDI for Narangba Quarry is 56.

Fire danger ratings (FDR) are based on the forecast weather conditions, ie FFDI, and other risk factors and give advice about the level of bushfire threat on a day. An FFDI of 56 correlates with a 'severe' FDR and will be associated with hot, dry and windy conditions. If a fire starts and takes hold under these conditions, it will be difficult to control in the remnant vegetation management areas and habitat rehabilitation areas.

3.3 Landscape slope

The landscape slope of the offset area is varied and ranges from plains to steep hills. In general, remnant vegetation management areas are aligned with steep hills, habitat rehabilitation areas are aligned with undulating land and rolling hills and habitat revegetation areas are aligned with plains and undulating land.

Landscape slope has a significant effect on the rate of spread and intensity of a fire, whereby a fire burning on 10° of upslope will have double the rate of spread and intensity of a fire burning on flat land.

3.4 Bushfire hazard areas

In Queensland, bushfire hazard areas are identified on the basis of landscape slope, vegetation type (as a surrogate for fuel load) and fire weather severity (Leonard et al., 2014). Spatial data for each of these attributes is used to calculate potential fire-line intensity, which is the basis for delineating bushfire hazard areas as follows:

• Very high potential fire line intensity > 40,000 kilowatts/m (**kW/m**).

- High potential fire line intensity 20,000-40,000 kW/m.
- Medium potential fire line intensity 4,000-20,000 kW/m.
- Non bushfire hazard areas < 4,000kW/m.

The bushfire prone area map for the offset area is presented in Figure 3.3 and indicates that remnant vegetation management areas are high to very high potential bushfire intensity areas (except for areas of RE 12.11.10/12.11.3 and RE 12.12.16), habitat rehabilitation areas are medium to high potential bushfire intensity areas and habitat revegetation areas are a non-bushfire prone hazard class.

3.5 Fire history

The fire history map in Catalyst (QFES 2021) indicates that there have been no fires within the offset area during the past 10 years. Therefore, habitat values of remnant vegetation management areas and habitat rehabilitation areas are potentially at risk due to inappropriate fire regimes, ie to long since the last fire.

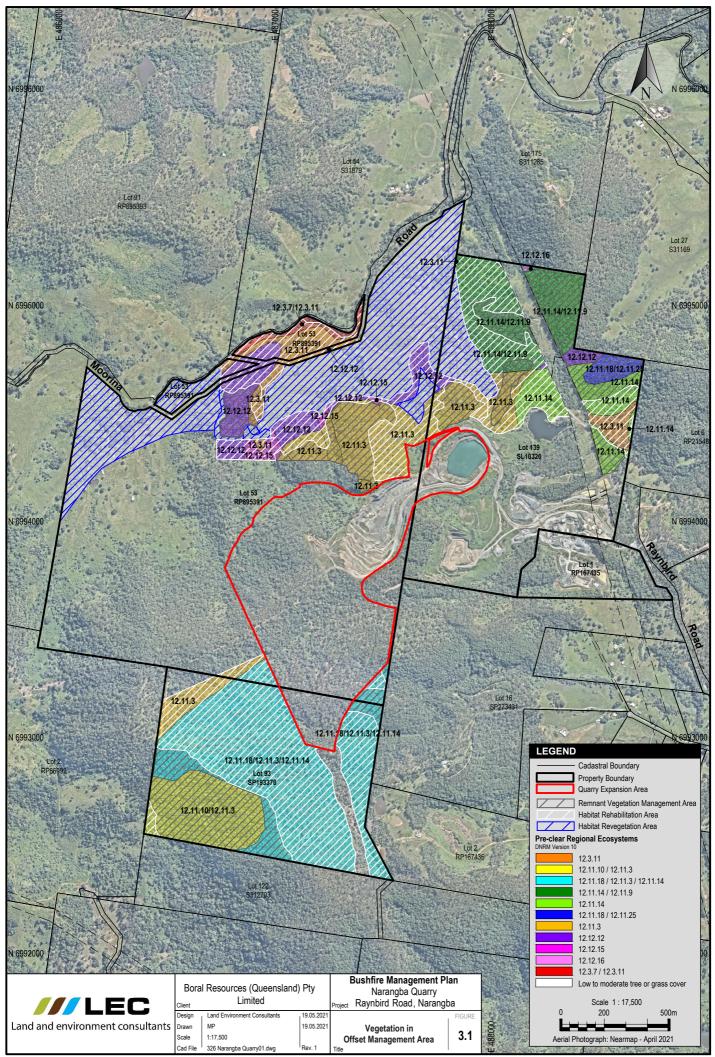
3.6 Vehicle access for bushfire management

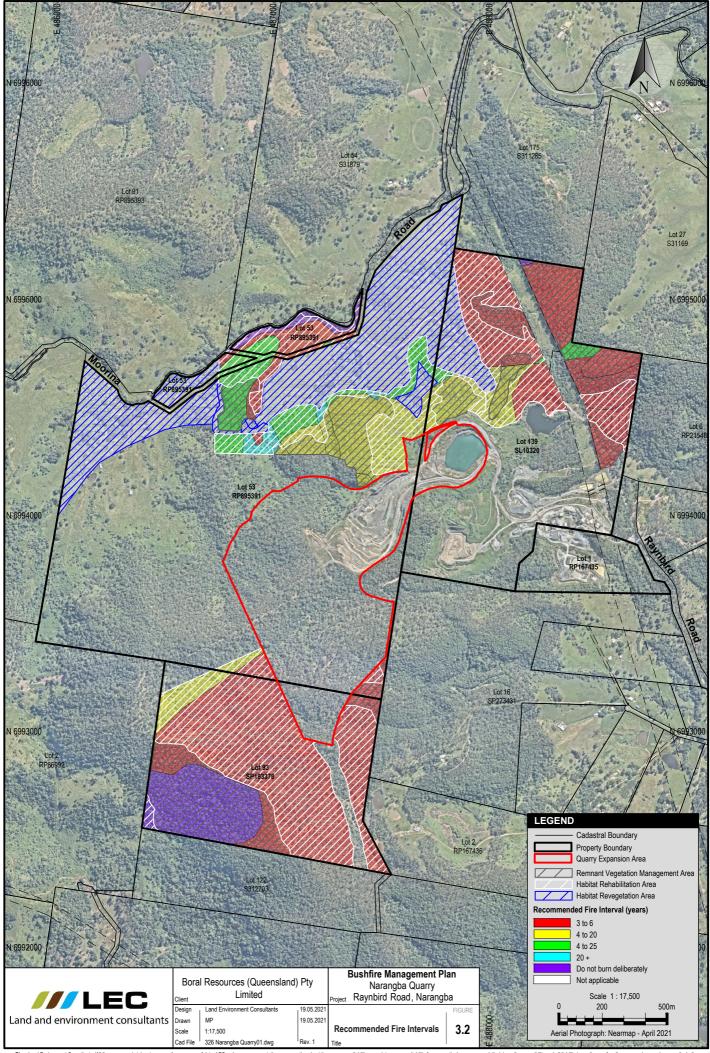
Vehicle access tracks within the offset area are trafficable by 4wd vehicles.

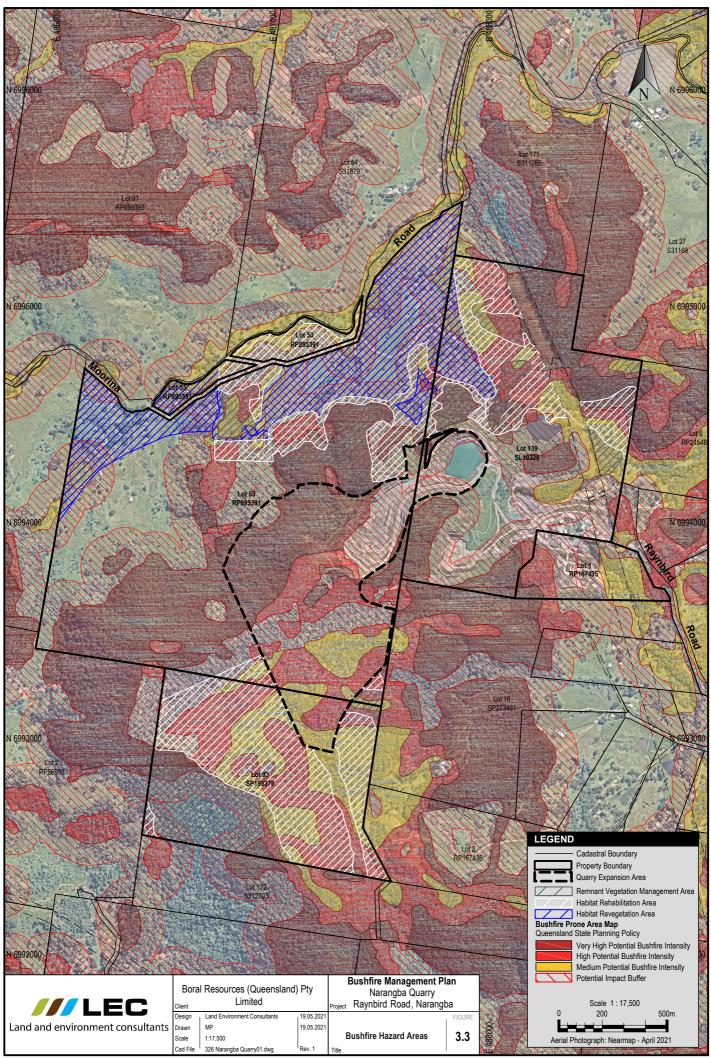
There is no vehicle access to the offset area on the east side of the Powerlink easement or along the offset area boundary in the south-west corner of the site.

3.7 Water supply for bushfire management

There are numerous water supply points within the site which could be used for bushfire management.







4 Bushfire management strategy

This chapter provides the bushfire management strategy for the 3 management areas within the offset area.

4.1 Fire breaks

Fire breaks will be established and maintained around rehabilitation works within the habitat revegetation areas.

Fire breaks are low fuel hazard areas that are cleared and maintained to slow or stop the progress of a fire, or to perform burning operations. They will be 6-10 metres (**m**) wide and established by clearing woody vegetation and slashing or ploughing. There width can be reduced to 4 m over a short distances, ie nominally 20 m in length, where site features prevent a 6-10 m wide fire break from being established. Subsequent maintenance will be required annually in May or June, ie prior to the annual fire danger season .

Fire breaks will continue to be maintained around rehabilitation works within the habitat revegetation areas until the ecological consultant undertaking the habitat quality monitoring advises Boral that the rehabilitation works have reached a state of maturity which can tolerate fire.

4.2 Access tracks

Access tracks shown on Figure 4.1 and located outside of the operational areas of the quarry, will be inspected and maintained annually in May/June or as otherwise required to implement bushfire management operations. Maintenance will seek to ensure that access tracks are easily trafficable by 4wd vehicles and safe to perform bushfire management operations.

Access track maintenance will include:

- slashing tall grass within the vehicle surface and 1 m wide verges (relevant to access tracks located in the grassy plains of the site);
- clearing woody regrowth and fallen trees and branches from the vehicle surface and 1 m wide verges;
- removing low overhanging branches which are < 4 m above the vehicle surface; and
- repairing the vehicle surface when its condition hinders efficient access and egress, eg washouts, etc.

4.3 Prescribed burning

To assist with assigning bushfire management actions, the offset area has been divided into fire management units (**FMUs**) which are shown on Figure 4.1 and described in Table 4.1. Where possible, the boundaries of FMUs have been aligned with existing access tracks which will provide containment lines for performing prescribed burns. As a result, some of the FMUs cover land outside of the offset area but all are within the boundaries of the site.

Prescribed burning will be undertaken to achieve fuel hazard reduction, ecological outcomes and to assist with rehabilitation or restoration works. However, it should be noted that prescribed burning is not recommended for all FMUs. Where prescribed burning is recommended for an FMU, it must be

planned to support key actions of the OMP which are outlined in Chapter 2 and based on the recommended fire regimes for regional ecosystems which are provided in Appendix 3.

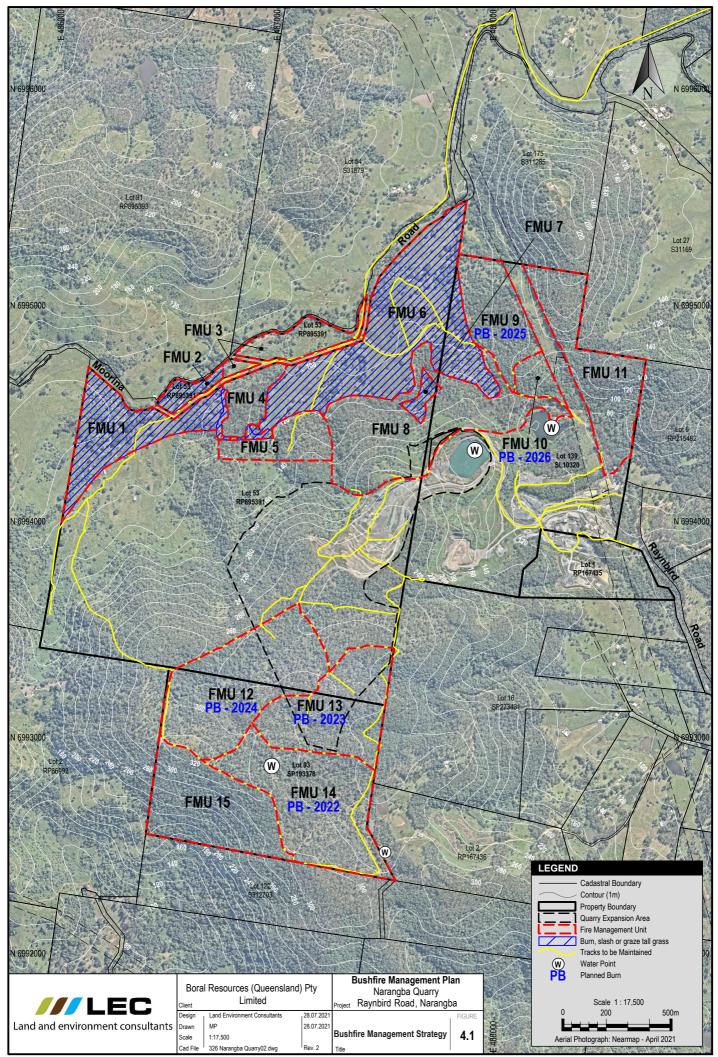


Table 4.1 Fire management units

| FMU | Offset management areas | Regional ecosystems | Notes |
|-------|--|---|---|
| FMU 1 | Habitat revegetation area | N/A | Prescribed burning is permissible for fuel hazard reduction and to assist with the implementation of rehabilitation or restoration works. |
| | | | Fuel hazard reduction should occur if there are uniform levels of tall grass cover, ie a subjective assessment which determines that there is greater than 30 % coverage of grass which is over 0.5 m tall. |
| | | | Revegetation works within FMU 1 must be protected from fire. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 2 | Habitat revegetation area | N/A | Prescribed burning is permissible for fuel hazard reduction and to assist with the implementation of rehabilitation or restoration works. |
| | | | Fuel hazard reduction should occur if there are uniform levels of tall grass cover, ie a subjective assessment which determines that there is greater than 30 % coverage of grass which is over 0.5 m tall. |
| | | | FMU 3 and revegetation works within FMU 2 must be protected from fire. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 3 | Habitat rehabilitation area | RE 12.3.7/12.3.11, RE 12.3.11 and RE 12.12.12 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | | | Rehabilitation or restoration works in FMU 3 must be protected from fire. |
| | | | Recommended fire intervals range from 3-6 years for RE 12.3.11 and 4-25 years for RE 12.12.12. |
| | | | Do not deliberately burn vegetation fringing the watercourse along the north boundary of FMU 3, ie RE 12.3.7/12.3.11. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 4 | Remnant vegetation management area and habitat | RE 12.3.11 and RE 12.12.12 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | rehabilitation area | | Rehabilitation or restoration works in FMU 4 must be protected from fire. |
| | | | Recommended fire intervals range from 3-6 years for RE 12.3.11 and 4-25 years for RE 12.12.12. |

| FMU | Offset management areas | Regional ecosystems | Notes |
|-------|--|---|---|
| FMU 5 | Remnant vegetation management area and habitat | RE 12.3.11, RE 12.11.3, RE 12.12.12 and RE 12.12.15 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | rehabilitation area | | Rehabilitation or restoration works in FMU 5 must be protected from fire. |
| | | | Recommended fire intervals range from 3-6 years for RE 12.3.11, 4-20 years for RE 12.11.3, 4-25 years for RE 12.12.12 and 20+ years for RE 12.12.15. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 6 | Habitat revegetation area | N/A | Prescribed burning is permissible for fuel hazard reduction and to assist with the implementation of rehabilitation or restoration works. |
| | | | Fuel hazard reduction should occur if there are uniform levels of tall grass cover, ie a subjective assessment which determines that there is greater than 30 % coverage of grass which is over 0.5 m tall. |
| | | | Revegetation works within FMU 6 must be protected from fire. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 7 | Habitat revegetation area | N/A | Prescribed burning is permissible for fuel hazard reduction and to assist with the implementation of rehabilitation or restoration works; otherwise allow to burn with FMU 7 if rehabilitation or restoration works have not commenced. |
| | | | If restoration works have commenced in FMU 7, they must be protected from fire. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 8 | Remnant vegetation management area and habitat | RE 12.11.3, RE 12.11.14, RE 12.12.12 and RE 12.12.15 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | rehabilitation area | | Rehabilitation or restoration works in FMU 8 must be protected from fire. |
| | | | Recommended fire intervals range from 3-6 year for RE 12.11.14, 4-20 years for RE 12.11.3, 4-25 years for RE 12.12.12 and 20+ years for RE 12.12.15. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 9 | Remnant vegetation management area and habitat | RE 12.11.14/12.11.9 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | rehabilitation area | | Rehabilitation or restoration works in FMU 9 must be protected from fire. |
| | | | The recommended fire interval for RE 12.11.14/12.11.9 is 3-6 years. |

| FMU | Offset management areas | Regional ecosystems | Notes |
|--------|--|---|--|
| FMU 10 | Remnant vegetation management area and habitat | RE 12.11.14, RE 12.11.14/12.11.9 and RE 12.11.3 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | rehabilitation area | | Rehabilitation or restoration works in FMU 10 must be protected from fire. |
| | | | Recommended fire intervals range from 3-6 years for RE 12.11.14 and RE 12.11.14/12.11.9 and 4-20 years for RE 12.11.3. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 11 | Remnant vegetation management area and habitat | RE 12.11.14/12.11.9, RE 12.11.18/12.11.5, RE 12.11.14, RE 12.3.11 and | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | rehabilitation area | RE 12.12.12 | Rehabilitation or restoration works in FMU 11 must be protected from fire. |
| | | | There are no access tracks that can be used to perform burning operations. Therefore, it is recommended that FMU 11 is allowed to burn with the adjoining landscape if site neighbours in this area wish to undertake a prescribed burn. |
| | | | Recommended fire intervals range from 3-6 years for RE 12.11.14, RE 12.11.14/12.11.9, RE 12.11.18/12.11.25 and RE 12.3.11 and 4-25 years for RE 12.12.12. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 12 | Habitat rehabilitation area | RE 12.11.3 and RE 12.11.18/12.11.3/12.11.14 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | | | Rehabilitation or restoration works in FMU 12 must be protected from fire. |
| | | | Recommended fire intervals range from 3-6 years for RE 12.11.18/12.11.3/12.11.14 and 4-20 years for RE 12.11.3. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 13 | Remnant vegetation management area and habitat | RE 12.11.18/12.11.3/12.11.14 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | rehabilitation area | | Rehabilitation or restoration works in FMU 13 must be protected from fire. |
| | | | Prescribed burn planning in FMU 13 must include a note advising that FMU 15 is sensitive to fire and requires protection from unplanned ignitions. |
| | | | The recommended fire interval for RE 12.11.18/12.11.3/12.11.14 is 3-6 years. |

| FMU | Offset management areas | Regional ecosystems | Notes |
|--------|---|---|--|
| FMU 14 | Habitat rehabilitation area | RE 12.11.18/12.11.3/12.11.14 | Prescribed burning is permissible for ecological outcomes and to assist with the implementation of rehabilitation or restoration works. |
| | | | Rehabilitation or restoration works in FMU 14 must be protected from fire. |
| | | | Prescribed burn planning in FMU 14 must include a note advising that FMU 15 is sensitive to fire and requires protection from unplanned ignitions. |
| | | | The recommended fire interval for RE 12.11.18/12.11.3/12.11.14 is 3-6 years. |
| FMU | Offset management areas | Regional ecosystems | Notes |
| FMU 15 | Remnant vegetation management area and habitat rehabilitation area | RE 12.11.10/12.11.3 and RE 12.11.18/12.11.3/12.11.14 | Prescribed burning is not permitted in FMU 15. The majority of FMU 15 consists of fire sensitive vegetation being RE 12.11.10/12.11.3. |

The OMP requires 'prescribed burning to be undertaken in consultation with, and under the guidance of the RFB and in compliance with the FES Act. The RFB is a voluntary organisation and there is no guarantee that RFB volunteers will be available for consultation or to provide guidance and resources for the implementation of prescribed burns. Therefore, reliance on the RFB is considered a risk to the implementation of this BMP and the improvement of koala habitat values within the offset area.

To mitigate the abovementioned risk, Boral will engage a contractor (**burn contractor**) to plan and implement the prescribed burns and hazard reduction burns recommended in this BMP. To comply with the OMP requirements, the burn contractor will be responsible for liaising with the RFB regarding the planning and implementation of prescribed burns and for inviting the RFB to participate in prescribed burn operations.

If Boral is unable to engage a suitable burn contractor, they should seek the assistance of the RFB to plan and implement the prescribed burns and hazard reduction burns recommended in this BMP.

4.3.1 Burn plan

The burn contractor (or the RFB and Boral) will prepare a burn plan for each prescribed burn or hazard reduction burn. The burn plan will be reviewed and approved by Boral prior to its implementation. A burn plan should contain the following elements (as a minimum):

- a statement of burn objectives;
- an operations map of the area;
- prescriptions or limits for fuel and weather conditions;
- ignition patterns and techniques;
- identification of assets and values within the burn area that require protection and measures for their protection;
- resourcing requirements;
- health and safety issues (for burn personal, quarry staff and the public);

- notifications; and
- guidance on implementation.

4.3.2 Compliance with the FES Act

The burn contractor (or Boral) will also be responsible for obtaining a permit to light a fire from a fire warden and for taking all reasonable steps to contain a prescribed burn or hazard reduction burn within containment lines (as detailed in the burn plan).

The information in the burn plan will be required by the fire warden to issue a permit to light a fire.

4.3.3 Appraisal

The burn contractor will prepare a brief appraisal report for each prescribed burn or hazard reduction burn which includes a map of the burn area and evaluates the outcomes of the burn against the planned objectives, lessons learnt and continuous improvement.

If the burn is done by the RFB then Boral must retain the details of the burn, eg location, date, objectives, burn intensity, weather conditions, etc.

4.4 Other methods of hazard reduction

Other methods of hazard reduction will be applied to grassland areas within habitat revegetation areas, ie FMU 1-2 and FMU 6-7, if prescribed burning for fuel hazard reduction is not feasible.

4.4.1 Mechanical hazard reduction

Mechanical hazard reduction, ie slashing or ploughing, is the preferred strategy for fuel hazard reduction within habitat revegetation areas that have uniform levels of tall grass cover. It can also be used within revegetation work areas if required.

4.4.2 Use of domestic livestock for hazard reduction

Domestic livestock will only be used for fuel hazard reduction within parts of the habitat revegetation areas that have no revegetation works.

Temporary fencing will be used to contain domestic livestock and they will be monitored and immediately removed from remnant vegetation management areas, habitat rehabilitation areas and revegetation work areas within habitat revegetation areas if they escape.

The use of domestic livestock for fuel hazard reduction is a relatively slow process when compared to hazard reduction burning or mechanical hazard reduction. If domestic livestock are to be used for fuel hazard reduction, they must be released into the target area several months prior to the onset of the annual fire danger season in late July.

4.5 Monitoring

4.5.1 Fuel hazard monitoring

Fuel hazard monitoring will be undertaken within habitat revegetation areas, ie FMU 1-2 and FMU 6-7, once consistent summer rainfall has occurred. It will determine if these FMUs have uniform levels

of tall grass cover and require fuel hazard reduction. As stated in Table 4.1, uniform levels of tall grass cover means greater than 30 % coverage of grass which is over 0.5 m tall.

Fuel hazard monitoring is not required within remnant vegetation management areas and habitat rehabilitation areas, ie FMU 3-5 and FMU 8-15, for the purpose of identifying areas requiring prescribed burns. Prescribed burning within these FMUs will be based on the recommended fire regimes for the vegetation communities which occur within them and fire history data. Notwithstanding, the burn contractor will undertake fuel hazard monitoring within these FMUs when preparing a burn plan.

4.5.2 Fire history records

Boral will maintain records of prescribed burns, hazard reduction burns (including burn contractor appraisals) and unplanned fires within the offset area and broader site. This information can then be consolidated for review and preparation of the next BMP in 5 years.

Information required includes:

- spatial data of the fireground including areas within containment lines which did not burn;
- type of fire, eg prescribed burn, unplanned fire, etc
- year of fire;
- season;
- intensity, eg low, medium, high, etc;
- strategy, eg aim of burn, ignition strategy; and
- issues.

5 Works program

The works program for the implementation of this BMP is provided in Table 5.1 and will be updated after 5 years, ie 2026.

Table 5.1 Works program

| Action | Responsibility | Timing/frequency | Notes |
|--|----------------|--|--|
| Administration | | | |
| Engage a burn contractor or the RFB to implement prescribed burns and hazard reduction burns scheduled in this works program. | Boral | October 2021 | The successful burn contractor should have demonstrated experience implementing prescribed burning programs, eg prescribed burning programs within Department of Defence training areas. |
| Review works program | Boral | In the event of an unplanned fire adversely impacting the offset area or 2026. | Refer to Chapter 6. |
| Fire breaks and access tracks | | | |
| Establish and maintain fire breaks around rehabilitation works within | Boral | Annually in May/June or as otherwise required to | Refer to Section 4.1 for fire break standards. |

| Action | Responsibility | Timing/frequency | Notes |
|---|----------------------------------|--|---|
| the habitat revegetation areas. | | implement the bushfire management operations. | |
| Inspect and maintain access tracks located outside of the operational areas of the quarry. | Boral | Annually in May/June or as otherwise required to implement bushfire management operations. | Refer to Section 4.2 for access track standards. |
| Prescribed burns in remnant | vegetation mana | gement areas and habitat rehal | bilitation areas |
| Prescribed burn FMU 14 | Burn contractor | 2022 | Prescription for prescribed burn should be in accordance with recommended fire regimes for RE 12.11.18/12.11.3/12.11.14 in Appendix 3. |
| Prescribed burn FMU 13 | Burn contractor | 2023 | Prescription for prescribed burn should be in accordance with recommended fire regimes for RE 12.11.18/12.11.3/12.11.14 in Appendix 3. |
| Prescribed burn FMU 12 | Burn contractor | 2024 | Prescription for prescribed burn should be in accordance with recommended fire regimes for RE 12.11.3 and RE 12.11.18/12.11.3/12.11.14 in Appendix 3. |
| Prescribed burn FMU 9 | Burn contractor | 2025 | Prescription for prescribed burn should be in accordance with recommended fire regimes for RE 12.11.14/12.11.9 in Appendix 3. |
| Prescribed burn FMU 10 | Burn contractor | 2026 | Prescription for prescribed burn should be in accordance with recommended fire regimes for RE 12.11.14, RE 12.11.14/12.11.9 and RE 12.11.3 in Appendix 3. |
| Delivery of burn plan to Boral for review and approval (unless the burn is to be done by the RFB). | Burn contractor | Annually, December | Refer to Section 4.3.1 for burn plan specifications |
| Consultation with local RFB regarding implementation of burn plan. | Burn contractor | Annually, January. | - |
| Obtain permit to light a fire. | Burn contractor | Annually, prior to prescribed burn. | A copy of the approved burn plan is to be provided to the fire warden. |
| Deliver appraisal report and prescribed burn data. | Burn contractor | Annually, within 8 weeks of the prescribed burn. | Refer to Section 4.3.3 for requirements. |
| Hazard reduction in habitat i | revegetation area | 75 | |
| Implement fuel hazard reduction within areas of FMU 1-2 and FMU 6-7 that | Burn contractor (burns) or | March-June or as otherwise required to implement | Refer to Section 4.3 for hazard reduction burn specifications and |

| Action | Responsibility | Timing/frequency | Notes |
|---|---|--|--|
| have uniform levels of tall grass cover. | Boral (mechanical or domestic livestock) | bushfire management operations. | Section 4.4 for use of mechanical or domestic livestock methods. |
| Monitoring | | | |
| Fuel hazard monitoring within habitat revegetation areas FMU 1-2 and FMU 6-7. | Boral | Annually, after consistent summer rainfall | Refer to Section 4.5.1 for monitoring method. |
| Maintain a fire history records | Boral | From January, 2022 | Refer to Section 4.5.2 for fire history database specifications |

6 Review and evaluation

Review and evaluation of this BMP will be undertaken in the event of an unplanned fire adversely impacting the offset area or after 5 years, ie 2026.

The review and evaluation will consider the appraisal of prescribed burns, analysis of fire history data and annual compliance reports for the offset area which will detail the outcomes and recommendations of weed management, feral and pest fauna species management and koala habitat monitoring within the offset area.

References

Bushfire Planning Australia (BPA) 2019, *Bushfire Hazard Assessment and Management Plan – Boral Quarry Plant Upgrade, Narangba Quarry*, reference 1939, prepared for Boral Resources (QLD) Pty Limited, 1 October 2019

Leonard J, Newnham G, Opie K, and Blanchi R (2014). *A new methodology for state-wide mapping of bushfire prone areas in Queensland*, CSIRO, Australia, 2014

Queensland Fire and Emergency Services (QFES) 2019, Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience – Bushfire', 2019

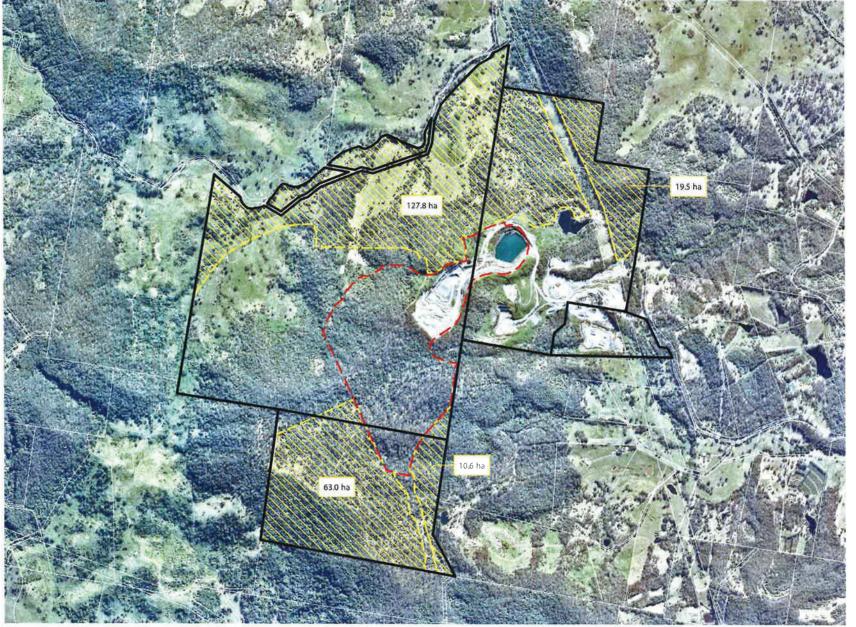
Queensland Fire and Emergency Services (QFES) 2021, *Catalyst – online mapping system*, accessed online at https://catalyst.qfes.qld.gov.au/, May 2021

Queensland Government 2021, *Regional ecosystem descriptions*, accessed online at https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions, 12 May 2021

Saunders Havill Group (SHG) 2019, Offset Management Plan – Narangba Quarry Expansion, EPBC 2014/7351, job number 7139, prepared for Boral Resources (QLD) Pty Limited, 6 November 2019

Appendix 1 Offset area

1. Offset Area



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Legend

Qld DCDB



Boral landholdings



Impact site



Amended offset area (220:9ha)

NOTE - Houses, sheds, environmental monitoring stations, Koala fodder plantation and relevant access is excluded from offset areas

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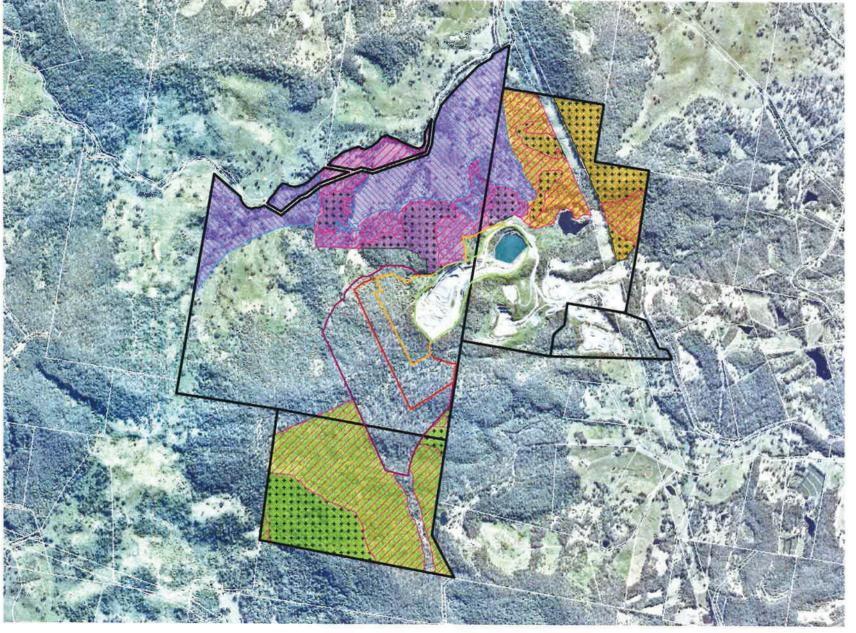




Narangba Quarry

Appendix 2 Offset area staging

3. Offset Area - Staging



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Qld DCDB

Boral landholdings

Remnant Vegetation Management Areas (57.9 ha)

Habitat Rehabilitation Areas (101.9 ha)

Habitat Revegetation Areas (62.7 ha)

Quarry Staging Clearing

Existing quarry

+10yrs (9 ha)

+20yrs (13 ha)

Final 60yrs (30 ha)

Offset Staging

Stage 1 (73,7 ha)

Stage 2 (41,1 ha)

Stage 3 (106,1 ha)

NOTE - Houses, sheds, environmental monitoring stations, Koala fodder plantation and relevant access is excluded from offset areas.

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Appendix 3 Recommended fire regimes

| Vegetation | Recommended fire regime ^{1, 2} | Potential fuel load (t/ha) ³ | Notes |
|--|---|--|--|
| F | Remnant vegetation management area (Remnant vegetation) | | |
| Regional Ecosystem (RE) 12.3.11 <i>Eucalyptus tereticornis</i> +/- E. <i>siderophloia, Corymbia intermedia</i> open forest on alluvial plains | SEASON: Summer to late-autumn | 16 | Does not occur in combination with other REs |
| usually near coast | INTENSITY: Low | | With other NES |
| (RE 12.3.11) | INTERVAL: 3-6 years | | |
| | STRATEGY: Aim to burn 40-60% of any given area. Spot ignition in cooler or moister periods encourages mosaics. | | |
| | ISSUES: Control of weeds is a major focus of planned burning in most areas. Maintain ground litter and fallen timber habitats by | | |
| | burning only with sufficient soil moisture. Burning should aim to produce fine scale mosaics of unburnt areas. | | |
| RE 12.11.3 Eucalyptus siderophloia, E. propinqua +/- E. | SEASON: Summer to winter | 24.2 | Occurs on its own and sub- |
| microcorys, Lophostemon confertus, Corymbia intermedia, E. acmenoides open forest on metamorphics +/- interbedded volcanics (RE 12.11.3) | INTENSITY: Plan for low to moderate. Unplanned occasional high intensity wildfire will occur. | | dominant in other RE combinations |
| | INTERVAL: 4-8 years maintains a healthy grassy system. 8-20 years for shrubby elements of understorey. | | |
| | STRATEGY: Aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey with open understorey of predominantly non-rainforest species). Any moist sclerophyll that is relatively open with a mixture of grasses and shrubs should be a priority for fire management to retain RE structure. | | |
| | ISSUES: Frequent fire is needed to maintain understorey integrity, keeping more mesic species low in the profile of the understorey so that other species can compete. A grassy system is especially important for species such as the eastern bristlebird and its habitat. It is essential that wildfires are not the sole | | |

| Vegetation | Recommended fire regime ^{1, 2} | Potential fuel load (t/ha) ³ | Notes |
|--|---|--|-------------------------------|
| | source of fire in this ecosystem. High intensity fires occur periodically through time, however frequent low to moderate intensity fires will create the disturbance required to keep the understorey diverse. A follow-up burn soon after a high intensity wildfire can be considered to reduce germinating mesic species. This 'of concern' RE may contain a high number of rare and threatened plant species, eg <i>Acomis acoma, Corchorus cunninghamii, Marsdenia coronata</i> and <i>Sophora fraseri</i> , which require appropriate fire management. | | |
| RE 12.11.9 Eucalyptus tereticornis subsp. tereticornis or E. | SEASON: Summer to winter | 24.2 | Occurs sub-dominant in one RE |
| tereticornis subsp. basaltica open forest on metamorphics +/- interbedded volcanics, usually on ridges, crests and upper slopes (RE 12.11.9) | INTENSITY: Plan for low to moderate. Unplanned occasional high intensity wildfire will occur. | | combination |
| | INTERVAL: 4-8 years maintains a healthy grassy system. 8-20 years for shrubby elements of understorey. | | |
| | STRATEGY: Aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey with open understorey of predominantly non-rainforest species). | | |
| | ISSUES: Occurs on exposed ridges and crests but soils are heavy and retain moisture. May contain heath species in understorey. Frequent fire is needed to maintain understorey integrity, keeping more mesic species low in the profile of the understorey so that other species can compete. A grassy system is especially important for species such as the eastern bristlebird and its habitat. It is essential that wildfires are not the sole source of fire in this ecosystem. High intensity fires occur periodically through time, however frequent low to moderate intensity fires will create the disturbance required to keep the understorey diverse. A follow-up burn soon after a high intensity wildfire can be considered to reduce germinating mesic species. This 'of | | |

| Vegetation | Recommended fire regime ^{1, 2} | Potential fuel load (t/ha) ³ | Notes |
|--|---|---|---|
| | concern' RE may contain a high number of rare and threatened plant species which require appropriate fire management. | | |
| RE 12.11.10 Notophyll vine forest +/- Araucaria cunninghamii on metamorphics +/- interbedded volcanics (RE 12.11.10) | STRATEGY: Do not burn deliberately. Protection relies on broad- scale management of surrounding country. May need active protection from wildfire in extreme conditions or after prolonged drought. Planned burns should not create a running fire into vine forest. Ensuring conditions of good soil moisture and moisture of litter in surrounding communities will limit fire behaviour/intensity. | 3.5 | Occurs dominant in one RE combination |
| | ISSUES: Fire sensitive and not normally flammable. Some preliminary work suggests rainforest seedling germination from planned burning activities will assist the establishment of seedlings in newly burnt areas, especially due to smoke. There may be issues with lantana and other weeds from fire and other disturbance. Remnants may be limited by frequent fire at the margins; this requires further research. | | |
| RE 12.11.14 Eucalyptus crebra, E. tereticornis, Corymbia intermedia woodland on metamorphics +/- interbedded volcanics (RE 12.11.14) | Same as RE 12.3.11 | 14.4 | Occurs on its own and both dominant and sub-dominant in other RE combinations |
| RE 12.11.18 <i>Eucalyptus moluccana</i> woodland on metamorphics +/- interbedded volcanics (RE 12.11.18) | Same as RE 12.3.11 and RE 12.11.14 | 14.4 | Occurs dominant in RE combinations |
| RE 12.11.25 Corymbia henryi and/or Eucalyptus fibrosa subsp. | SEASON: Summer to winter | 18 | Occurs sub-dominant in one RE |
| fibrosa +/- E. crebra, E. carnea, E. tindaliae woodland on metamorphics +/- interbedded volcanics (RE 12.11.25) | INTENSITY: Low to moderate | | combination |
| | INTERVAL: 4-25 years | | |
| | | | |

| Vegetation | Recommended fire regime ^{1, 2} | Potential fuel load (t/ha) ³ | Notes |
|---|---|--|--|
| | STRATEGY: Aim for 40-60% mosaic burn. Burn with soil moisture and with a spot ignition strategy so that a patchwork of burnt/unburnt country is achieved. | | |
| | ISSUES: The fire regime should maintain a mosaic of grassy and shrubby understoreys. Control of weeds is a major focus of planned burning in most areas. Careful thought should be given to maintaining ground litter and fallen timber habitats by burning only with sufficient soil moisture. Burning should aim to produce fine scale mosaics of unburnt areas. Variability in season and fire intensity is important, as well as spot ignition in cooler or moister periods to encourage mosaics. | | |
| E 12.12.12 Eucalyptus tereticornis, Corymbia intermedia, E. rebra +/- Lophostemon suaveolens woodland on Mesozoic to roterozoic igneous rocks (RE 12.12.12) | Same as RE 12.11.25 | 17.2 | Does not occur in combination with other REs |
| RE 12.12.16 Notophyll vine forest on Mesozoic to Proterozoic gneous rocks (RE 12.12.16) | Same as RE 12.11.10 | 3.5 | Does not occur in combination with other REs |
| | Habitat rehabilitation areas (Non-remnant vegetation) | | |
| Regional ecosystem (RE) 12.3.7 Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland (RE 12.3.7) | STRATEGY: Avoid intentionally burning this fringe vegetation. Burn surrounding ecosystems in conditions that would minimise fire incursion. | 11.6 | Occurs dominant in one RE combination |
| | ISSUES: Protection relies on broad-scale management of surrounding country. However, fire exclusion is not necessary. <i>Casuarina cunninghamiana</i> is sensitive to fire and germination after fire is typically low. Triggers unrelated to fire appear to maintain a healthy ecosystem. Issues with lantana and other weeds may result from fire and other disturbance. | | |
| Pre-clearing RE 12.3.11 | | As above | Same as RE 12.3.11 |

| Vegetation | Recommended fire regime ^{1, 2} | Potential fuel load (t/ha) ³ | Notes |
|---|---|--|------------------------------------|
| Pre-clearing RE 12.11.3 | STRATEGY: Do not burn sections of the 'habitat rehabilitation | | Same as RE 12.11.3 |
| Pre-clearing RE 12.11.9 | areas' that have been seeded or planted unless the rehabilitation has reached a mature state that is deemed to be able to withstand a fire. Otherwise, implement fire regimes as | | Same as RE 12.11.9 |
| Pre-clearing RE 12.11.14 | | | Same as RE 12.11.14 |
| Pre-clearing RE 12.11.18 | listed for remnant vegetation above. | | Same as RE 12.11.18 |
| Pre-clearing RE 12.12.12 | | | Same as RE 12.12.12 |
| Pre-clearing RE 12.12.15 Corymbia intermedia +/- Eucalyptus | SEASON: Late summer to autumn | 35 | Does not occur in combination with |
| propinqua, E. siderophloia, E. microcorys, Lophostemon confertus open forest on Mesozoic to Proterozoic igneous rocks | INTENSITY: Moderate to high | | other REs |
| (RE 12.12.15) | INTERVAL: Minimum 20 years, maximum unknown, requiring further research. | | |
| | STRATEGY: Do not burn sections of the 'habitat rehabilitation areas' that have been seeded or planted unless the rehabilitation has reached a mature state that is deemed to be able to withstand a fire. Otherwise, aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey, rainforest dominated but mixed species understorey). It is unlikely that mosaic burns will be achievable because fire would most likely be of higher intensity, ie likely to be a wildfire, and is only likely to occur at long intervals (at least 20+ years) during prolonged dry periods. In exceptional circumstances, different localities containing this ecosystem could be burnt to ensure a continuum of habitat availability across the broader landscape. Using this strategy maximises the probability of spatial mosaics in the landscape. ISSUES: Frequent fire is needed to maintain understorey integrity, keeping more mesic species low in the profile of the understorey so that other species can compete. It is essential that wildfires are not the sole source of fire in this ecosystem. High intensity fires occur periodically through time, however | | |

| Vegetation | Recommended fire regime ^{1, 2} | Potential fuel load (t/ha) ³ | Notes |
|---|---|---|--|
| | frequent low to moderate intensity fires will create the disturbance required to keep the understorey diverse. A follow-up burn soon after a high intensity wildfire can be considered to reduce germinating mesic species. This RE may contain a high number of rare and threatened plant species which require appropriate fire management. Operationally there will be many areas of wet sclerophyll that cannot be safely burnt, and will only burn in wildfire. There is evidence that suggests that infrequent high intensity fires sustain the eucalypt overstorey. Wet sclerophyll has been shown to be a moving ecotone between vine forest and moist/dry sclerophyll. | | |
| | Habitat revegetation areas | | |
| Cleared land consisting of low to moderate tree or grass cover that will be subject to revegetation | STRATEGY: Do not burn sections of the 'revegetation areas' that have been planted unless the revegetation has reached a mature state that is deemed to be able to withstand a fire. | 5-8 (prior to revegetation reaching a mature state) | Land which has been previously cleared of vegetation |

Notes

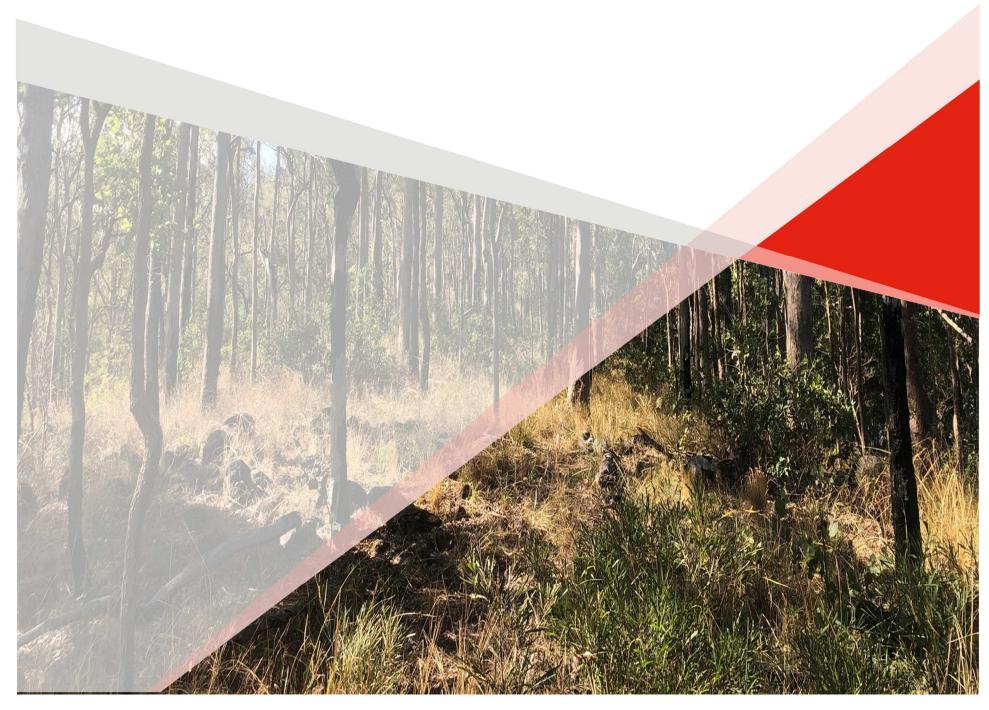
¹ Queensland Government regional ecosystem descriptions accessed online at https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions, 12 May 2021

² When planning fuel hazard reduction burns use minimum fire 'interval' for remnant and non-remnant REs
3 Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience – Bushfire' (QFES 2019)

Appendix H

Koala Habitat Management Plan





Koala Habitat (Rehabilitation) Management Plan -Summary

Offset Management Plan – Stage 1

Raynbird Road, Narangba Prepared for Boral Resources Pty Ltd



Koala habitat Rehabilitation Plan – Stage One Offsets

Overall Objectives

Completion criteria for the Stage One offset site are as follows:

- WONS reduced to less than 10% of baseline levels.
- Offset zones reach the habitat quality scores identified in the Amended Offsets Strategy (values below) within 10 years of commencement of action:
 - o Remnant areas improve from a habitat quality score of 7/10 to 8/10
 - o Rehabilitation and revegetation areas improve from a habitat quality score of 6/10 to 8/10
 - Koala habitat quality will be assessed using the modified habitat quality assessment method detailed in the Amended Offsets Strategy.
 Any alternate methodology would require prior agreement between Boral and DAWE.
- Dogs or evidence of dog presence are not detected on the offset area for a period of three years.
- Koala habitat quality remains at target values (7/10 remnant areas, 6/10 rehabilitation areas) or better for two consecutive five-year monitoring events.

Timeline of OMP processes

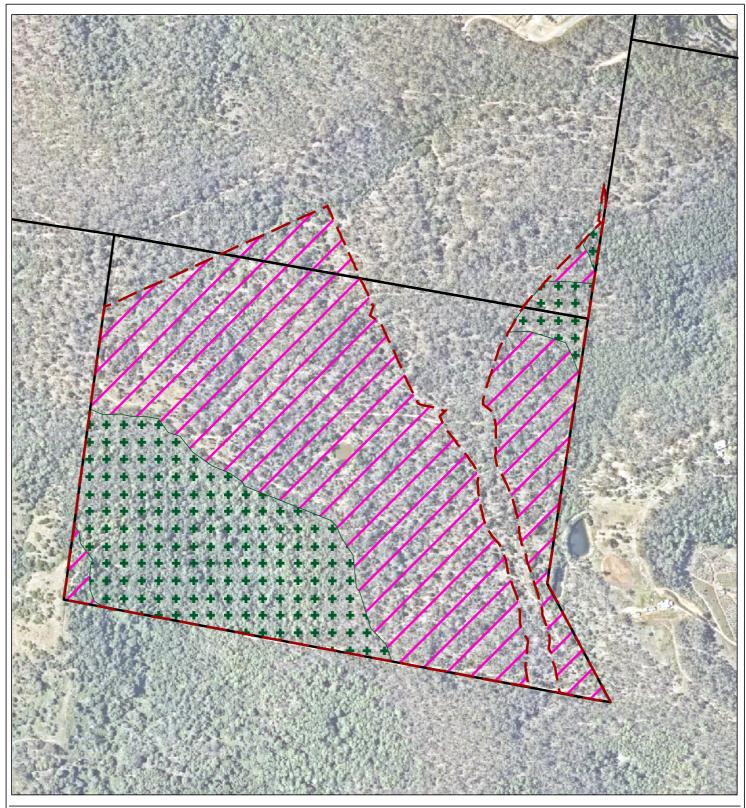
| Timing | Event |
|--|--|
| 6-months post- commencement | Rehabilitation Plan developed |
| | Restoration practices (seeding, natural regeneration, supplementary planting) to have commenced |
| 12-months post- | Habitat Quality monitoring to have been completed - baseline values maintained |
| commencement | Supplementary planting survival rate is 90% at 12-months post-planting |
| Annual for initial 3-years post-commencement | Complete habitat quality monitoring |
| 5-years post- commencement | Habitat quality shows signs of improvement from baseline scores – planting success rate above 90% |
| Every 5-years from year 3 post-commencement | Complete habitat quality monitoring |
| General | Areas allowed to regenerate will display signs of native vegetation regrowth at rates expected for those species |

Koala Habitat Rehabilitation

Stage one of the OMP is the first of a three-stage offset, located almost entirely on Lot 93 on SP193378. Stage one of the offsets site accounts for approximately 73.7 ha of this total offset area.

The Offsets Management strategy (OMS) which underpinned the OMP, outlined a detailed approach to the management of koala habitat onsite, involving strategic division of habitat into three management categories. Stage One of the Offsets site contains two of these categories including (1) habitat rehabilitation and (2) remnant vegetation management. As detailed in the OMS, the areas that are identified as suitable for habitat rehabilitation are those that are not mapped as remnant vegetation, but still retain relatively intact vegetation with high potential to return to quality habitat. These areas in their existing state are degraded due to weed invasion or past land uses requiring clearing of the ground layer.

Remnant vegetation management areas are those identified as remnant vegetation are those areas of existing vegetation management areas are those identified as remnant. These areas were observed as having the potential to experience some disturbance from surrounding land uses, understorey clearing and/or weed invasion. Remnant vegetation management areas account for 57.9 ha of the total offset site and habitat rehabilitation management areas account for 15.8ha across Stage One (**Figure 1**). Page three of this Plan details recommendations for guiding the restoration process onsite in regard to the achieving the objectives set out in the Offsets Management Plan. Pages four and five provide detail on the roles and responsibilities, monitoring processes and risk management supporting habitat rehabilitation on







Stage 1



Remnant vegetation management area (Stage 1: 22.1 ha)

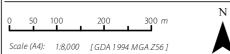


Habitat rehabilitation area (Stage 1: 51.5 ha)

Figure 1

Stage 1 Habitat Management Areas



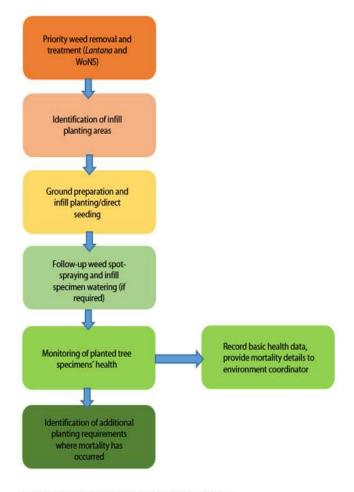


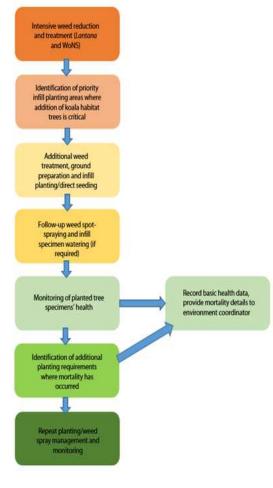




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Recommended site restoration process - Stage One





Recommended target species for inclusion within restoration regime

| Regional Ecosystem | Species | Strata | Koala habitat tree (Y/N) | Koala food tree (preferred) | Minimum spacing | Dominant species onsite |
|-----------------------|----------------------------|------------------|-----------------------------|--------------------------------|--------------------|-------------------------|
| 12.11.18/12.11.14 | Eucalyptus tereticornis | Canopy | Υ | Υ | 1.5m | Υ |
| 12.11.18 | Corymbia citriodora | Canopy | Υ | | 1.5m | Υ |
| 12.11.18 | Eucalyptus moluccana | Canopy | Υ | Υ | 1.5m | |
| 12.11.18/12.11.3a | Eucalyptus siderophloia | Canopy | Υ | | 1.5m | |
| 12.11.18/12.11.14 | Eucalyptus crebra | Canopy | Υ | | 1.5m | |
| 12.11.3a | Eucalyptus propinqua | Canopy | Υ | | 1.5m | |
| 12.11.18/12.11.14 | Angophora leiocarpa | Canopy | Υ | | 1.5m | |
| 12.11.3a | Allocasuarina torulosa | Subcanopy | | | 1.5m | Υ |
| 12.11.18 | Alphitonia excelsa | Subcanopy | | | 1.5m | Υ |
| 12.11.3a | Lophostemon confertus | Canopy/Subcanopy | Υ | | 1.5m | |

Remnant vegetation management process

Habitat Rehabilitation management process

Targeted Regional Ecosystems for onsite restoration

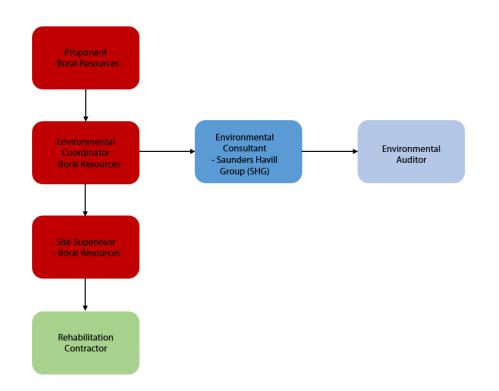
| Regional Ecosystem | Structure category | Description |
|--------------------------|--------------------|--|
| Least Concern RE12.11.18 | Sparse | Eucalyptus moluccana woodland +/- Corymbia citriodora subsp. variegata, E. tereticornis, E. siderophloia or E. crebra, E. longirostrata, C. intermedia, E. carnea. Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Occurs as scattered occurrences in a range of topographic positions from ridgetops to lower slopes. (BVG1M: 13d) |
| Least Concern RE12.11.3 | Mid-dense | Eucalyptus siderophloia and E. propinqua open forest +/- E. microcorys, Lophostemon confertus, Corymbia intermedia, E. biturbinata, E. acmenoides, E. tereticornis, E. moluccana, Angophora leiocarpa, Syncarpia verecunda with vine forest species and E. grandis or E. saligna in gullies. Eucalyptus pilularis and E. tindaliae sometimes present e.g. mid D'Aguilar Range, Conondale Range. Occurs predominantly on hills and ranges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. (BVG1M: 9a) |
| Of Concern RE12.11.14 | Sparse | Eucalyptus crebra, E. tereticornis, Corymbia intermedia grassy woodland. Other species including Eucalyptus melanophloia, Corymbia clarksoniana, C. erythrophloia, C. tessellaris, E. siderophloia, Angophora spp. May be present in low densities or in patches. Mid-layer generally sparse but can include low trees such as Vachellia bidwillii, Capparis spp., Dodonaea triquetra, Alphitonia excelsa and Xanthorrhoea spp. Occurs on mid and lower slopes on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. (BVG1M: 13c) |

Land Zone 11

The prevailing landform is Land Zone 11, described below:

Metamorphosed rocks, forming ranges, hills and lowlands. Primarily lower Permian and older sedimentary formations which are generally moderately to strongly deformed. Includes low- to high-grade and contact metamorphics such as phyllites, slates, gneisses of indeterminate origin and serpentinite, and interbedded volcanics. Soils are mainly shallow, gravelly Rudosols and Tenosols, with Sodosols and Chromosols on lower slopes and gently undulating areas. Soils are typically of low to moderate fertility.

Chain of Responsibility



Identified Roles

| | Nominated | | Contact ph./details |
|---------------------------|-----------------|---------|---------------------------|
| Role | Person | Company | |
| Proponent/ Project | | | 0401 896 115 |
| Coordinator | Paul West | Boral | |
| Environmental Coordinator | Matthew Allan | Boral | 0466 405 885 |
| | DAWE Compliance | | |
| | Monitoring | | EPBCMonitoring@awe.gov.au |
| Administering Authority | Branch | DAWE | |
| Site Supervisor | Quarry Manager | Boral | TBA |
| Site Contractor | TBA | TBA | TBA |
| Environmental Auditor | ТВА | TBA | TBA |

Roles and Responsibilities

| Roles and Responsibilities | | |
|---------------------------------|---|--|
| Role | Responsibilities | Timeframe |
| Proponent/Project Coordinator | Liaise regularly with Environmental coordinator | As required, ongoing. |
| Troponent/Troject coordinator | Ensure ACR is published to Boral website by 12th August | Annually |
| | Coordinate and liaise with Environmental Consultant | As required, ongoing. |
| | Oversee onsite work and ensure sufficient data is available to achieve annual compliance | As required, ongoing. |
| Environmental Coordinator | Identify onsite non-compliance events for early intervention | As required, ongoing. |
| | Provide data for annual compliance to environmental consultant | As required, ongoing. |
| | Report non-compliance events within 2 business days of detection | As required |
| | Coordinate rehabilitation contractor | Annually, ongoing. |
| | Ensure periodic inspection of site works is completed | As required, ongoing. |
| Site Supervisor | Ensure sufficient data is collected to inform compliance reporting | As required, ongoing. |
| | Liaise with Environmental Coordinator regularly | As required, ongoing. |
| | Identify onsite non-compliance events for early intervention | As required, ongoing. |
| Site Contractor | Complete rehabilitation and restoration works as specified under the OMP and as directed by Site Supervisor and Environmental Coordinator | Annually, ongoing. |
| | and as directed by Site Supervisor and Environmental coordinator | Restoration practices to be suitable documented and data and photographs provided to Site Supervisor |
| | Coordinate annual ERRC monitoring (MHOA) | Annually - 2020 to 2023 |
| Environmental Consultant | Coordinate annual EPBC monitoring (MHQA) | Five-yearly from 2024 |
| | Prepare and coordinate EPBC annual compliance reporting | Published to Boral website by 12th August each year |
| Environmental Auditor | Complete auditing of requirements conditioned under the EPBC approval | As required |
| | | |

Monitoring

Monitoring of permanent transects established during baseline habitat quality score assessments within the Koala offset area will be conducted annually (for the first three years) by suitably qualified ecologists to provide data for systematic analysis required to determine the initial success of the KHMP. Monitoring will be conducted in September. This standardised monitoring will be conducted every five years following this initial three-year phase.

Visual inspections of planting sites will take place following direct seeding and planting onsite. Inspections will occur at a minimum, in accordance with those set out in the Table below. Inspection of new planting and seeding sites will include general health check of specimens, any weed encroachment or herbivory impacts and record any loss of individual plantings. Details will be provided to Boral's environmental coordinator who will initiate plans for supplementary plantings during suitable conditions.

| Event | Timeframe | | | | | |
|--------------------|---|---|--|--|--|--|
| | Initial | Long-term | | | | |
| Planted site | Regular visual inspection for mortality | quarterly (first year); annually thereafter | | | | |
| Direct seeded site | Regular visual inspection for mortality | quarterly (first year); annually thereafter | | | | |
| MHQT site | Annually (initial three years) | every 5 years | | | | |

Corrective Actions

- If habitat quality scores are not showing improvement, at year 5, rehabilitation techniques will be reviewed by an independent, suitably qualified ecological consultant and alternate techniques recommended and implemented.
- Where koala habitat rehabilitation has a success rate below 90% at year 5, the active regeneration measures will be repeated once. If the success rate remains below 90% techniques will be reviewed by an independent, suitably qualified ecological consultant and alternate techniques recommended and implemented in consultation with DAWE.

Risk Assessment

A risk assessment of the potential contraindicative events which may occur during implementation of the KHMP are outlined in the Table below. These events detail issues which may arise, negatively affecting the increase in koala habitat quality (measured by the koala habitat quality score).

| Objective | Contraindicative event | Likelihood | Consequence | Risk level | Trigger | Contingency | Associated events |
|--|---|------------|-------------|---------------|--|--|---|
| Increase koala habitat quality score | Increase in introduced vertebrate pest species impacting on ecological function and habitat quality score improvement across Stage One. | Unlikely | Minor | Low | Annual Compliance Monitoring (evidence via remote-triggered cameras) indicates an increase in frequency of detection of non- native koala predator and pest vertebrate | Audit and revision of vertebrate pest species management plan and consider increase in frequency of monitoring and/or trapping. Revision of seasonal timing and frequency of trapping across Stage One and entire Offset Area. | Annual vertebrate pest monitoring and trapping |
| Increase koala habitat quality score | Increase in Weeds of National Significance (WoNS) infestation impacting on ecological function and habitat quality score improvement across Stage One. | Unlikely | Minor | Low | Annual Compliance Monitoring indicates a decrease or lack of increase in habitat score specifically due to WONS component | Cause of WONS infestation identified (e.g. external infestation present with seed travelling along drainages) Remediation actions - mapping of new infestation, revision of current control methods, revision and reassessment of frequency of current monitoring actions | Annual weed monitoring |
| Increase koala habitat quality score | Unmanaged burn escalation. | Possible | High | Medium | Uncontrolled prescribed fire outbreak | Burning onsite is to be strictly by prescription only. The Offsets site Fire Management Plan (FMP) outlines the suitable prescription for fire management in each vegetation type in conjunction with fuel load levels, seasonal timing and suitable weather conditions. Tailored firebreaks will be maintained as a component of this FMP, which aims to provide protection from external sources of fire in addition to contain fires within the Offsets Area. Where a fire event negatively impacts habitat within the Offsets Area, the FMP and associated practices will be audited and updated to identify critical changes in fire management practice. Reviews will be conducted at the discretion of Boral in conjunction with critical stakeholders and fire management consultants. | Annual monitoring for fuel loads and fire breaks. |
| Increase koala habitat quality score | Wildfire affecting Stage One | Possible | Severe | Medium | Wildfire occurrence onsite | Burning onsite is to be strictly by prescription only. The Offsets site Fire Management Plan (FMP) outlines the suitable prescription for fire management in each vegetation type in conjunction with fuel load levels, seasonal timing and suitable weather conditions. Tailored firebreaks will be maintained as a component of the FMP, which aims to provide protection from external sources of fire in addition to contain fires within the Offsets Area. Where a fire event negatively impacts habitat within the Offsets Area, the FMP and associated practices will be audited and updated to identify critical changes in fire management practice. Reviews will be conducted at the discretion of Boral in conjunction with critical stakeholders and fire management consultants. | Annual monitoring for fuel loads and fire breaks. Annual fire management and prescription burn planning. |
| Increase koala habitat quality score | Extended drought (greater than 2 years). | Possible | Medium | Low | Declared drought for a period exceeding two consecutive years. | Revision of current and planned fire breaks in consultation with suitable external contractor and removal of grazing reduces the potential impact of drought. | Annual fire monitoring Ongoing weather monitoring |

| Objective | Contraindicative event | Likelihood | Consequence | Risk level | Trigger | Contingency | Associated events |
|-----------|--|------------|-------------|---------------|--|---|---|
| | | | | | | | Soil and erosion monitoring on Quarry site (indicative of offsets site) |
| | Decrease in vegetation across the site due to incorrectly planned clearing for fire or access management. | Rare | Minor | Low | Unplanned vegetation clearing within Stage One | Accurate mapping and GIS enabled tools for contractors maintaining vegetation clear zones adjacent to offset areas. If additional vegetation clearing to what is specified in the respective management | Boral Quarry site access planning Annual fire monitoring Firebreak maintenance events |
| | Not achieving projected timeframe for koala habitat quality score improvement due to low planting survivorship | Possible | Medium | Medium | Planting rate mortality of greater than 10% in any one year | Detailed planting records kept; frequent monitoring of planted sites in initial pre-establishment phase; supplementary watering if required; spot spraying of weeds if required; ongoing regular inspections of planting and rehabilitation sites; identification of supplementary planting when required | Regular weed management Fire management and prescriptions burns Pest management and trapping |