



Newman Quarrying Pty Ltd
**Quarry Expansion at Lot 2 DP 1055044, Tullymorgan-
Jackybulbin Road, Mororo**
Biodiversity and Rehabilitation Management Plan

May 2023

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1. Introduction

This Biodiversity and Rehabilitation Management Plan (BRMP) forms part of the Environmental Management Strategy (EMS) for Sly's Quarry located at Lot 2 DP 1055044, Tullymorgan – Jackbulbin Road, Mororo. This BRMP has been prepared to meet the requirements of the Ministers Conditions of Approval (CoA) outlined in Development Consent SSD 6624, the mitigation measures outlined in the Environmental Impact Statement (EIS) for Sly's Quarry and all relevant legislation.

Figure 1-1 shows the areas subject to the BRMP and Biodiversity Offset Strategy (BOS)/Biodiversity Stewardship site.

1.1 Aim

The aim of this BRMP is to describe the rehabilitation and biodiversity management strategies, procedures, controls and monitoring programs to be implemented to prevent or minimise impacts and facilitate effective rehabilitation of Sly's Quarry during operational and post-operational phases.

1.2 Objectives

To achieve this aim, Newman Quarrying will undertake the following:

- Detail the controls to be implemented to minimise impacts to biodiversity as a result of clearance activities for approved disturbance areas, remnant vegetation and fauna habitat features
- Address the relevant CoA
- Establish management techniques associated with the clearing of vegetation for the approved quarry
- To rehabilitate the site after quarrying activities have ceased to achieve a safe, stable and non-polluting site that integrates into the surrounding landscape
- Establish monitoring requirements
- Detail the requirement for reporting any biodiversity related incidents to the relevant stakeholders

1.3 Targets

The following targets have been established for the management of biodiversity during the operational lifetime of Sly's Quarry:

- Ensure full compliance with the relevant legislative requirements and CoA
- No fauna fatalities
- No unapproved disturbance of vegetation
- No new occurrences of weeds or pathogens on site

Additional targets/completion criteria are included in the Rehabilitation Plan in Appendix C.

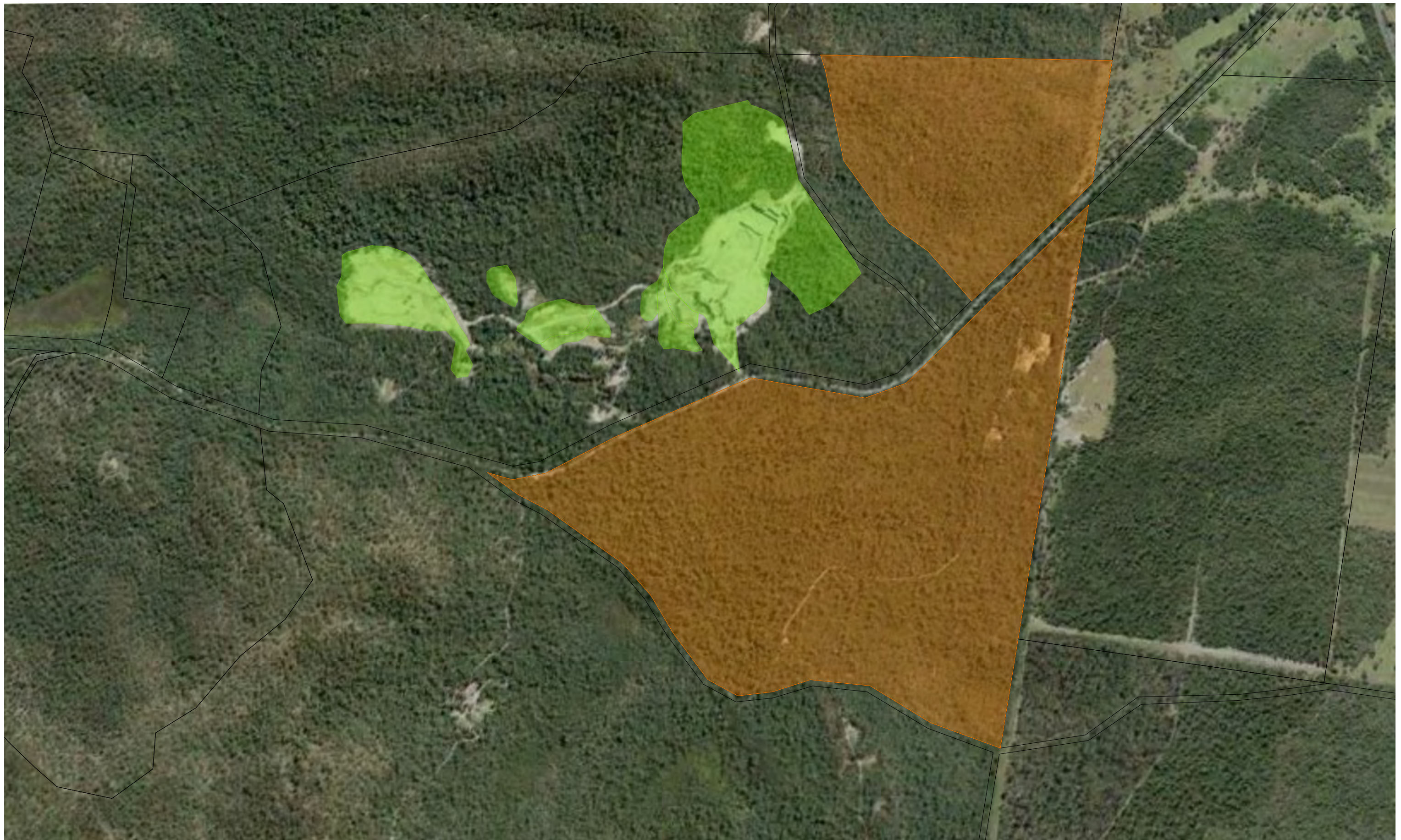
1.4 Consultation

Consultation was undertaken with the local community during preparation of the EIS. Any concerns identified by relevant stakeholders were addressed in the EIS and mitigation measures developed which have been incorporated into this BRMP.

As per CoA 31(a), Schedule 3, the Office of Environment and Heritage (OEH) (now Biodiversity and Conservation Division) and Clarence Valley Council (CVC) were consulted in relation to the BRMP. Evidence of the consultation is provided in Appendix A.

Table 1-1 Agency comments and response

| Agency comment | Response |
|---|---|
| Clarence Valley Council | |
| Part 8.2 of the EMP refers to Environmental Monitoring Schedule for the Biodiversity and Rehabilitation Management Plan (BRMP), being weekly, during and post clearing and quarterly monitoring. It is considered that Quarterly monitoring will provide a useful benchmarking as to rehabilitation – no detail is provided in the BRMP in regard to how or what happens during quarterly monitoring. | Appendix C provides details on monitoring |
| <p>The plan talks generally conceptually like the EIS and needs to specify specific details. The essential document of concern to Council is the Rehabilitation Plan – Appendix B of the BRMP. The Draft Rehabilitation Plan does not meet the requirements of the consent, Schedule 3 – condition 31 in that:</p> <ul style="list-style-type: none"> • There is no detail of the conceptual land forms, existing of final desired outcomes for the different sites. • It is not clear how it integrates with the Biodiversity Offset Strategy of the consent. • The plan only refers to weed species with the potential to occur at each of the sites/zones. There is no mapping of weeds or existing vegetation at each site. This should be provided to benchmark the success of the rehabilitation from the onset and including stage 1 area. • Identification, the location and extent of weeds infestation would dictate the removal methods (cut paste, foliage spray, high pressure or back pack, etc) and anticipated stages and timeframe of weed removal and management on the different areas to be rehabilitated. • When weeds are removed the cleared areas should be revegetated. If seeding is proposed the seeds could be sources from native vegetation on the site. | <ul style="list-style-type: none"> • Appendix C provides details on the final landform • While the BioBank Agreement is part of the BRMP, they are for separate areas with different management requirements • The site only has limited infestations of lantana, which is addressed in Table 4-1 • Appendix C provides details on the weed control techniques for the likely weeds to be encountered • Due to the small areas of weeds, revegetation of areas where weeds have been removed is considered necessary |
| Office of Environment and Heritage (now Biodiversity and Conservation Division) | |
| We have reviewed Revision D of the Slys Quarry Expansion BRMP as prepared by GHD in February 2017 and advise you that the OEH is satisfied that Revision D of the BRMP meets the requirements of the Ministers Condition of Approval No. 31 and mitigation measures pertaining to flora and fauna management as specified in the project Environmental Impact Statement. | Noted |



BRMP



BOS



NEWMAN QUARRYING
SLYS QUARRY

BRMP AND BOS AREAS

| | |
|------------|----------|
| Job Number | 22-17528 |
| Revision | B |
| Date | DEC 2019 |

Figure 1-1

2. Environmental requirements

2.1 Legislation

Legislation relevant to biodiversity and rehabilitation management includes:

- Environmental Planning and Assessment Act 1979 (EP&A Act)
- National Parks and Wildlife Act 1974 (NPW Act)
- Biodiversity Conservation Act 2016 (BC Act)
- Fisheries Management Act 1994 (FM Act)
- Biosecurity Act 2015 (BS Act)
- Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act)

Further discussion of the above legislation is covered in Section 2 of the EMS, as well as the EIS.

2.2 Conditions of approval

The consent conditions relevant to this BRMP are listed in Table 2-1. A cross reference is also included to indicate where the condition is addressed in this BRMP or other environmental management documents.

Table 2-1 Consent conditions relevant to the BRMP

| Condition No. | Requirement | Reference | | | | | | | | | | | | | | | | | | | | |
|---|---|-------------|-------------------|--------------------------|--|---|-----|---|-----|------------------------|--|---|--------|--|-----|--|-----|--|-----|---|-----|-----------|
| 27 | <p>The Applicant must assess in detail the biodiversity values of its proposed Biodiversity Offset Strategy (described in the EIS and shown conceptually in Appendix 6) using the <i>BioBanking Assessment Methodology</i> (OEH, 2014) and must retire ecosystem and species credits as set out in Table 5, to the satisfaction of the Secretary.</p> <table><caption>Table 5: Biodiversity credits to be retired</caption><thead><tr><th>Credit type</th><th>Number of Credits</th></tr></thead><tbody><tr><td>Ecosystem Credits</td><td></td></tr><tr><td>NR 115 Blackbutt-bloodwood dry heathy open forest</td><td>567</td></tr><tr><td>NR123 Blackbutt-Turpentine dry heathy open forest</td><td>327</td></tr><tr><td>Species Credits</td><td></td></tr><tr><td>Bordered Guinea Flower (<i>Hibbertia marginata</i>)</td><td>15,820</td></tr><tr><td>Koala (<i>Phascolarctos cinerus</i>)</td><td>317</td></tr><tr><td>Common planigale (<i>Planigale maculata</i>)</td><td>317</td></tr><tr><td>Squirrel glider (<i>Petaurus norfolcensis</i>)</td><td>268</td></tr><tr><td>Brush-tailed phascogale (<i>Phascogale tapoatafa</i>)</td><td>244</td></tr></tbody></table> | Credit type | Number of Credits | Ecosystem Credits | | NR 115 Blackbutt-bloodwood dry heathy open forest | 567 | NR123 Blackbutt-Turpentine dry heathy open forest | 327 | Species Credits | | Bordered Guinea Flower (<i>Hibbertia marginata</i>) | 15,820 | Koala (<i>Phascolarctos cinerus</i>) | 317 | Common planigale (<i>Planigale maculata</i>) | 317 | Squirrel glider (<i>Petaurus norfolcensis</i>) | 268 | Brush-tailed phascogale (<i>Phascogale tapoatafa</i>) | 244 | Section 4 |
| Credit type | Number of Credits | | | | | | | | | | | | | | | | | | | | | |
| Ecosystem Credits | | | | | | | | | | | | | | | | | | | | | | |
| NR 115 Blackbutt-bloodwood dry heathy open forest | 567 | | | | | | | | | | | | | | | | | | | | | |
| NR123 Blackbutt-Turpentine dry heathy open forest | 327 | | | | | | | | | | | | | | | | | | | | | |
| Species Credits | | | | | | | | | | | | | | | | | | | | | | |
| Bordered Guinea Flower (<i>Hibbertia marginata</i>) | 15,820 | | | | | | | | | | | | | | | | | | | | | |
| Koala (<i>Phascolarctos cinerus</i>) | 317 | | | | | | | | | | | | | | | | | | | | | |
| Common planigale (<i>Planigale maculata</i>) | 317 | | | | | | | | | | | | | | | | | | | | | |
| Squirrel glider (<i>Petaurus norfolcensis</i>) | 268 | | | | | | | | | | | | | | | | | | | | | |
| Brush-tailed phascogale (<i>Phascogale tapoatafa</i>) | 244 | | | | | | | | | | | | | | | | | | | | | |
| 28 | <p>Within 18 months of this consent, unless otherwise agreed with the Secretary, the Applicant must make suitable arrangements to provide appropriate long-term security for the Biodiversity Offset Strategy, to the satisfaction of the Secretary.</p> | Section 4 | | | | | | | | | | | | | | | | | | | | |

| Condition No. | Requirement | Reference | | | | | | | | | | | | |
|--|--|--------------------------------------|-----------|-------------------|---|------------------------|--|---------------------------------------|--|--|---|------------|---|------------|
| 29 | <p>The Applicant must rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be generally consistent with the rehabilitation strategy in the EIS and the conceptual rehabilitation plan in Appendix 3 and must comply with the objectives in Table 6.</p> <table><tr><th>Feature</th><th>Objective</th></tr><tr><td>Site (as a whole)</td><td><ul style="list-style-type: none">• Safe, stable and non-polluting• Final landform integrated with surrounding• natural landforms as far as is reasonable and• feasible, and minimising visual impacts when viewed• from surrounding land</td></tr><tr><td>Surface Infrastructure</td><td><ul style="list-style-type: none">• Decommissioned and removed, unless otherwise• agreed by the Secretary</td></tr><tr><td>Quarry benches and pit floor (Site A)</td><td><ul style="list-style-type: none">• Landscaped and vegetated using native tree and• understorey species</td></tr><tr><td>Past sand mining sites (Sites B and C)</td><td><ul style="list-style-type: none">• Returned to the pre-development ground level• Landscaped and revegetated using native tree• and understorey species</td></tr><tr><td>Final Void</td><td><ul style="list-style-type: none">• Minimise the size, depth and slope of the batters of the final void• Minimise the drainage catchment of the final void</td></tr></table> | Feature | Objective | Site (as a whole) | <ul style="list-style-type: none">• Safe, stable and non-polluting• Final landform integrated with surrounding• natural landforms as far as is reasonable and• feasible, and minimising visual impacts when viewed• from surrounding land | Surface Infrastructure | <ul style="list-style-type: none">• Decommissioned and removed, unless otherwise• agreed by the Secretary | Quarry benches and pit floor (Site A) | <ul style="list-style-type: none">• Landscaped and vegetated using native tree and• understorey species | Past sand mining sites (Sites B and C) | <ul style="list-style-type: none">• Returned to the pre-development ground level• Landscaped and revegetated using native tree• and understorey species | Final Void | <ul style="list-style-type: none">• Minimise the size, depth and slope of the batters of the final void• Minimise the drainage catchment of the final void | Appendix C |
| Feature | Objective | | | | | | | | | | | | | |
| Site (as a whole) | <ul style="list-style-type: none">• Safe, stable and non-polluting• Final landform integrated with surrounding• natural landforms as far as is reasonable and• feasible, and minimising visual impacts when viewed• from surrounding land | | | | | | | | | | | | | |
| Surface Infrastructure | <ul style="list-style-type: none">• Decommissioned and removed, unless otherwise• agreed by the Secretary | | | | | | | | | | | | | |
| Quarry benches and pit floor (Site A) | <ul style="list-style-type: none">• Landscaped and vegetated using native tree and• understorey species | | | | | | | | | | | | | |
| Past sand mining sites (Sites B and C) | <ul style="list-style-type: none">• Returned to the pre-development ground level• Landscaped and revegetated using native tree• and understorey species | | | | | | | | | | | | | |
| Final Void | <ul style="list-style-type: none">• Minimise the size, depth and slope of the batters of the final void• Minimise the drainage catchment of the final void | | | | | | | | | | | | | |
| 30 | The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation. | Section 4, Appendix C and AQMP | | | | | | | | | | | | |
| 31 | The Applicant must prepare a Biodiversity and Rehabilitation Management Plan for the development to the satisfaction of the Secretary. This plan must: | | | | | | | | | | | | | |
| | (a) Be prepared in consultation with OEH and Council. | Appendix A | | | | | | | | | | | | |
| | (b) Be submitted to the Secretary for approval within 6 months of the date of this consent, unless the Secretary agrees otherwise. | Noted | | | | | | | | | | | | |
| | (c) Be approved by the Secretary, prior to commencing quarrying operations in Stages 2 or 3 (refer Appendix 2), unless the Secretary agrees otherwise. | Noted | | | | | | | | | | | | |
| | (d) Provide details of the conceptual final landform and associated land uses for the site. | Appendix C and Appendix C of the EMS | | | | | | | | | | | | |
| | (e) Describe how the implementation of the Biodiversity Offset Strategy would be integrated with the overall rehabilitation of the site. | Section 4 | | | | | | | | | | | | |
| | (f) Include detailed performance and completion criteria for evaluating the performance of the Biodiversity Offset Strategy | Appendix C | | | | | | | | | | | | |

| Condition No. | Requirement | Reference |
|---------------|--|--------------------------------------|
| | and rehabilitation of the site, including triggers for any necessary remedial action. | |
| | (g) Describe the short, medium and long term measures that would be implemented to: <ul style="list-style-type: none"> • Manage remnant vegetation and habitat on site, including within the Biodiversity Offset Strategy area. • Ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this consent. | Section 4, Appendix C, SWMP and AQMP |
| | (h) Include a detailed description of the measures that would be implemented over the next 3 years (to be updated for each 3 year period following initial approval of the plan) including the procedures to be implemented for: | |
| | <ul style="list-style-type: none"> • Maximising the salvage of environmental resources within the approved disturbance area, including tree hollows, vegetative and soil resources, for beneficial reuse in the enhancement of the offset area or site rehabilitation. | Table 4-1 – B19 |
| | <ul style="list-style-type: none"> • Restoring and enhancing the quality of native vegetation and fauna habitat in the biodiversity offset and rehabilitation areas through assisted natural regeneration, targeted vegetation establishment and the introduction of fauna habitat features. | Appendix B and Appendix C |
| | <ul style="list-style-type: none"> • Protecting and conserving habitat for the Bordered Guinea Flower (<i>Hibbertia marginata</i>). | Appendix B |
| | <ul style="list-style-type: none"> • Protecting vegetation and fauna habitat outside the approved disturbance area on-site. | Table 4-1 – B1, B2, B6, B12 |
| | <ul style="list-style-type: none"> • Minimising the impacts on native fauna, including undertaking pre-clearance surveys. | Table 4-1 – B17 |
| | <ul style="list-style-type: none"> • Establishing vegetation screening to minimise the visual impacts of the site on surrounding receivers. | Table 4-1 – B13 |
| | <ul style="list-style-type: none"> • Ensuring minimal environmental consequences for threatened species, populations and habitats. | Table 4-1 |
| | <ul style="list-style-type: none"> • Avoiding and minimising the spread of Exotic Rust Fungi of the order Uredinales pathogenic on plants of the family Myrtaceae (Myrtle Rust), <i>Phytophthora cinnamomi</i> (<i>Phytophthora</i>) and <i>Chytridfungus</i>; | Table 4-1 – B25 |
| | <ul style="list-style-type: none"> • Collecting and propagating seed. | Table 4-1 - B16 |
| | <ul style="list-style-type: none"> • Controlling weeds and feral pests. | Table 4-1 – B9 and B26 |
| | <ul style="list-style-type: none"> • Controlling erosion. | Refer to SWMP |
| | <ul style="list-style-type: none"> • Ensuring no obstruction of legal public access along the Crown public road referred to as 'Slys Road' in accordance with public rights of access under the Roads Act 1993. | Table 4-1 – B14 |
| | <ul style="list-style-type: none"> • Controlling access to Slys Road, including managing public safety risks associated with rights of access over Slys Road by installing appropriate fencing and signage. | Table 4-1 – B14 and B15 |
| | <ul style="list-style-type: none"> • Managing bushfire risk. | Refer to BMP |

| Condition No. | Requirement | Reference |
|-------------------------|---|--|
| | (i) Include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria. | Section 4 and Appendix C |
| | (j) identify the potential risks to the successful implementation of the Biodiversity Offset Strategy, and include a description of the contingency measures that would be implemented to mitigate these risks. | Appendix C |
| | (k) include details of who would be responsible for monitoring, reviewing, and implementing the plan. | Section 4 |
| 32 | The Applicant must implement the approved Biodiversity and Rehabilitation Management Plan as approved from time to time by the Secretary. | Noted |
| 33 | <p>Within 6 months of the approval of the Biodiversity and Rehabilitation Management Plan, the Applicant must lodge a Biodiversity and Rehabilitation Bond with the Department to ensure that the Biodiversity Offset Strategy and rehabilitation of the site are implemented in accordance with the performance and completion criteria set out in the plan and relevant conditions of this consent. The sum of the bond must be determined by:</p> <p>(a) calculating the cost of implementing the Biodiversity Offset Strategy over the next 3 years.</p> <p>(b) calculating the cost of rehabilitating the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations.</p> <p>(c) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs.</p> <p>to the satisfaction of the Secretary.</p> | Noted |
| 34 | <p>Within 3 months of each Independent Environmental Audit (see condition 10 of Schedule 5), the Applicant must review, and if necessary revise, the sum of the Conservation and Rehabilitation Bond to the satisfaction of the Secretary. This review must consider the:</p> <p>(a) Effects of inflation.</p> <p>(b) Likely cost of implementing the Biodiversity Offset Strategy and rehabilitating the site (taking into account the likely surface disturbance over the next 3 years of the development).</p> <p>(c) Performance of the implementation of the Biodiversity Offset Strategy and rehabilitation of the site to date.</p> | Noted |
| Schedule 5, Condition 3 | The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: | |
| | (a) Detailed baseline data. | Section 3 |
| | <p>(b) A description of:</p> <p>The relevant statutory requirements (including any relevant approval, licence or lease conditions).</p> <p>Any relevant limits or performance measures/criteria.</p> <p>The specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures.</p> | Section 2.1 Section 5 and Appendix C Section 5 |
| | (c) A description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria. | Section 4 |
| | (d) A program to monitor and report on the: | Section 5.1 and Appendix C |

| Condition No. | Requirement | Reference |
|---------------|---|----------------------------|
| | Impacts and environmental performance of the development; and Effectiveness of any management measures (see (c) above). | |
| | (e) A contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible. | Section 5.2 and Appendix C |
| | (f) A program to investigate and implement ways to improve the environmental performance of the development over time. | Section 6 |
| | (g) a protocol for managing and reporting any: Incidents; Complaints. Non-compliances with statutory requirements. Exceedances of the impact assessment criteria and/or performance criteria. | Section 6 of the EMS |
| | (h) a protocol for periodic review of the plan. Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans. | Section 6 |

3. Existing environment and impacts

3.1 Existing environment

3.1.1 Flora

Two plant communities occur within Stages 2 and 3 study area (Stage 1 was not considered because this area has an existing approval), these communities are described below and their location is shown on Figure 3-1.

Blackbutt - bloodwood dry heathy open forest on sandstones of the northern North Coast (NR114)

Blackbutt-bloodwood dry heathy open forest is a tall open forest that occurs on deep sands of old dune systems along the NSW North Coast. The dominant species are listed in Table 3-1.

Table 3-1 Blackbutt-bloodwood dry heathy open forest species list

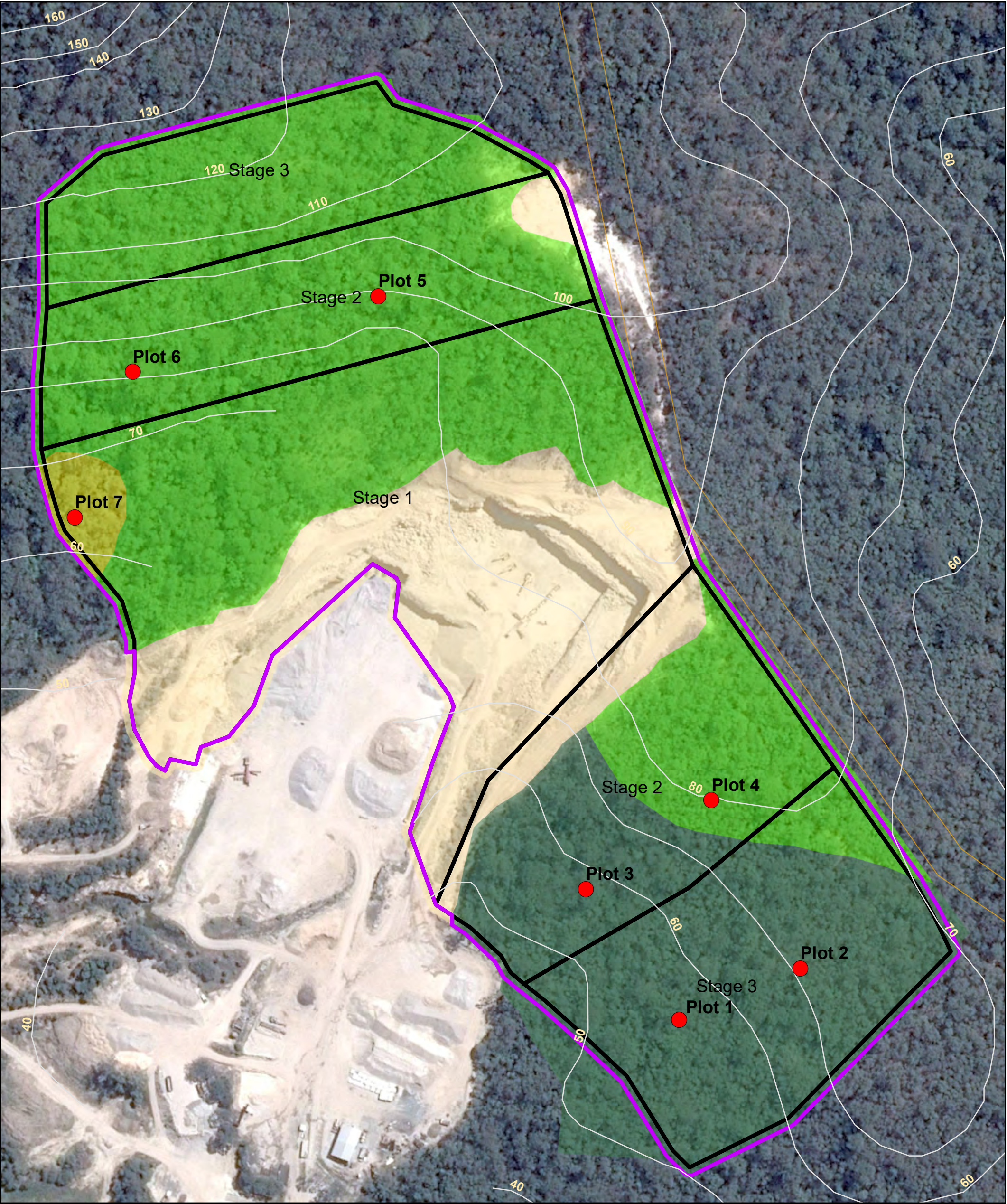
| Stratum | Species | Stratum Height (m) |
|-------------|---|--------------------|
| Overstorey | Pink Bloodwood (<i>Corymbia intermedia</i>), Tallowwood (<i>Eucalyptus microcorys</i>) Blackbutt (<i>Eucalyptus pilularis</i>) <i>Angophora paludosa</i> | 25 |
| Midstorey | <i>Acacia leiocalyx</i> Red Ash (<i>Alphitonia excelsa</i>) Logon Apple (<i>Acronychia imperforata</i>) Salwood (<i>Acacia disparrima</i>) | 10 |
| Understorey | Coffee Bush (<i>Breynia oblongata</i>) Cheese Tree (<i>Glochidion ferdinandi</i>) Tree Heath (<i>Trochocarpa laurina</i>) | 5 |
| Groundcover | Many-flowered Mat-rush (<i>Lomandra multiflora</i>) Blue Flax Lily (<i>Dianella cerulea</i> var. <i>producta</i>) Rough Saw Sedge (<i>Gahnia aspera</i>) Spear Grass (<i>Austrostipa pubescens</i>) Creeping Beard Grass (<i>Oplismenus imbecillis</i>) | 1 |

Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the North Coast (NR123)

Blackbutt-Turpentine dry heathy forest is a tall open forest that occurs on sandstone geologies of the Clarence-Moreton Basin from the southern Richmond Range east to the Coast Range. The dominant species are listed in Table 3-2.

Table 3-2 Blackbutt-Turpentine dry heathy forest species list

| Stratum | Species | Stratum Height (m) |
|-------------|--|--------------------|
| Overstorey | Blackbutt (<i>Eucalyptus pilularis</i>) Turpentine (<i>Syncarpia glomerata</i>) Red Mahogany (<i>Eucalyptus resinifera</i>) <i>Angophora woodsiana</i> | 25 |
| Midstorey | <i>Acacia leiocalyx</i> Red Ash (<i>Alphitonia excelsa</i>) Tree Heath (<i>Trochocarpa laurina</i>) Flaky-barked Tea-tree (<i>Leptospermum trinervium</i>) <i>Persoonia conjuncta</i> Cheese tree (<i>Glochidion ferdinandiana</i>) Blackthorn (<i>Bursaria spinosa</i>) | 8 |
| Understorey | Handsome Flat Pea (<i>Platylobium formosum</i>) <i>Hibbertia marginate</i> <i>Leucopogon lanceolatus</i> Coffee Bush (<i>Breynia oblongata</i>) | 2 |
| Groundcover | Wire Grass (<i>Entolasia stricta</i>) Grass Trees (<i>Xanthorrhoea</i> sp) Spiny-headed Mat-rush (<i>Lomandra longifolia</i>) Rough Saw-sedge (<i>Gahnia aspera</i>) Common Bracken (<i>Pteridium esculentum</i>) Crinkle Bush (<i>Lomatia silaifolia</i>) Blue Flax-lily (<i>Dianella cerulea</i>) <i>Lepidosperma laterale</i> | 1 |
| Vines | Wonga Wonga Vine (<i>Pandorea pandorana</i>) Lawyer vine (<i>Smilax australis</i>) Sweet Sarsaparilla (<i>Smilax glycyphylla</i>) Molucca Bramble (<i>Rubus moluccanus</i> var. <i>trilobus</i>) Stiff Jasmine (<i>Jasminum volubile</i>) | |



LEGEND

- biobanking plot/transects
- Subject site
- Stages
- 10m contour

- cadastre
- Blackbutt - Turpentine dry heathy open forest on sandstones
- Blackbutt - bloodwood dry heathy open forest on Quaternary sands

- Swamp Mahogany swamp forest of the coastal lowlands
- Cleared

N:\AUI\Coffs Harbour\Projects\22\17528\GIS\Maps\Deliverables\22_17528_2002_Vegetation_zones_RevB.mxd
© 2015. Whilst every care has been taken to prepare this map, GHD and NSW DEPARTMENT OF LANDS, GEOSCIENCE AUSTRALIA, NSW DEPARTMENT OF PRIMARY INDUSTRY, GOOGLE EARTH PRO IMAGERY make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.
Data Source: NSW Department of Lands: Cadastre - Jan 2014; Geoscience Australia: 250k Data - Jan 2014; NSW Department of Primary Industry - Jan 2014; Google image Jan 2014. Created by: qjchung

One threatened flora species (Bordered Guinea Flower (*Hibbertia marginata*) listed under the EPBC Act and TSC Act occurs within the study area. Bordered Guinea Flower is restricted to the southern Richmond Range between Casino and Grafton and grows in grassy or shrubby dry open eucalypt forest at low altitudes on sandstone. A total of 1,120 individuals of Bordered Guinea Flower were identified within the subject site during targeted searches for the species. The locations where this species was identified is shown on Figure 3-2.

Based on the presence of suitable habitat there is also a possibility that a further two flora species listed under these Acts may occur, as listed in Table 3-3 below.

Table 3-3 Threatened flora with potential habitat in the study area

| Species Name | Common Name | TSC Act status | EPBC Act status |
|-------------------------------------|-----------------|----------------|-----------------|
| <i>Paspalidium grandispiculatum</i> | A Grass | V | V |
| <i>Polygala linariifolia</i> | Native Milkwort | E | - |

The codes used in this table are; E – endangered; V – vulnerable

Noxious and environmental weeds

One flora species declared as noxious under the NW Act occurs within the study area. This species (*Lantana* (*Lantana camara*)) is a class 4 noxious weed which in accordance with the NW Act must be managed in a manner that continuously inhibits the ability of the plant to spread.

Within the study area *Lantana* occurs as small isolated patches scattered through the site.

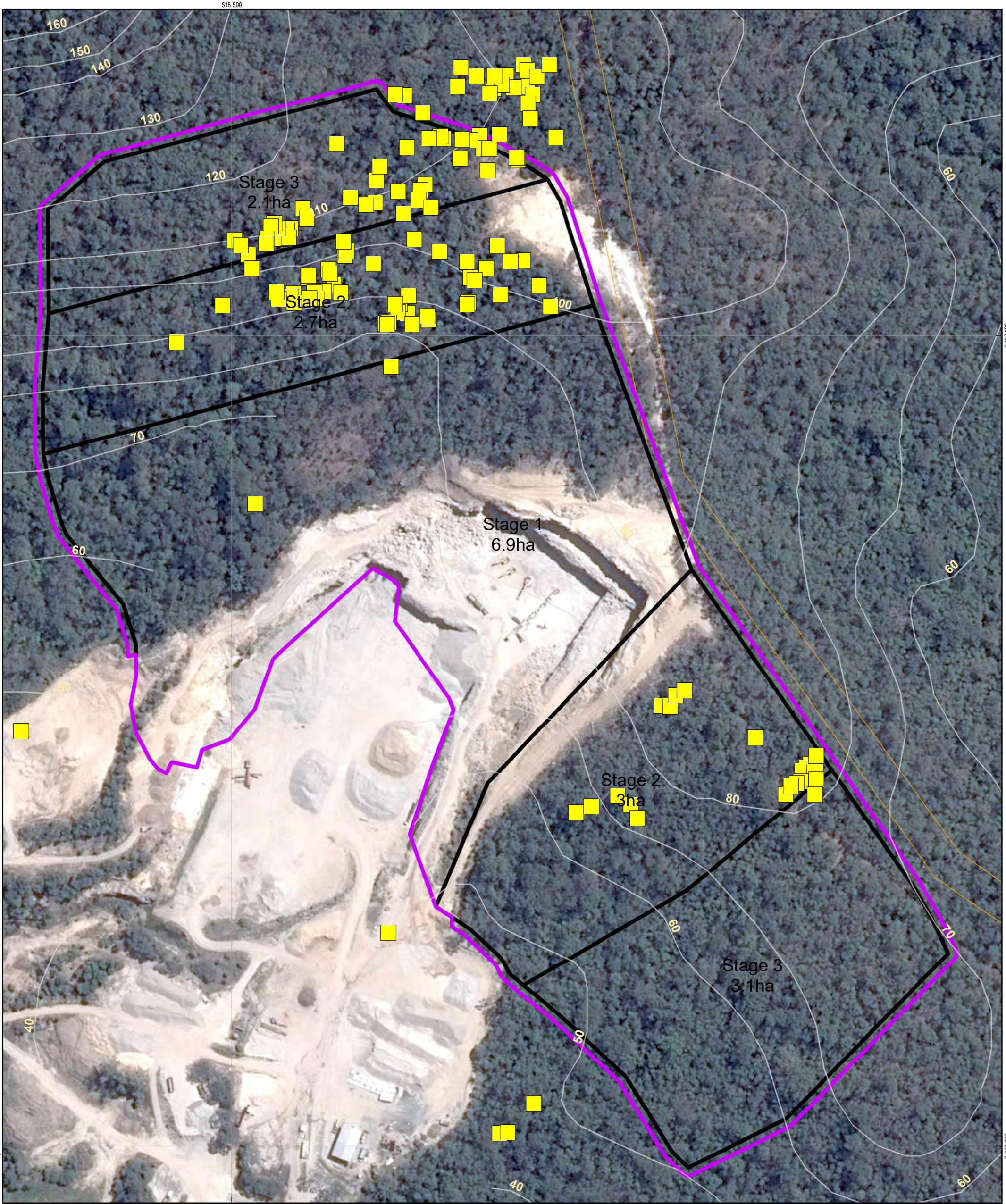
3.1.2 Fauna

The study area would be expected to support a moderately high diversity of native fauna species. Habitat values within the study area are somewhat lower than might be expected due to the previous selective logging that has occurred at the site. However, the study area contains a range of habitat features which would provide shelter and foraging resources for a variety of native fauna.

A total of 20 fauna species were recorded within the study area including 19 birds and one reptile. These species were recorded incidentally during the site visit and no targeted surveys for fauna were undertaken. It is likely that the site would be utilised by a range of other fauna species not recorded during the survey.

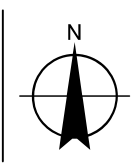
A total of 22 threatened fauna species are considered to have the potential to occur at the site based on local records and the presence of suitable habitat which are listed in Table 3-4.

The presence of primary feed trees for Koala at the site suggests there is suitable habitat for this species within the study area.



- LEGEND
- Subject site
 - Hibbertia Marginata
 - Stages
 - cadastre
 - 10m contour

Paper Size A3
0 10 20 40 60 80
Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Newman Quarrying
Sly's Quarry Environmental Impact Statement
Biodiversity Assessment

Job Number 22-17528
Revision A
Date 18 Feb 2015

Threatened species recorded
within study area

Figure 3-2

Table 3-4 Threatened fauna with the potential to occur within the study area

| Species name | Common Name | TSC Act Status | EPBC Act status |
|--|--------------------------------|----------------|-----------------|
| <i>Calyptorhynchus lathamii</i> | Glossy Black-Cockatoo | V | - |
| <i>Coracina lineata</i> | Barred Cuckoo-shrike | V | - |
| <i>Daphoenositta chrysoptera</i> | Varied Sittella | V | - |
| <i>Glossopsitta pusilla</i> | Little Lorikeet | V | - |
| <i>Lophoictinia isura</i> | Square-tailed Kite | V | - |
| <i>Ninox connivens</i> | Barking Owl | V | - |
| <i>Ninox strenua</i> | Powerful Owl | V | - |
| <i>Tyto novaehollandiae</i> | Masked Owl | V | - |
| <i>Chalinolobus nigrogriseus</i> | Hoary Wattled Bat | V | - |
| <i>Dasyurus maculatus</i> | Spotted-tailed Quoll | V | E |
| <i>Miniopterus australis</i> | Little Bentwing-bat | V | - |
| <i>Miniopterus schreibersii oceanensis</i> | Eastern Bentwing-bat | V | - |
| <i>Mormopterus norfolkensis</i> | Eastern Freetail-bat | V | - |
| <i>Nyctophilus bifax</i> | Eastern Long-eared Bat | V | - |
| <i>Petaurus australis</i> | Yellow-bellied Glider | V | - |
| <i>Petaurus norfolcensis</i> | Squirrel Glider | V | - |
| <i>Phascogale tapoatafa</i> | Brush-tailed Phascogale | V | - |
| <i>Phascolarctos cinereus</i> | Koala | V | V |
| <i>Planigale maculata</i> | Common Planigale | V | - |
| <i>Pteropus poliocephalus</i> | Grey-headed Flying-fox | V | V |
| <i>Saccolaimus flaviventris</i> | Yellow-bellied Sheath-tail-bat | V | - |
| <i>Scoteanax rueppellii</i> | Greater Broad-nosed Bat | V | - |

The codes used in this table are: CE – critically endangered; E – endangered; V – vulnerable; M – migratory

One migratory bird species (Rainbow Bee-eater) listed under the EPBC Act was recorded during surveys. There is also potential habitat for the Fork-tailed Swift, White-throated Needletail and Satin Flycatcher.

No threatened fauna species listed under the FM Act are likely to occur in the study area, or downstream of the study area.

3.2 Impacts

Stages 2 and 3 includes clearing approximately 10.5 hectares of native vegetation, which comprises 4.23 hectares of Blackbutt - Bloodwood dry heathy open forest and 6.27 hectares of Blackbutt - Turpentine dry heathy open forest. Vegetation clearing in these communities would involve removal of a moderately diverse range of non-threatened native plants, including mature trees, as well as potential habitat for threatened biota.

Table 3-5 Impacts per Stage

| Stage | Blackbutt - Bloodwood dry heathy open forest (Ha) | Blackbutt - Turpentine dry heathy open forest (Ha) | <i>Hibbertia marginata</i> (individuals) |
|-----------------|---|--|--|
| Stage 2 - North | - | 2.68 | 291 |
| Stage 2 - South | 1.36 | 1.23 | 216 |
| Stage 3 - North | - | 2.10 | 610 |
| Stage 3 - South | 2.87 | 0.26 | 3 |
| Total | 4.23 | 6.27 | 1,120 |

The proposal may result in direct and indirect impacts on threatened biota listed under the TSC Act including the removal of 1,120 occurrences of the threatened plant, *Hibbertia marginata*; and the removal of habitat for up to 22 threatened fauna species that may occur in the study area.

The clearing and other impacts, the species impacted and reference to the relevant mitigation measures are presented in Table 3-6.

Table 3-6 Impacts

| Impact | Mitigation measure |
|--|----------------------------|
| Clearing | B2, B7 |
| Fragmentation and barrier effects | B2, B4, |
| Fauna injury and mortality | B5, B6, B11, B12, B13, B14 |
| Degradation of aquatic habitats | Refer to SWMP |
| Edge effects | B4 |
| Introduction or spread of weeds | B4, B11 |
| Pests and pathogens | B17 |
| Erosion, dust generation and sedimentation | Refer to SWMP and AQMP |
| Soil and water pollution | Refer to SWMP |
| Noise and vibration | Refer to NMP |

4. Environmental control measures

Environmental requirements and control measures are identified in the Conditions of Approval and the EIS. All reasonable and feasible measures and requirements to address biodiversity and rehabilitation are outlined in Table 4-1 .

Table 4-1 Environmental controls and mitigation measures

| EMS Ref. | Environmental Management Measure | Timing | Responsibility |
|----------|---|-------------------|---------------------------------|
| B1 | All employees and subcontractors will undergo site induction training relating to flora and fauna management issues, including: <ul style="list-style-type: none"> • Pre-clearing requirements • Fauna rescue requirements • Weed control measures • No-go areas • Unexpected finds procedure • Control of pathogens | Pre-operation | Quarry Manager |
| B2 | Stage the clearing so the impact of the proposal on areas with high biodiversity values are minimised. | Pre-operation | Quarry Manager |
| B3 | Prior to clearing Stages 2 and 3, a Biodiversity Stewardship site will be established under the Biodiversity Offset Scheme to retire the credits outlined by Condition 27, Schedule 3 of the CoA. | Prior to clearing | Quarry Manager |
| B4 | The BioBank site is managed in perpetuity in accordance with the BioBank Agreement in Appendix B. | Perpetuity | Quarry Manager |
| B5 | Prepare and implement a Rehabilitation Plan for the former sand quarry area known as "Area C" and the quarry approved by SSD6624 (refer to Appendix C) that ensures rehabilitation occurs as soon as reasonably practicable following disturbance. | Pre-operation | Quarry Manager/Bush Regenerator |
| B6 | Minimise the impact on areas of high biodiversity value by: <ul style="list-style-type: none"> • Undertaking targeted threatened species surveys to determine the occurrence and extent of threatened species within the subject site and mapping of significant habitat features such as hollow bearing trees. • Minimising the area of native vegetation to be cleared wherever possible. • Avoiding identified hollow-bearing trees wherever possible. • Minimising disturbance to adjacent retained vegetation, aquatic and riparian areas. | Operation | Quarry Manager |
| B7 | Lodge a bond with the Department in accordance with Condition 33, Schedule | Operation | Quarry Manager |

| EMS Ref. | Environmental Management Measure | Timing | Responsibility |
|----------|---|----------------------------------|---------------------------------|
| | 3 to ensure that the Biodiversity Offset Strategy and rehabilitation of the site are completed | | |
| B8 | Within 3 months of each Independent Environmental Audit the sum of the Conservation and Rehabilitation Bond will be reviewed, in accordance with Condition 34, Schedule 3, and if necessary, revised, to the satisfaction of the Secretary. | Operation | Quarry Manager |
| B9 | Implement weed control by: <ul style="list-style-type: none"> Implementing hygiene procedures – refer to B25 Inspecting the site every six months for weed infestations Controlling any weeds as described in the Rehabilitation Plan (refer to Appendix C). Dispose of weeds appropriately or at the local tip | Pre-operation and post-operation | Quarry Manager |
| B10 | Restrict vehicle movements to operational (daylight) hours. | Operation | Quarry Manager |
| B11 | Implement and enforce appropriate speed limits for vehicles traversing the site. | Operation | Quarry Manager |
| B12 | The limits of clearing are to be clearly marked by protective fencing (i.e. 'no-go' areas). | Operation | Quarry Manager |
| B13 | Maintain vegetation along Tullymorgan-Jackybulbin Road to maintain a visual screen to the quarry | Operation | Quarry Manager |
| B14 | The Crown road referred to as Slys Road to the east of the quarry will not be obstructed by quarry operations. | Operation | Quarry Manager |
| B15 | Safety barriers and signage will be installed on the eastern side of the quarry to prevent access from Slys Road. During works adjacent to Slys Road, signage will be installed to control access. | Operation | Quarry Manager |
| B16 | Twelve months prior to rehabilitation, collect seed from the area to use in rehabilitation works, especially <i>Hibbertia marginate</i> . | Operation | Quarry Manager/Bush Regenerator |

| EMS Ref. | Environmental Management Measure | Timing | Responsibility |
|----------|---|---------------|--------------------------|
| B17 | <p>Six months prior to clearing, engage an experienced ecologist to undertake a pre-clearing survey and prepare a Nest Box Management Plan (NBMP), in consultation with OEH. This is to include:</p> <ul style="list-style-type: none"> Identifying the number and size of hollows to be lost within the clearing footprint Determining the number, size and location of nest boxes to be installed Mapping and marking any significant habitat features (large woody debris or hollow logs) for relocation into adjacent habitat areas Identifying areas of weeds to be controlled prior to clearing Identifying suitable areas for the relocation of habitat features Pre-clearing surveys for threatened plants not identified during the EIS <p>Refer to Appendix D.</p> | Pre-operation | Quarry Manager/Ecologist |
| B18 | Nest boxes specified in the NBMP are to be installed prior to removal of hollow bearing trees | Pre-operation | Quarry Manager/Ecologist |
| B19 | <p>Engage a qualified and experienced ecologist to undertake preclearing surveys of flora and fauna habitat within 48 hours of clearing. The pre-clearing survey scope will include:</p> <ul style="list-style-type: none"> Inspecting habitat trees for resident fauna, including inspections of hollows, nests and under exfoliating bark Active searches for reptiles, including checking of exfoliating rock, rock crevices, and woody debris within the proposal footprint Mapping and marking any significant habitat features (large woody debris or hollow logs) for relocation into adjacent habitat areas Pre-clearing surveys for threatened plants not identified during the EIS Remove large woody debris and rock fragments using excavator grabs or manual handling if practicable Place intact large woody debris within adjacent areas of intact vegetation Scrape and stockpile leaf litter and topsoil separately from deeper fill material Inspection for plant pathogens | Operation | Quarry Manager/Ecologist |
| B20 | The hollow-bearing/habitat tree clearance protocol will include the following measures: | Operation | Quarry Manager/Ecologist |

| EMS Ref. | Environmental Management Measure | Timing | Responsibility |
|----------|---|-----------|--------------------------|
| | <ul style="list-style-type: none"> Habitat trees will be retained for at least 48 hours after initial clearing. Ecologist to supervise felling of all hollow-bearing trees. Rotating grabs must be used to assist in the gentle lowering of hollow-bearing trees. Where possible, retain and relocate hollow bearing tree sections into areas adjacent to the quarry footprint. Ecologist to check hollows once the tree has been placed safely on the ground and relocate fauna, as required. Wildlife should not be handled wherever possible. Quarry staff should only handle wildlife in an emergency situation but snakes should never be handled. Uninjured wildlife should be gently encouraged to leave the site by the ecologist. Injured wildlife would be taken to a veterinarian for treatment and care if necessary. Nocturnal animals are to be released on or after dusk, close to the point of capture within retained vegetation. | | |
| B21 | Clearing is to be supervised by an experienced ecologist and a Clearing Report prepared (see Section 5.3). | Operation | Quarry Manager/Ecologist |
| B22 | Prior to clearing, contact the local veterinarian to warn them their assistance may be required if any wildlife are injured during clearing. | Operation | Quarry Manager |
| B23 | Cleared vegetation will be mulched and stockpiled onsite for revegetation works. Mulch stockpiles will be constructed with an impervious perimeter bund at least 300 mm high, a sump capable of capturing 75 mm of rainfall and a stable outlet. | Operation | Quarry Manager |
| B24 | Mulch stockpiles contaminated by weeds or pathogens will be managed in accordance with <i>The pasteurised garden organics exemption 2016</i> | Operation | Quarry Manager |

| EMS Ref. | Environmental Management Measure | Timing | Responsibility |
|----------|---|-----------------|--------------------------|
| B25 | <p>Implement hygiene measures prior to entering and when leaving non-operational areas of the site (i.e. outside of access tracks, work area and quarry pit) to control weeds, Myrtaceae (Myrtle Rust), <i>Phytophthora cinnamomi</i> (Phytophthora) and Chytrid fungus. Measures include:</p> <ul style="list-style-type: none"> Limiting the number of access points and using existing access tracks Wash down vehicles Wash down boots and equipment Scheduling works to occur in dry conditions All soil and plant materials brought onto the site be certified free of weeds and pathogens <p>Additional controls for Myrtle Rust are:</p> <ul style="list-style-type: none"> Vehicles are to be washed with Truckwash (or equivalent) Personnel working in an infected site should shower and launder clothes (especially hats) before moving to another bushland site Footwear and equipment to be sprayed with 70% methylated spirits in 30% water <p>Additional controls for Chytrid are:</p> <ul style="list-style-type: none"> Footwear and equipment to be sprayed with benzalkonium (Toilet Duck) or 70% methylated spirits in 30% water Disinfect hands or change gloves between the handling of individual frogs and between each site Only handle frogs when necessary. Use the one bag-one frog approach | Operation | Quarry Manager |
| B26 | If any pest animals are observed on site, call the Local Land Services for guidance. | Operation | Quarry Manager |
| B27 | <p>If an unexpected threatened species (i.e. not considered in the EIS) or unexpected impact on a threatened species (i.e. not considered in the EIS) is identified within the site:</p> <ul style="list-style-type: none"> Stop work Contact an ecologist to undertake an assessment Gain appropriate approval, if required | Operation | Quarry Manager/Ecologist |
| B28 | At the end of the quarry life all infrastructure will be decommissioned and removed, unless otherwise agreed by the Secretary | Decommissioning | Quarry Manager |

5. Monitoring and reporting

5.1 Environmental inspections and monitoring

General environmental inspection requirements are detailed in Section 8 of the EMS. Inspections, monitoring and reporting specific to the BRMP that will be implemented during operation of the quarry are listed below in Table 5-1, along with who is responsible.

Additional monitoring is outlined in the Rehabilitation Plan (Appendix C).

Table 5-1 Typical BRMP monitoring program

| Aspect | Details | Responsibility |
|---------------------------------------|---|----------------|
| Weekly monitoring | Site-wide inspection to identify any ad-hoc flora and fauna issues such as weed and pest infestations, injured wildlife, unapproved clearing, build-up of fuel loads, or the condition of bushfire access tracks. | Quarry Manager |
| Ecological monitoring during clearing | Monitoring of clearing activities to ensure all clearing is undertaken in accordance with the requirements of the BRMP i.e. identified habitat features to be retained are left intact, wildlife is safely relocated or handed over to a local wildlife rescue organisation for treatment (as required) | Ecologist |
| Post-clearing inspection | Inspection of cleared areas to confirm clearing has been undertaken within the approved disturbance footprint and any maintenance requirements for environmental control measures are identified and addressed | Ecologist |
| Nest box monitoring | Monitor nest boxes as outlined in the Nest Box Management Plan (Appendix D) | Ecologist |

5.2 Contingency plan

If the above monitoring detects an impact, a contingency plan or trigger and response plan is to be implemented, as shown below.

Table 5-2 Contingency plan

| Aspect | Trigger | Response |
|---------------------------------------|--|--|
| Weekly monitoring | Injury to fauna as a result of vehicle strike | Contact a veterinarian |
| | Weed or pest species identified | Contact local weeds and pest officer for advice on the best form of control and implement the required controls. |
| Ecological monitoring during clearing | Injured fauna during clearing | Cease clearing activities Contact a veterinarian |
| | Identification of pathogens during pre-clearance surveys | Contact local weeds and pest officer for advice on the best form of control |
| Post-clearing inspection | Unapproved clearing of vegetation | Cease clearing immediately and commence incident reporting and investigation in accordance with the EMS. DPE must be notified as soon as unapproved clearing has occurred. |

5.3 Reporting

The general reporting requirements are described in Section 8.5 of the EMS. The routine biodiversity monitoring will be recorded on the *Environmental Inspection Checklist*.

A summary of any monitoring results will be presented in the Annual Review (refer to Section 8.5 of the EMS) and the NQ website. In the Annual Review the monitoring results are to discuss:

- The relevant statutory requirements, limits or performance measures/criteria
- Requirements of relevant plans or programs
- A description of what rehabilitation has occurred in the past 12 months and what is proposed in the next 12 months
- Non-compliances and what actions were taken to ensure compliance
- Trends
- Discrepancies between the predicted and actual impacts
- Any measures implemented to improve the environmental performance of the operation

All records will be:

- Kept up to date to the satisfaction of the Secretary
- Maintained in a legible form
- Kept for at least 4 years
- Produced to any authorised officer of the EPA and/or DPE upon request

5.3.1 Complaint records

NQ will operate a telephone complaints line, during its operating hours, for the purpose of receiving any complaints from members of the public in relation to activities conducted at the site. All residents within 2 km of the site and along Tullymorgan-Jackybulbin Road east of the quarry are to be notified of the complaints line and it is to be displayed on the sign at the entrance to the quarry.

A legible record of all complaints in relation to water must include:

- The date and time of the complaint
- The method by which the complaint was made
- Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect
- The nature of the complaint
- The action taken in relation to the complaint, including any follow-up contact with the complainant
- If no action was taken, the reason why no action was taken

Any complaint needs to be entered into the complaints register on the NQ website at least monthly.

Further details regarding complaints are provided in the EMS.

5.3.2 Incident notification

The Quarry Manger will immediately (within 24 hours) notify DPE, EPA (131 555) and any other relevant agency of any incident. The incident is to be investigated in detail and within 7 days of the incident, a detailed report is to be submitted to DPE, EPA and any other relevant agency.

The report is to include:

- The cause, time and duration of the event
- The type, volume and concentration of every pollutant discharged as a result of the event
- The name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event
- The name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort
- Action taken by the licensee in relation to the event, including any follow-up contact with any complainants
- Details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event
- Any other relevant matters

The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided. The additional information must be provided to the EPA within the time specified in the request.

The EPA may also request a written report if they suspect an event has occurred that has caused, is causing or has the potential to cause material harm to the environment.

If DPE request remediation measures be implemented, they must be implemented to the satisfaction of DPE.

- Further details regarding incidents are provided in the EMS and Pollution Incident Response Management Plan (PIRMP).

6. Review and improvement

To continuously improve the environmental performance of the operations, the Quarry Manager will review the SWMP and its implementation. The review will be completed within 3 months of the submission of an:

- Annual Review
- Incident report
- Audit report
- Any modifications

The purpose of the review is to ensure that the system is meeting the requirements of the standards, policies and objectives. Between the scheduled reviews, a register of issues will be maintained to ensure that any issue raised by internal and external personnel associated with the quarry is recorded.

The review will consider (where available or applicable):

- Changes to the operation
- Site personnel comments
- Agency comments
- Audit findings
- Environmental monitoring records
- Complaints
- Details of corrective and preventative actions taken
- Environmental non-conformances, environmental inspection notices, inspection reports, and non-conformance reports
- Incident reports
- Changes in organisation structures and responsibilities
- The extent of compliance with objectives and targets
- The effect of changes in standards and legislation
- Co-ordination of environmental management of sub-contractors

A record of the review is maintained by the Quarry Manager and kept on site.

6.1 Updates

The outcomes of the above reviews may include amendments to the BRMP and supporting documentation, updates to the Project aspects and impacts register, re-evaluation of the Project objectives and targets, or reallocation of Project resources. If any amendments are considered necessary, these need to be submitted to DPE within 4 weeks of the review for approval. With the agreement of the Secretary, the BRMP can be submitted on a staged basis and without consultation with all parties nominated to be consulted. If the submission of BRMP is to be staged; then it must clearly describe the specific stage/s of the development to which the BRMP applies; the relationship of this stage/s to any future stages; and the trigger for updating the plan.

During the revision of the BRMP, the operations associated with the development are to be managed as per the existing BRMP until the revised BRMP is approved by DPE.

Once approved, a copy of the revised BRMP will be made available on the NQ website and any amendments made communicated to relevant personnel.

Appendices

Appendix A – Agency consultation



Planning & Environment

Planning Services Resource Assessments

Name: Colin Phillips

Phone: 9274 6483

Email: colin.phillips@planning.nsw.gov.au

Mr Ben Luffman
Senior Environmental Scientist/Planner
GHD Pty Ltd
PO Box 1340
COFFS HARBOUR NSW 2450

Dear Mr Luffman,

Slys Quarry Expansion (SSD 6624) **Approval of Staged Submission of Biodiversity and Rehabilitation Management Plan**

I refer to your letter dated 12 April 2017, seeking the Secretary's approval, to submit an initial version of the Biodiversity and Rehabilitation Management Plan (B&RMP) without the inclusion of details concerning the Biodiversity Offset Strategy (BOS) required by the conditions of consent.

The Department understands that the applicant is making effective progress towards the application of a Biobanking Agreement for the BOS area.

The Secretary approves the submission of the initial B&RMP without the inclusion of BOS matters. The final version of the B&RMP, inclusive of BOS matters must be submitted to the Department prior to 30 November 2017.

Should you have any questions about this letter, please contact Colin Phillips at the details above.

Yours sincerely,

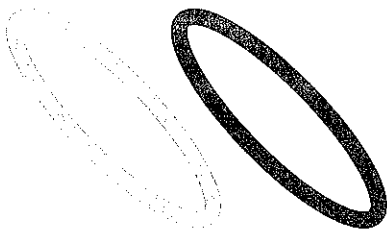
05/05/17

Matthew Sprott

Acting Director

Resource Assessments

as nominee of the Secretary



16 November 2016

Ben Luffman
Senior Environmental Scientist/Planner
GHD
PO Box 1340
Coffs Harbour NSW 2450
Email: ben.luffman@dhd.com

RE: Consultation regarding Environmental Management Strategy, Biodiversity and Rehabilitation Management Plan & Traffic Management plan, as required under Sly's Quarry Expansion Project, approved under SSD6624, Lot 2 DP 1055044

Thank you for the opportunity to comment on the draft reports provided to Council 31 October & 14 November 2016. Council's comments are provided under the headings below.

Environmental Management Strategy

- It is noted that you have provided a copy of an Environmental Management Plan (EMP); it is assumed that this document is intended to be the Environmental Management Strategy (EMS) as described in Schedule 5 of the consent.
- Comments are provided to the Traffic Management Plan and Biodiversity and Rehabilitation Management Plan; Appendices F & J of the EMP.
- It is noted that Section 4.1.2 refers to a Fauna & Flora Management Plan in Appendix F, this should be amended to reference the Biodiversity and Rehabilitation Management Plan.

Biodiversity and Rehabilitation Management Plan

- Part 8.2 of the EMP refers to Environmental Monitoring Schedule for the Biodiversity and Rehabilitation Management Plan (BRMP), being weekly, during and post clearing and quarterly monitoring. It is considered that Quarterly monitoring will provide a useful benchmarking as to rehabilitation - no detail is provided in the BRMP in regard to how or what happens during quarterly monitoring.
- The plan talks generally conceptually like the EIS and needs to specify specific details. The essential document of concern to Council is the Rehabilitation Plan - Appendix B of the BRMP. The Draft Rehabilitation Plan does not meet the requirements of the consent, Schedule 3 - condition 31 in that:
 - There is no detail of conceptual land forms, existing or final desired outcome for the different sites.
 - It is not clear how it integrates with the Biodiversity Offset Strategy of the consent.

- The plan only refers to weed species with the potential to occur at each of the sites/zones. There is no mapping of weeds or existing vegetation at each site. This should be provided to benchmark the success of the rehabilitation from the onset and including stage 1 area.
- Identification, the location and extent of weed infestation would dictate the removal methods (cut paste, foliage spray, high pressure or back pack etc.) and anticipated stages and timeframe of weed removal and management on the different areas to be rehabilitated.
- When weeds are removed the cleared areas should be revegetated. If seeding is proposed the seeds could be sourced from native vegetation on the site.

Traffic Management Plan

- Condition 24 of Schedule 3 requires that the intersection at the entrance on Tullymorgan-Jackybulbin Road be surveyed and required the works to be scheduled. There is no schedule provided in the plan.
- It is noted that the plan is also to be prepared in consultation with the RMS; Council has previously provided comments regarding concerns intersection of Tullymorgan – Jackybulbin Road and the Pacific Highway.

Council thanks you for this opportunity to provide comment. If you require further information please contact Pat Ridgway Council's Environment Planning and Regulatory Services on 6643 0288.

Yours faithfully,



Pat Ridgway
Senior Development Planner



Office of
Environment
& Heritage

Our Ref: DOC17/11929
Your Ref: e-mail dated 10/01/2017

Mr Ben Luffman
GHD
PO Box 1340
Coffs Harbour NSW 2450

Ben
Dear ~~Mr Luffman~~

Re: Sly's Quarry – Biodiversity and Rehabilitation Management Plan

Thank you for your e-mail dated 10 January 2017 seeking additional comments from the Office of Environment and Heritage (OEH) on the Biodiversity and Rehabilitation Management Plan (BRMP) for the expansion of Sly's Quarry. I appreciate the opportunity to provide further input.

We have reviewed Revision D of the Sly's Quarry Expansion BRMP as prepared by GHD in February 2017 and advise you that the OEH is satisfied that Revision D of the BRMP meets the requirements of the Minister's Condition of Approval No. 31 and mitigation measures pertaining to flora and fauna management as specified in the project Environmental Impact Statement.

In conclusion, we would like to thank GHD for involving us in the preparation of the BRMP. If you have any questions or would like any further advice on the BRMP, Mr Don Owner, Regional Operations Officer, Regional Operations, OEH, can be contacted on 6659 8233 or at don.owner@environment.nsw.gov.au.

Yours sincerely

Dimitri Young 22 February 2017

DIMITRI YOUNG
Senior Team Leader Planning, North East
Regional Operations

Contact officer: DON OWNER
6659 8233

Appendix B – BioBanking Agreement



**BioBanking agreement
ID number: 402**

**Under the
Threatened Species Conservation Act 1995
for
Markyl Pty Ltd
for
Tabbimobile Biobank Site
Lot 2 in Deposited Plan number 1055044**



**Office of
Environment
& Heritage**

BioBanking agreement under Part 7A Division 2 of the *Threatened Species Conservation Act 1995*

This agreement made on the 21st day of January 2019 between the Minister for the Environment of the State of New South Wales, being the Minister currently administering the *Threatened Species Conservation Act 1995* ('the Minister', which expression shall where the context admits, be deemed to include his or her successors in office) on the one part and Markyl Pty Ltd (ABN: 88 474 900 887) ('the landowner') of Lot 2 Tullymorgan-Jackylbulbin Road, Mororo, NSW, 2469 on the other part.

Background

- A The landowner is the owner of that parcel of land being:
Lot 2, Deposited Plan 1055044, Parish of Clarence Valley, County of Richmond; and
known as Tabbimobile Biobank Site ('the land').
- B The biobank site that is the subject of this agreement forms part of the land and is shown on the Figure 1 Biobank site boundary; Tabbimobile Biobank Site dated 21/11/2018. The biobank site covered by this agreement consists of approximately 180.50 hectares.
- C The landowner has requested the Minister to enter into a biobanking agreement under clause 14 of the BioBanking Regulation for the purpose of designating the biobank site on the land.
- D The Minister and landowner recognise that the landowner will receive biodiversity credits determined in accordance with the BioBanking Assessment Methodology (and set out in Annexure B) relating to the impact or likely impact of the management actions required to be carried out under Clause 3 and Annexure C of this agreement regarding the biodiversity values listed in Annexure B.
- E The landowner and the Minister recognise that the biobank site contains the following known Aboriginal objects and/or Aboriginal places as defined by the *National Parks and Wildlife Act 1974*:

None applicable
- Note: This biobanking agreement only recognises the existence of known Aboriginal objects and/or Aboriginal places. It does not provide for the protection of Aboriginal objects or Aboriginal places. The protection of Aboriginal objects and Aboriginal places is dealt with by the *National Parks and Wildlife Act 1974*. This agreement does not authorise any person to damage or to cause or permit damage to an Aboriginal object or Aboriginal place in, on or under the biobank site land (see clause 2.2).
- F The landowner and the Minister recognise that this biobanking agreement is being entered into for the purposes of the BioBanking Scheme established under Part 7A of the Act.
- G The landowner agrees to undertake the management actions and implement the management plans to improve the biodiversity values of the biobank site as set out in Annexure C.
- H The landowner agrees to undertake monitoring, reporting and record keeping as set out in Annexure D.

- I Accordingly, the parties hereby enter into the following biobanking agreement under section 127D of the Act.
- J The Minister has delegated the power to enter into this biobanking agreement to the Chief Executive of the Office of Environment and Heritage.

Now this agreement witnesses:

1. Interpretation

1.1 In this agreement, unless the contrary intention appears:

the **'Act'** means the *Threatened Species Conservation Act 1995* and any regulations from time to time in force thereunder

'adaptive management' means a process for improving management where the outcomes of monitoring indicate that minor alterations to the management actions or management plans are required to improve biodiversity values

'agreement' means this biobanking agreement entered into by the Minister and the landowner under section 127D of the Act for this biobank site

'animal' has the same meaning as in section 4 of the Act

'Annexure A' means Annexure A to this agreement entitled 'Maps of the biobank site'

'Annexure B' means Annexure B to this agreement entitled 'BioBanking Agreement Credit Report'

'Annexure C' means Annexure C to this agreement entitled 'Management actions and management plans'

'Annexure D' means Annexure D to this agreement entitled 'Monitoring, reporting and record keeping requirements'

'Annexure E' means Annexure E to this agreement entitled 'Payment schedules'

'annual report' means the annual report to be prepared by the landowner in accordance with item 2 of Annexure D

'authorised officer' means a person appointed under section 156B of the *National Parks and Wildlife Act 1974*

'biobank site' means that part of the land shown as the "biobank site" on the biobank site boundary map

'biobank site boundary map' means the map entitled Figure 1 Biobank site boundary; Tabbimobile Biobank Site dated 21/12/2018 and included in Annexure A

'Biobanking Agreement Credit Report' means the report contained in Annexure B generated by a BioBanking Assessor for the biobank site using the BioBanking Assessment Methodology and the BioBanking Credit Calculator which includes the number and type of biodiversity credits to be created on the biobank site

'biobanking agreements register' means the register of biobank sites kept by the Chief Executive under Part 7A of the Act

'BioBanking Assessment Methodology' means the rules established under section 127B of the Act

'BioBanking Regulation' means the Threatened Species Conservation (Biodiversity Banking) Regulation 2008

'BioBanking Scheme' means the Biodiversity Banking and Offsets Scheme established under Part 7A of the Act

'BioBanking Trust Fund' means the fund established under Part 7A of the Act to hold funds from the sale of biodiversity credits (the Total Fund Deposit)

'biodiversity credits' means biodiversity credits created under Part 7A of the Act

'biodiversity credits register' means the register of biodiversity credits kept by the Chief Executive under Part 7A of the Act

'biodiversity values' has the same meaning as in section 4A of the Act

'Chief Executive' means the Chief Executive of the Office of Environment and Heritage

'commencement date' means the date this agreement commences under clause 18 of this agreement

'critical habitat' has the same meaning as in section 4 of the Act

'day' means any day including Saturdays, Sundays and public holidays

'development' has the same meaning as in section 127(1) of the Act

'Chief Executive' has the same meaning as in section 4 of the Act

'ecological burn' means a burn to improve biodiversity values carried out as part of the management of fire for conservation

'fee unit' has the same meaning as in the BioBanking Regulation

'first payment date' means the date the balance in the relevant biobank site account is equal to or greater than 80% of the Total Fund Deposit for the first time

'Fund Manager' means the person appointed by the Minister from time to time under Part 7A of the Act as the Fund Manager to manage the BioBanking Trust Fund

GST has the same meaning as given to that term in *A New Tax System (Goods and Services Tax) Act 1999* (Commonwealth) and any other Act or regulation relating to the imposition or administration of the GST

'land' means that parcel or parcels of land which contains the biobank site as described in paragraph A of this agreement

'management action' means the actions to be carried out by the landowner on the biobank site to improve biodiversity values for which biodiversity credits may be created. Such actions are set out in of Annexure C. A reference to a management action includes a reference to refraining from doing anything, whether or not that thing was being done beforehand

'management of fire for conservation' means the controlled application of fire under specified environmental and weather conditions to a predetermined area and

at the time, intensity and rate of spread required to attain planned improvement of biodiversity values

'management of grazing for conservation' is the implementation of a variable and adaptive stock grazing regime for improving biodiversity values, such as for controlling exotic weeds or vegetation biomass, or enhancing the competitiveness of native perennial species. Typically it involves short periods of intensive grazing between long periods of little or no grazing. Management of grazing for conservation differs with site condition, specific management goals, seasonal conditions and regions

'management payments' means the payments to be made to the landowner in accordance with the payment schedules and the requirements in Annexure E

'management plans' means the management plans to be implemented by the landowner in carrying out the management actions and included in Section 3 and Section 4 of Annexure C (or such other management plans as approved by the Chief Executive in accordance with the provisions of Annexure C)

'management zone' means those areas of the biobank site identified on the map entitled Figure 3 Management zones; Tabbimobile Biobank Site dated 21/11/2018 and included in Annexure A

'maximum operational surplus' has the same meaning as in clause 33(2) of the BioBanking Regulation

'Minister' means the Minister for the time being administering the Act and where not repugnant to the context includes the servants and agents of the Minister

'native animal' has the same meaning as in section 5 of the NPW Act

'native plant' has the same meaning as in section 5 of the NPW Act

'native vegetation' has the same meaning as in section 6 of the NV Act

'NPW Act' means the *National Parks and Wildlife Act 1974* and any regulations from time to time in force thereunder

'NV Act' means the *Native Vegetation Act 2003* (NSW)

'OEH' means the Office of Environment and Heritage

'ongoing' in relation to the timing of carrying out a management action means commencing on the commencement date or first payment date (as indicated) and continuing in perpetuity, unless specified otherwise

'operational deficit' has the same meaning as in clause 31(2) of the BioBanking Regulation

'operational deficit threshold' has the same meaning as in clause 32(2) of the BioBanking Regulation

'operational surplus' has the same meaning as in clause 31(3) of the BioBanking Regulation

'owner' has the same meaning as in section 127(1) of the Act and includes successors in title referred to in section 127J of the Act

'party' means a party to this agreement

'payment schedules' means the tables entitled 'payment schedule' and 'in perpetuity management costs' included in Annexure E

'pesticide' has the same meaning as in section 5 of the *Pesticides Act 1999* which includes herbicides, insecticides, fungicides, baits and rodenticides

'plant' has the same meaning as in section 4 of the Act

'planting schedule' means the schedule at item 6.6 of Section 1, Annexure C

'processing fee' means the processing fee which is to accompany an application to enter into a biobanking agreement as required by clause 14 of the BioBanking Regulation

'record keeping requirements' means those record keeping requirements set out in item 3 of Annexure D

'regrowth' has the same meaning as in section 9 of the NV Act

'relevant biobank site account' means the biobank site account within the BioBanking Trust Fund kept by the Fund Manager in accordance with clause 30(1) of the BioBanking Regulation

'remnant native vegetation' has the same meaning as in section 9 of the NV Act

'sensitive threatened species' means any threatened species, populations or ecological communities or any critical habitat (or any area or areas of land proposed to be identified as critical habitat), information relating to the location of which must not be made available to the public on a register kept under Part 7A of the Act, as required by clause 48(1)(a) or (b) of the BioBanking Regulation

'threatened species, populations and ecological communities' and **'threatened species, population or ecological community'** have the same meaning as in the Act

'Total Fund Deposit' has the same meaning as in clause 26(1) of the BioBanking Regulation

'waste' has the same meaning as in the *Protection of the Environment Operations Act 1997*.

- 1.2 A word or expression that indicates one or more particular genders shall be taken to indicate every other gender. A reference to a word or expression in the singular form includes a reference to the word or expression in the plural form, and vice versa.
- 1.3 Any reference to an action, or carrying out an action, includes a reference to doing anything or refraining from doing anything.
- 1.4 Any reference to a person shall be deemed to include a corporate body and vice versa.
- 1.5 Any covenant or agreement on the part of two or more persons shall be deemed to bind them jointly and severally.

- 1.6 The schedules and Annexures to this agreement form part of this agreement.
- 1.7 Any notes included in the agreement do not form part of the agreement.

2. Status of this agreement

The parties agree that this agreement is a biobanking agreement within the meaning of section 127D of the Act.

3. Use of the biobank site

The landowner covenants with the Minister as follows:

General responsibilities

- 3.1 Except as otherwise permitted by this agreement, the landowner must not carry out any act or omit to carry out any act, or cause or permit any act to be carried out or any act not to be carried out which act or omission may harm biodiversity values on the biobank site, including but not limited to any native animals, native plants, threatened species, populations and ecological communities, and their habitats.

Note: The clearing of native vegetation that is otherwise permissible in accordance with the NV Act (whether it is permissible under a Property Vegetation Plan, routine agricultural management activity (as defined under the NV Act), or is otherwise permitted under Part 3 of that Act) can only be carried out on the biobank site to which this agreement applies if it is also permissible under this agreement. Item 5.1 of the management actions contained in Section 1 of Annexure C of this agreement sets out the limited circumstances in which native vegetation can be cleared on the biobank site. Annexure C of this agreement also contains limited exceptions in relation to when a landowner is not required to comply with the management actions contained in Annexure C.

Cultural heritage

- 3.2 To avoid any doubt, nothing in this agreement is to be construed as authorising (including, but not limited to, by way of a consent, permit, approval or authorisation of any kind for the purposes of Part 6 of the NPW Act) any person to damage or to cause or permit damage to an Aboriginal object or Aboriginal place in, on or under the biobank site.

Obtaining of consents, permits and authorisations

- 3.3 The landowner is responsible for obtaining all necessary licences, consents, authorisations, permits or approvals in order to lawfully comply with and carry out its obligations under this agreement or to undertake or enable any other identified matter under clause 3.5 and/or clause 3.6.

Development

- 3.4 The landowner must not carry out, or cause or permit to be carried out, any development (as defined under clause 1 above) on the biobank site, unless the development:

3.4.1 is permitted or required under Annexure C, or

3.4.2 is identified in the table entitled 'Permissible development on the biobank site' contained in clause 3.5 or identified in the table entitled 'Permissible human activities on the biobank site' contained in clause 3.6.

Permissible development

3.5 The landowner shall be permitted to carry out, or cause or permit to be carried out, the development specified in the following table in the management zone specified in the table.

| Permissible development on the biobank site | |
|--|-------------------|
| Description of development | Management zone/s |
| any development permitted or required as part of a management action under Annexure C, including but not limited to maintaining existing access tracks on the biobank site, building shed/s to store weed control chemicals or other pesticides on the biobank site, building fences to manage stock on the biobank site and building structures to restore natural water flow regimes | All zones |
| any development within the meaning of section 127(1) of the Act reasonably considered necessary to remove or reduce an imminent risk of serious personal injury or damage to property | All zones |
| The construction of fencing for the purpose of controlling access | All zones |

Permissible human activities

3.6 Notwithstanding clause 3.1, the landowner may carry out or cause or permit to be carried out any human activities specified in the following table, in the management zone specified in the table.

| Permissible human activities on the biobank site | |
|--|-------------------|
| Description of human activities | Management zone/s |
| Any human activity reasonably considered necessary to remove or reduce an imminent risk of serious personal injury or damage to property. | All zones |
| Any activity or any development permitted or required as part of a management action under Annexure C, including but not limited to mustering stock or feral herbivores including with mechanised vehicles, spraying or mechanically removing weeds, planting tubestock or sowing seeds of native vegetation, using drip torches, thinning native vegetation, disturbing soil temporarily to control erosion, encouraging regeneration, controlling nutrients or restoring natural flow regimes, laying baits, trapping or otherwise controlling vertebrate pests and feral herbivores and overabundant native herbivores. | All zones |

| Permissible human activities on the biobank site | |
|--|-------------------|
| Description of human activities | Management zone/s |
| Any activity required to undertake permissible development | All zones |
| Passive recreational activities including bushwalking, and/or riding mechanised but not motorised vehicles (mechanised but not motorised vehicles are vehicles with wheels but not with internal combustion engines) on formed tracks or roads | All zones |

4. Management actions and management plans

4.1 The landowner must carry out or procure the carrying out of the management actions in accordance with the timing, manner and requirements of Annexure C.

4.2 The landowner must:

- i. implement or procure the implementation of; and
- ii. comply or procure the compliance with the management plans in accordance with the timing, manner and requirements of Annexure C.

Note: The management actions listed in Annexure C include requirements to take certain action and requirements to refrain from taking certain action.

4.3 Unless otherwise indicated by Annexure C, the landowner must ensure that

- i. the management actions to be carried out in accordance with clause 4.1; and
- ii. the management plans to be implemented and complied with in accordance with clause 4.2 are carried out in perpetuity, commencing from the date indicated in Annexure C.

4.4 The landowner's obligations under this clause are subject to clause 12.4 of this agreement.

5. Total Fund Deposit

For the purpose of clause 26 of the BioBanking Regulation, the Total Fund Deposit for this biobank site is \$423,804.00 excluding GST, determined in accordance with Part 6 of the BioBanking Regulation.

Note: Part 6 of the BioBanking Regulation prescribes the amount that must be deposited in the BioBanking Trust Fund before the first transfer (or retirement without transfer) of each biodiversity credit can be registered. The prescribed amount is the Total Fund Deposit, or proportion thereof if a partial sale of credits is made. The Total Fund Deposit is the present value of the total of all management payments listed under this agreement, as determined by the Chief Executive.

6. Biodiversity credits

- 6.1 The Chief Executive is permitted under section 127W(4) of the Act, to create (without application by the landowner under section 127W(4) of the Act) the biodiversity credits listed in Annexure B on the commencement date.
- 6.2 The biodiversity credits listed in Annexure B will be created for the biobank site.
- 6.3 At the commencement date, the landowner is entitled to receive \$2,389,046.00 excluding GST, to be satisfied in full by the creation of the biodiversity credits listed in Annexure B.

Note: \$2,389,046.00 is a best estimate of the market value of the biodiversity credits at the time of creation. The market value has been estimated by reference to the notional Part B amount as determined by the landowner in the credit pricing spreadsheet or reference to the notional Part B amount for the last traded biodiversity credit of the same or similar type.

The Part B amount is that part of the sale price received by the landowner (or another landowner if reference is made to a previous sale of that biodiversity credit type) after the entire Total Fund Deposit is satisfied and deposited into the BioBanking Trust Fund.

The sale price of each biodiversity credit will be negotiated between the landowner and the buyer and will be affected by supply and demand for each biodiversity credit. The final price at the time of transfer of the biodiversity credit (or retirement of the biodiversity credit without transfer) may not reflect this estimated amount.

The Minister does not warrant that the landowner will be able to sell biodiversity credits for the estimated market value.

7. Monitoring, record keeping and reporting

- 7.1 The landowner must comply with the monitoring and record keeping requirements as set out in Annexure D.
- 7.2 The landowner must submit an annual report complying with the requirements set out in Annexure D to the Chief Executive within the timeframe specified in Annexure D.
- 7.3 The landowner must notify the Chief Executive in writing as soon as practicable after becoming aware of any failure to comply with this agreement or any other incident at the biobank site (or surrounds) which results or may result in a sudden or significant decline of biodiversity values at the biobank site. In particular, the landowner must notify the Chief Executive of:
- 7.3.1 the nature, location and time of the incident
 - 7.3.2 the impact of the incident on biodiversity values
 - 7.3.3 the measures that have been taken or will be taken in response to the incident
 - 7.3.4 any provision of this agreement which may have been breached
 - 7.3.5 the extent of any damage caused or permitted by the incident
 - 7.3.6 the measures which have been taken or will be taken to prevent a recurrence of the incident.

8. Use of the land by servants, agents, lessees or licensees

The landowner must incorporate all relevant requirements of this agreement in any lease or licence issued for the biobank site, and must at all times ensure that any servant, contractor, consultant, agent, lessee or licensee occupying the biobank site area shall be aware of, and not undertake any act inconsistent with, the landowner's obligations under this agreement.

9. Change of land ownership or subdivision of land

9.1 The landowner must notify the Chief Executive in writing of any change of:

9.1.1 ownership of the biobank site, or any part thereof, within seven (7) days after the change of ownership of the biobank site; or

9.1.2 lessee of the biobank site, or any part thereof, within twenty-eight (28) days after the change of lessee or licensee of the biobank site.

The notice must include the name and address and other relevant contact details of the new landowner, lessee or licensee.

9.2 The landowner must provide a copy of this agreement, including a copy of each management plan and a copy of all records required to be kept under the record keeping requirements, to the transferee before completion of the assignment, transfer, disposal or sale of any interest in the biobank site.

9.3 The landowner must notify the Chief Executive in writing no less than 14 days before the biobank site is subdivided.

9.4 The landowner cannot assign, transfer, dispose of or sell its rights, title or interest in part of the land containing any area of the biobank site unless the landowner and the Minister have first agreed to vary the agreement to apportion the obligations and rights under the agreement in respect of that part of the biobank site that will be assigned, transferred, disposed of or sold.

10. Right to enter biobank site for research and monitoring

10.1 The landowner must permit access to the biobank site at any time to the Minister, the Chief Executive, an authorised officer or an officer of OEH for the purpose of carrying out research or monitoring in relation to the biodiversity values on the biobank site for which biodiversity credits have been created under this agreement, but only where the person has given reasonable notice to the landowner and the landowner's agent, lessee or licensee, of the intention to enter the biobank site for that purpose and the nature of the research or monitoring that will be conducted. In exercising its right of access under this clause, the Minister, the Chief Executive, an authorised officer or an officer of OEH must ensure that such access does not:

10.1.1 result in physical or radio interference which obstructs, interrupts or impedes the use or operation of any telecommunications network and telecommunications service of a lessee or licensee of a part of the land; or

10.1.2 interfere with the electricity supply separate from the landowner's electricity supply to any part of the land occupied by a lessee or licensee.

10.2 The Minister, Chief Executive, an authorised officer or an officer of OEH may make a written request to the landowner to consent to any other person specified in the written request to enter the biobank site for the purpose of carrying out the research or monitoring referred to in clause 10.1, whether or not that person will accompany the Minister, Chief Executive, an authorised officer or an officer of OEH. The landowner will not unreasonably withhold consent.

10.3 Clauses 10.1 and 10.2 do not affect or limit the powers of authorised officers under the NPW Act to enter premises for the purpose of determining whether there has been compliance with, or contravention of, this agreement.

11. Agreement preparation expenses

Each party bears its own costs in connection with the preparation and execution of this agreement.

12. Obligations of the Minister

12.1 Subject to clauses 12.2 and 12.3 and starting from the first payment date, the Minister is required to direct the Fund Manager to make such management payments specified in the payment schedules from the relevant biobank site account to the landowner, at such intervals specified in the payment schedules.

12.2 The Minister may only make such a direction if:

12.2.1 the relevant biobank site account has sufficient funds to cover the management payment, and

12.2.2 the landowner has submitted the annual report for the preceding reporting period in accordance with clause 7.2 and Annexure D of this agreement, and

12.2.3 the Minister has reviewed the annual report for the preceding reporting period and is satisfied that the landowner has complied with their obligations set out in this agreement in the preceding period.

12.3 The landowner acknowledges that the Minister may, with the agreement of the landowner, direct that the management payments should not be made, or should be reduced, for a specified period of time or until further notice if the biobank site account has an operational deficit greater than the operational deficit threshold.

Note: Withholding or lowering payments when funds in the account are below the maximum operational deficit may help to preserve the long-term financial viability of the fund for the landowner.

12.4 If the Minister, with the agreement of the landowner, directs that management payments be reduced or not be made for a specified period of time or until further notice, then:

12.4.1 the Minister may, by written agreement with the landowner, suspend or vary any of the landowner's obligations to carry out management actions under this agreement for the same period of time or some other period, and

12.4.2 despite clause 4 of this agreement, the landowner's obligations to carry out management actions under this agreement are suspended or varied in accordance with the agreement.

The Minister must not agree to any variation or suspension under this clause unless satisfied that the variation or suspension does not have a negative impact on the biodiversity values protected by the agreement.

12.5 The landowner acknowledges that the Minister may, in addition to the management payments, direct additional payments to be paid from the BioBanking Trust Fund to the landowner, but only in circumstances where the biobank site account has an operational surplus, the operational surplus amount exceeds the maximum operational surplus for the biobank site account, and the amount the Minister directs to be paid does not exceed the difference between the operational surplus amount and the maximum operational surplus.

12.6 All management payments shall be paid into the bank account nominated by the landowner in accordance with the payment schedules.

13. Ownership of the land and registration of this agreement

13.1 The landowner represents and warrants to the Minister that as at the date of this agreement it is:

13.1.1 the legal and beneficial owner of the land; or

13.1.2 legally and beneficially entitled to become the owner of the land and will become the legal and beneficial owner of the land, prior to the date that this agreement is to be registered under clause 13.2 of this agreement.

13.2 As contemplated by section 127I(1) of the Act, the Minister agrees to notify the Registrar General when this agreement has been entered into, varied or terminated so the Registrar General can register the agreement, variation or termination by making an entry concerning the agreement, variation or termination in the relevant folio of the Register kept under the *Real Property Act 1900* (NSW) for the land.

13.3 The fee to register the agreement in accordance with section 127I(1) of the Act will be taken from the processing fee, except as provided by clause 13.4.

13.4 If the landowner elects to identify the exact boundaries of the biobank site on the Deposited Plan for the land, the landowner must bear any additional costs of registration.

14. Variation and termination

14.1 Subject to clause 14.2, this agreement can only be varied or terminated in accordance with the Act.

14.2 The landowner waives any right to request voluntary termination in accordance with subsections 127G(5) and (6) of the Act.

14.3 This clause does not affect the ability of the Minister and the landowner to terminate this agreement by consent under section 127G(2)(a) of the Act (including in the circumstances described in subsection 127G(6) of the Act).

Note: Clause 14.2 ensures that the landowner can obtain Commonwealth Government tax advantages that apply to conservation covenants. Those tax advantages would not be available if the right to request termination of the agreement under subsections 127G (5) and (6) of the Act was available.

Subsections 127(5) and (6) of the Act give landowners the right to request termination of the agreement where credits are not sold within 3 months or after 5 years of entering the agreement. The effect of clause 14.2 is that the landowner gives up that right. This is essential as the tax advantages are only available where the Commonwealth Government has conferred conservation covenant status on biobank sites – and a requirement of this status is that the sites will operate permanently.

15. Indemnity and release

15.1 The landowner agrees to indemnify the protected persons against all expenses, losses, damages and costs that the protected person may sustain or incur as a result, whether directly or indirectly, of carrying out obligations under this agreement.

15.2 The indemnity given by the landowner does not cover any loss or damage that is caused by a negligent act or omission of the protected persons, or any loss or damage that is contributed to by a negligent act or omission of the protected persons to the extent of the protected persons' contribution to that loss or damage.

15.3 The landowner releases to the full extent permitted by law the protected persons from all claims and demands arising out of or in connection with, or as a consequence of, carrying out of obligations by the landowners under this agreement, or in connection with, or as a consequence of, a direction made by the Minister regarding the payment of management payments to the landowner under this agreement.

15.4 The release given by the landowner does not cover any claims and demands in respect of any loss or damage that is caused by a negligent act or omission of the protected persons, or any loss or damage that is contributed to by a negligent act or omission of the protected persons to the extent of the protected persons' contribution to that loss or damage.

15.5 It is immaterial to the obligations of the landowner under this clause that a claim or demand arises out of any act, event or thing that the landowner is authorised or obliged to do under this agreement or that any time waiver or other indulgence has been given to the landowner for any such obligation under this agreement.

In clauses 15.1–15.4:

(i) 'protected person' means:

- (a) the Minister
- (b) the Chief Executive
- (c) the employees or officers of the Office of Environment and Heritage
- (d) any other person acting under the direction or control of the Minister or Chief Executive for any purpose

- (e) the Crown in right of the State of New South Wales;
- (ii) 'claims and demands' means all actions, suits, claims, demands, proceedings, losses, compensation, damages, sums of money, costs, legal costs, charges, and expenses to which the protected persons are or may become liable for in respect of loss or damage to the fixtures of the biobank site, financial or economic loss, loss of opportunity or other consequential loss of the landowner, and injury of any kind to or death of any person claiming through the landowner and however sustained on or outside the biobank site.

16. Dispute resolution

- 16.1 Where there is a dispute, difference or claim (dispute), the party raising the dispute must notify the other party in writing of the nature of the dispute, including the factual and legal basis of the dispute.
- 16.2 Within 14 days of the written notice, the Chief Executive and the landowner, or nominated senior representatives of the parties, must confer to attempt to resolve the dispute, and if the dispute cannot be resolved within twenty-one (21) days of the written notice, the Chief Executive and the landowner will refer the matter to mediation.
- 16.3 The parties will agree on the terms of appointment of the mediator and the terms of the mediation in writing within twenty-eight (28) days, failing which the mediation will be at an end and either party may commence court proceedings in respect of the dispute, difference or claim.
- 16.4 If the matter has not been resolved within 28 days of the appointment of the mediator, the mediation process will be at an end and either party may commence court proceedings in respect of the dispute, difference or claim.
- 16.5 Notwithstanding the above clauses, the Minister, the Chief Executive or a person duly authorised by the Chief Executive, may enforce this agreement under the Act, or institute proceedings without first entering into the dispute resolution procedure set out in clauses 16.1, 16.2, 16.3, and 16.4.
- 16.6 Clause 10.1 of this agreement is not affected by these arrangements for dispute resolution.

17. Governing law

This agreement is governed by the laws of the State of New South Wales and the parties agree to submit to the jurisdiction of the courts of that State.

18. Commencement

This agreement shall have effect from the day it is executed by all parties.

19. Privacy statement

The landowner acknowledges and consents to the information contained in this agreement being made publicly available on the biobanking agreements register and, where biodiversity credits have been registered, on the biobanking credits register maintained by the Chief Executive and made available on the web.

Note: In accordance with the *Privacy and Personal Information Protection Act 1998* and the Act, some of the information contained in this agreement cannot be made available to the public.

20. Exercise of Minister's and Chief Executive's powers

- 20.1 The landowner acknowledges that the Minister may authorise any officer of OEH to exercise any of the Minister's functions under this agreement on the Minister's behalf.
- 20.2 The landowner acknowledges that the Chief Executive, may authorise any officer of OEH to do any thing that the Chief Executive authorises for the purposes of this agreement.

21. Notices

- 21.1 Any notice, consent, information, application or request that must or may be given or made to a party is only given or made if it is in writing and delivered or posted to that party at its address set out below, or faxed to that party at its fax number set out below:

The Minister

| | |
|-----------|---|
| Address | Biodiversity Conservation Trust PO Box A290 SYDNEY SOUTH NSW 1232 |
| Fax | (02) 9995 6795 |
| Attention | Manager, Agreements and Technical Services |

Landowner

| | |
|-----------|------------------------------|
| Address | PO Box 292 YAMBA NSW 2464 |
| Phone | 0427 822 667 |
| Attention | Mark Newman |

- 21.2 The name or title of the nominated officer or the address for the Minister referred to in clause 21.1 above may be updated from time to time by a further written notice being sent to the landowner by an officer of OEH advising of the new officer (or title of an office) and address to which such documents, information or notification may be sent.

21.3 For the avoidance of doubt, this clause does not fetter the Minister or Chief Executive's discretion to give or withhold from giving such notice, consent or permission.

Agreement annexures

Annexure A Maps of biobank site

Annexure B Biobanking Agreement Credit Report

Annexure C Management actions and management plans

Annexure D Monitoring, reporting and record keeping requirements

Annexure E Payment schedules

In witness where of the parties hereto have executed this agreement the day and year first above written.

Signed by Linda Bell

Director, Conservation Programs, Office of Environment and Heritage, as the Minister's delegate under Section 142A of the *Threatened Species Conservation Act 1995* in the presence of:



Signature of the Director

Date 21/1/2019



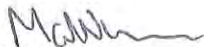
Witness signature

Date 21/1/2019

Witness name Denise Wallace

Witness address 59 Goulburn st, Sydney.

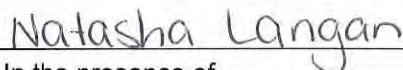
Signed by the landowner/s or director/s



Mark Newman signature

Date 9.1.19

Mark Newman – Landowner/Director



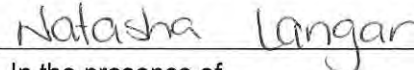
In the presence of



Kylee Newman signature

Date 9.1.19

Kylee Newman – Landowner/Secretary



In the presence of



Witness signature

Date 9.1.19

Witness name Natasha Langan

Witness address

253 Gardiners Rd

James Creek NSW 2463

Seal (if signing under seal):



Witness signature

Date 9.1.19

Witness name Natasha Langan

Witness address

253 Gardiners Rd

James Creek. NSW 2463

Annexure A: Maps of biobank site

Figure 1 Biobank site boundary; Tabbimobile Biobank Site (21/11/2018)

Figure 2 Vegetation zones; Tabbimobile Biobank Site (21/11/2018)

Figure 3 Management zones; Tabbimobile Biobank Site (21/11/2018)

Figure 4 Photo points; Tabbimobile Biobank Site (21/11/2018)

Figure 5 Property action plan; Tabbimobile Biobank Site (21/11/2018)

Figure 6 Fire management plan; Tabbimobile Biobank Site (21/11/2018)

Figure 7 Species polygon Koala; Tabbimobile Biobank Site (21/11/2018)

Figure 8 Species polygon – Brush-tailed Phascogale and Squirrel Glider; Tabbimobile Biobank Site (21/11/2018)

Figure 9 Threatened species – locations of Bordered Guinea Flower (*Hibbertia marginata*); Tabbimobile Biobank Site (21/11/2018)

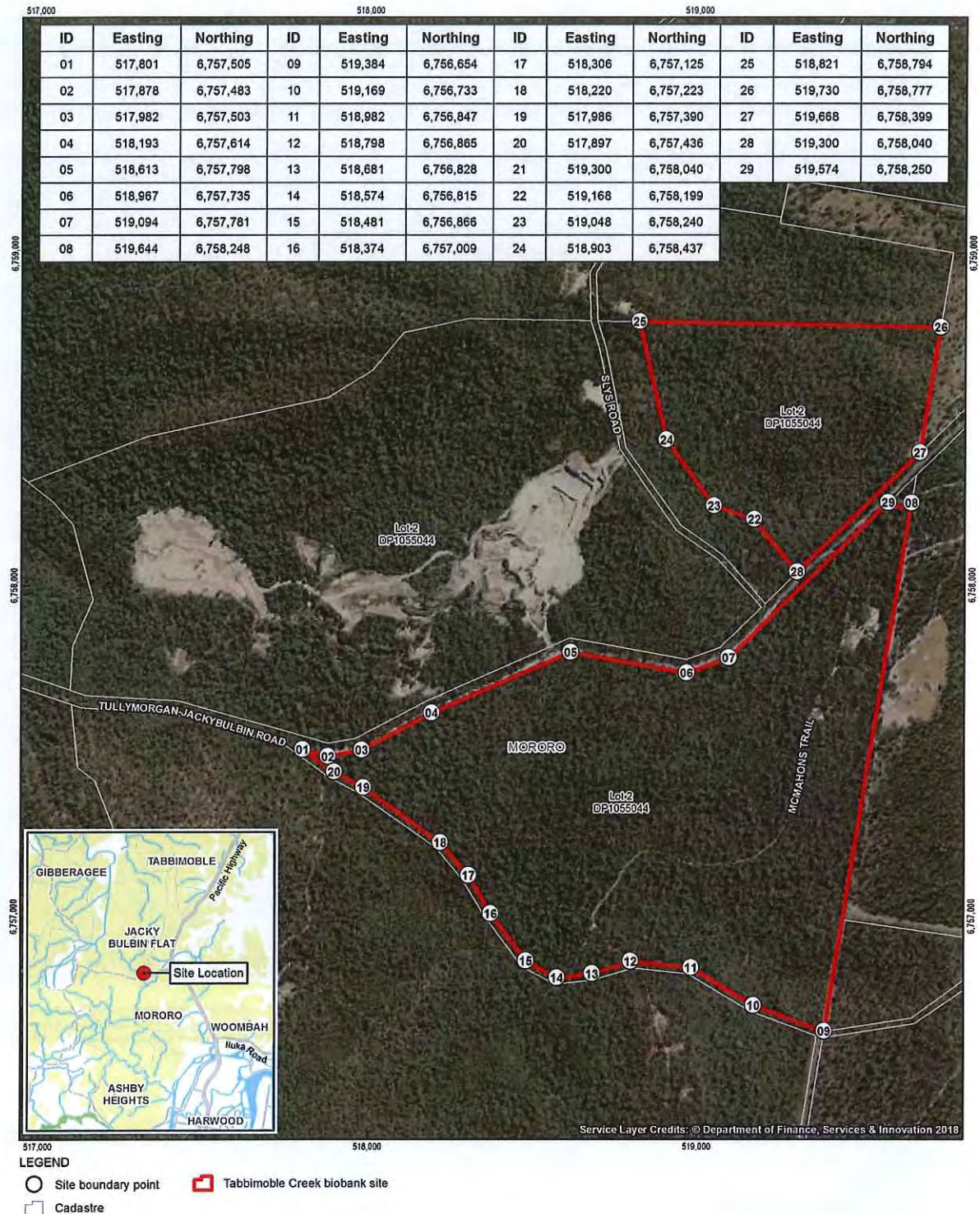


Figure 1 Biobank site boundary; Tabbimobile Biobank Site (21/11/2018)

KU
MN

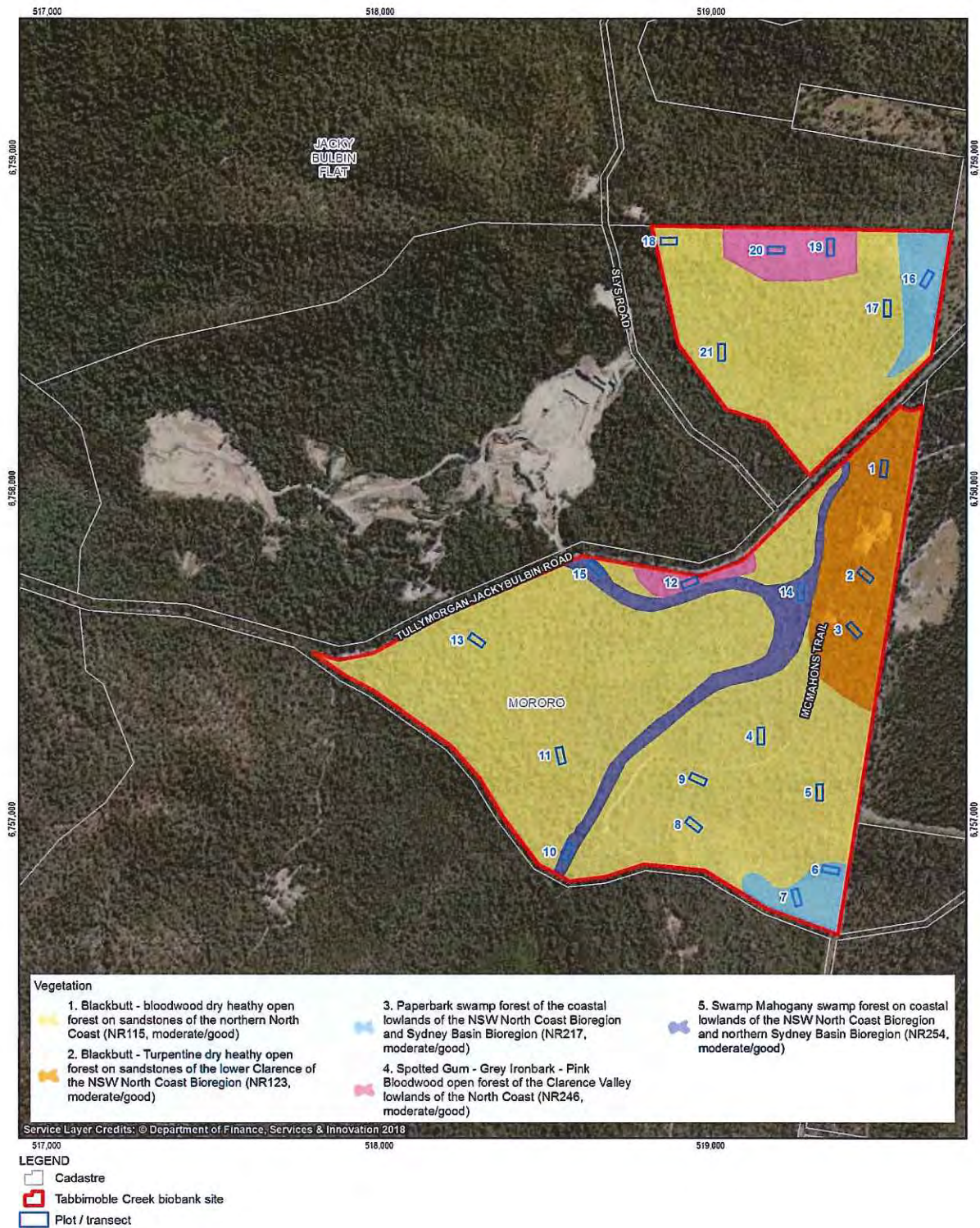


Figure 2 Vegetation zones; Tabbimoble Biobank Site (21/11/2018)

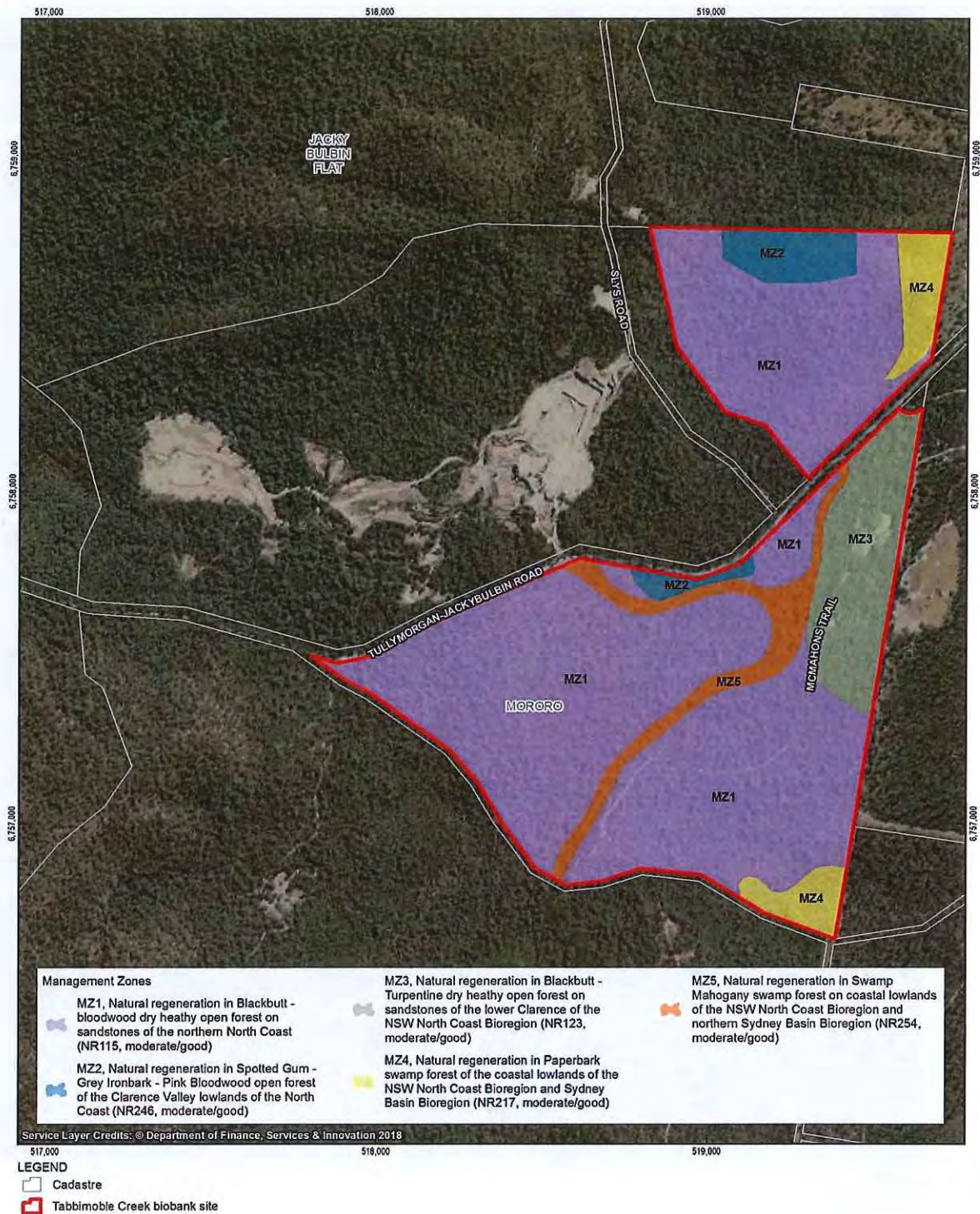


Figure 3 Management zones; Tabbimobile Biobank Site (21/11/2018)



Figure 4 Photo points; Tabbimobile Biobank Site (21/11/2018)

KU
MN

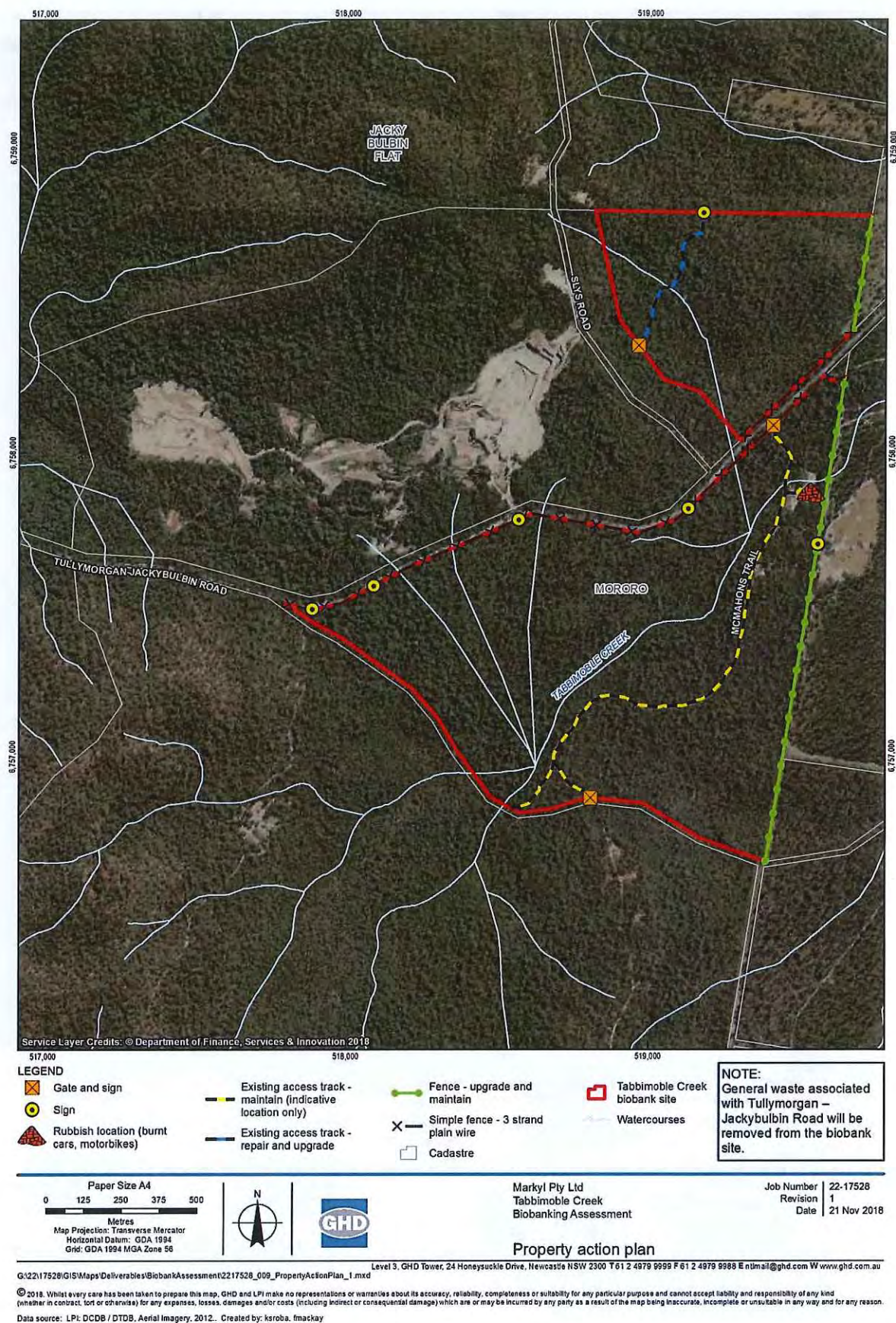


Figure 5 Property action plan; Tabbimobile Biobank Site (21/11/2018)

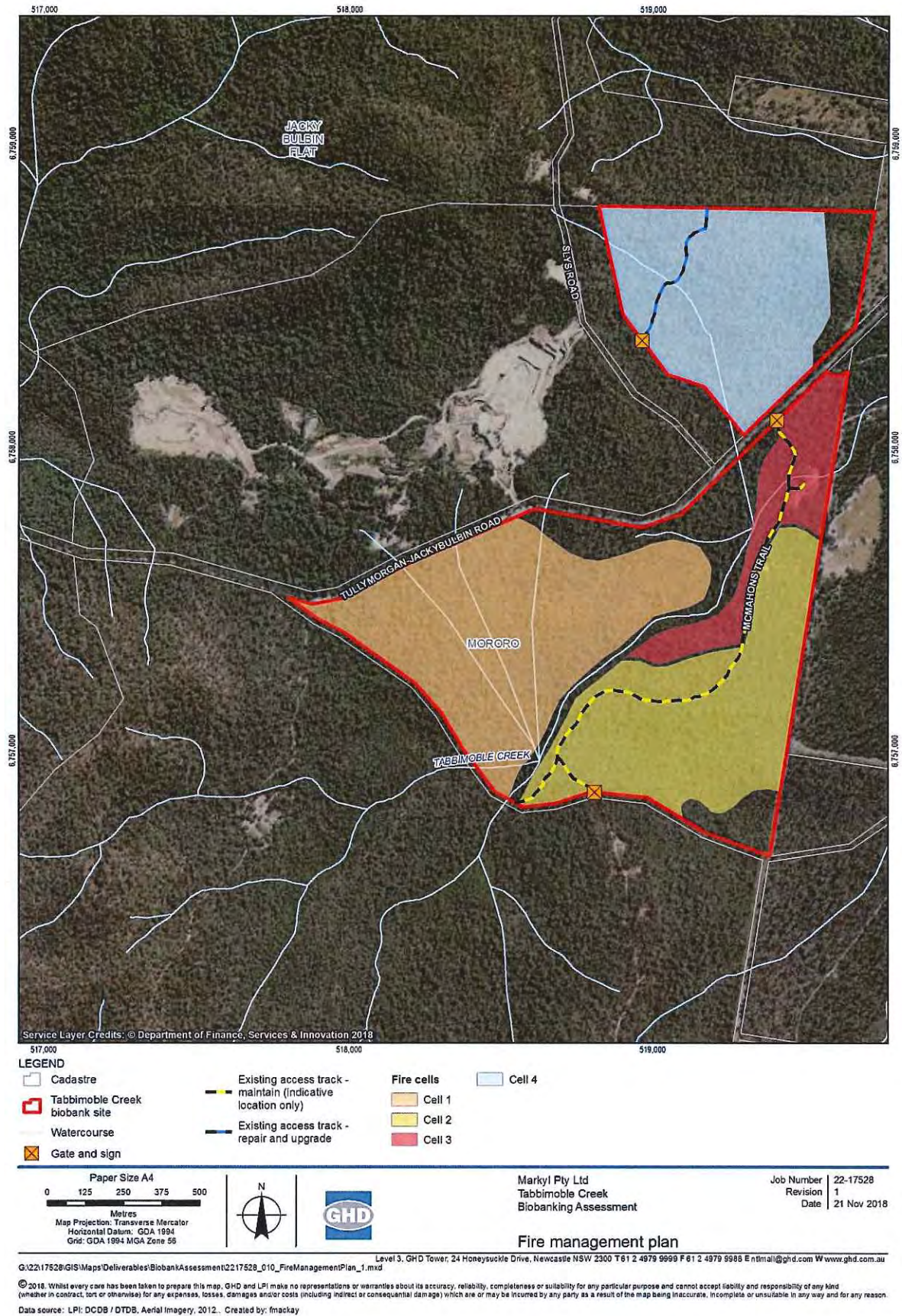


Figure 6 Fire management plan; Tabbimobile Biobank Site (21/11/2018)

KJ
MN



Figure 7 Species polygon Koala; Tabbimobile Biobank Site (21/11/2018)

W
W



**Figure 8 Species polygon – Brush-tailed Phascogale and Squirrel Glider;
Tabbimobile Biobank Site (21/11/2018)**

EW

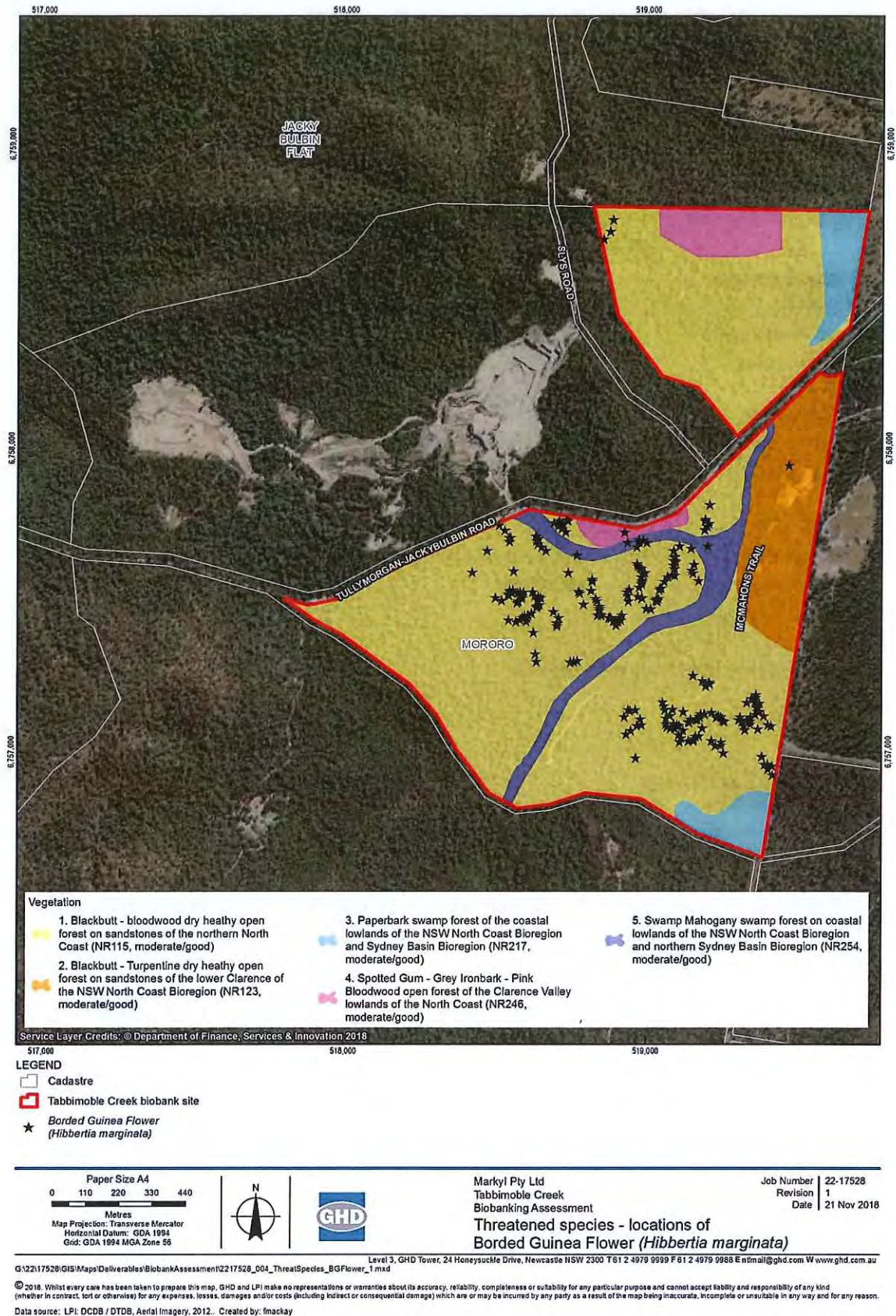


Figure 9 Threatened species – locations of Bordered Guinea Flower (*Hibbertia marginata*); Tabbimobile Biobank Site (21/11/2018)

Annexure B: Biobanking Agreement Credit Report

BioBanking credit report



Office of
Environment
& Heritage

This report identifies the number and type of credits required at a BIOBANK SITE

Date of report: 19/02/2018

Time: 3:41:34PM

Calculator version: v4.0

Biobank details

Proposal ID: 0120/2015/2337B
Proposal name: Tabbimoble Creek Biobank
Proposal address: Tullymorgan-Jackybulbin Road Mororo NSW 2469

Proponent name: Markyl Pty Ltd
Proponent address: PO Box 292 Yamba NSW 2464
Proponent phone: 0427 822 667

Assessor name: Arien Quin
Assessor address: Level 3 24 Honeysuckle Drive Newcastle NSW 2300
Assessor phone: 0405 443 341
Assessor accreditation: 0120

Additional information required for approval:

☐ Use of local benchmark

☐ Expert report...

- ☐ Brush-tailed Phascogale
- ☐ Squirrel Glider

Phascogale tapoatafa
Petaurus norfolcensis

☐ Request for additional gain in site value

Ecosystem credits summary

| Plant Community type | Area (ha) | Credits created |
|---|---------------|-----------------|
| Blackbutt - bloodwood dry heathy open forest on sandstones of the northern NSW North Coast Bioregion | 134.80 | 1,735.00 |
| Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion | 18.50 | 207.00 |
| Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion | 8.80 | 83.00 |
| Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion | 7.70 | 91.00 |
| Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion | 10.70 | 101.00 |
| Total | 180.50 | 2,217 |

Credit profiles

1. Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion, (NR246)

Number of ecosystem credits created 91
 IBRA sub-region Clarence Lowlands

2. Blackbutt - bloodwood dry heathy open forest on sandstones of the northern NSW North Coast Bioregion, (NR115)

Number of ecosystem credits created 1,735
 IBRA sub-region Clarence Lowlands

3. Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion, (NR123)

Number of ecosystem credits created 207
 IBRA sub-region Clarence Lowlands

4. Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion, (NR217)

Number of ecosystem credits created 83
 IBRA sub-region Clarence Lowlands

5. Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion, (NR254)

Number of ecosystem credits created 101
 IBRA sub-region Clarence Lowlands

Species credits summary

| Common name | Scientific name | Extent of impact Ha or individuals | Number of species credits created |
|-------------------------|------------------------|---------------------------------------|---|
| Bordered Guinea Flower | Hibbertia marginata | 2,746.00 | 19,497 |
| Squirrel Glider | Petaurus norfolcensis | 180.50 | 1,282 |
| Koala | Phascolarctos cinereus | 180.50 | 1,282 |
| Brush-tailed Phascogale | Phascogale tapoatafa | 39.00 | 277 |

Additional management actions

Additional management actions are required for:

| Vegetation type or threatened species | Management action details |
|--|---|
| Blackbutt - bloodwood dry heathy open forest on sandstones of the northern NSW North Coast Bioregion | Control of feral pigs |
| Blackbutt - bloodwood dry heathy open forest on sandstones of the northern NSW North Coast Bioregion | Exclude commercial apiaries |
| Blackbutt - bloodwood dry heathy open forest on sandstones of the northern NSW North Coast Bioregion | Exclude miscellaneous feral species |
| Blackbutt - bloodwood dry heathy open forest on sandstones of the northern NSW North Coast Bioregion | Feral and/or over-abundant native herbivore control |
| Blackbutt - bloodwood dry heathy open forest on sandstones of the northern NSW North Coast Bioregion | Fox control |
| Blackbutt - bloodwood dry heathy open forest on sandstones of the northern NSW North Coast Bioregion | Slashing |
| Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion | Control of feral pigs |
| Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion | Exclude commercial apiaries |
| Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion | Exclude miscellaneous feral species |
| Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion | Feral and/or over-abundant native herbivore control |
| Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion | Fox control |
| Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion | Slashing |
| Brush-tailed Phascogale | Exclude commercial apiaries |
| Brush-tailed Phascogale | Exclude miscellaneous feral species |

Brush-tailed Phascogale

Fox control

| | |
|---|---|
| Koala | Exclude miscellaneous feral species |
| Koala | Slashing |
| Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion | Control of feral pigs |
| Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion | Exclude commercial apiaries |
| Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion | Exclude miscellaneous feral species |
| Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion | Feral and/or over-abundant native herbivore control |
| Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion | Fox control |
| Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion | Maintain or re-introduce natural flow regimes |
| Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion | Slashing |
| Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion | Exclude commercial apiaries |
| Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion | Exclude miscellaneous feral species |
| Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion | Feral and/or over-abundant native herbivore control |
| Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion | Fox control |
| Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion | Slashing |
| Squirrel Glider | Fox control |
| Squirrel Glider | Slashing |
| Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion | Control of feral pigs |
| Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion | Exclude commercial apiaries |
| Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion | Exclude miscellaneous feral species |
| Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion | Feral and/or over-abundant native herbivore control |
| Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion | Fox control |
| Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion | Slashing |

Annexure C: Management actions and management plans

This Annexure C, together with Annexure D, is approved as a property management plan prepared by the landowner under the section 113B of the *Threatened Species Conservation Act 1995*.

A Management actions

A1 The landowner must undertake, or cause to be undertaken, the Management Actions contained in the following tables in this Annexure C:

- (i) Section 1: Standard management actions ('Section 1'); and
- (ii) Section 2: Additional management actions ('Section 2')

in accordance with the conditions specified in Section 1 and Section 2 and within the timeframes (if any) specified in Section 1 and Section 2.

A2 In carrying out the management actions, the landowner must implement and, at all relevant times comply with, the management plans as contained in the following tables in this Annexure C:

- (i) Section 3: Standard management plans ('Section 3'); and
- (ii) Section 4: Additional management plans ('Section 4')

in accordance with the conditions specified in those tables and management plans and within the timeframes (if any) specified in Section 3 and Section 4.

A3 Where a management action requires that something must not be done, the landowner must not do that thing and must not cause, authorise or permit any other person to do that thing.

A4 Notwithstanding A1 and A2 above, the landowner is not required to undertake the management actions so described if the action is inconsistent with anything (act or omission) required or authorised to be done by the landowner by or under any of the following:

- I. removal of noxious weeds under the *Noxious Weeds Act 1993*
- II. the control of noxious animals under the *Rural Lands Protection Act 1998*
- III. an obligation arising under an eradication order or pest control order under Part 11 of the *Rural Lands Protection Act 1998*
- IV. a direction under section 37A of the *State Emergency and Rescue Management Act 1989* in relation to a state of emergency or a direction under section 22A of the *State Emergency Service Act 1989*
- V. in respect of the *Rural Fires Act 1997*:
 - (a) an emergency fire fighting act within the meaning of that Act
 - (b) emergency bushfire hazard reduction work within the meaning of that Act
 - (c) any notified steps issued to the landowner under section 63 of that Act

- (d) any notice by a local authority under section 66 of that Act to undertake specified bushfire hazard reduction work
 - (e) otherwise as part of any managed bushfire hazard reduction work within the meaning of the *Rural Fires Act 1997* that is carried out in accordance with:
 - i. a current bushfire hazard reduction certificate that applies to the work
 - ii. the provisions of any bushfire code applying to the land specified in the certificate.
- A5 The landowner may make minor alterations to any management actions as part of adaptive management, where the outcomes of monitoring, including documented observations of the landowner or his/her servant, lessee, agent or licensee/s, indicate that the minor alterations to the management actions are required to improve biodiversity values in accordance with the biobanking agreement. The landowner must document the minor alterations made to the management actions and the reasons for the alterations, and retain a record of the documentation and include it in the annual report.

B Timing for carrying out management actions

- B1 An obligation to carry out a management action (or implement and comply with a management plan):
- (i) will commence on the commencement date or first payment date (as indicated); and
 - (ii) must be carried out in perpetuity unless otherwise indicated in Sections 1 to 4 of this Annexure C.
- B2 The landowner must ensure that if a timeframe is specified in Sections 1 to 4, that the management action is carried out within that timeframe.
- B3 For the avoidance of doubt, an obligation to carry out a management action within a specified timeframe continues until the management action has been carried out even if the time for compliance has passed.

Section 1: Standard management actions

| Standard management actions | | |
|-----------------------------|--|----------------------------------|
| Item 1 | Management of grazing for conservation | Timing |
| 1.1 | Stock must not be permitted to graze in any area of the biobank site. | Ongoing from first payment date. |
| 1.2 | This item is not applicable. | N/A |
| 1.3 | Stock must not be permitted to be present on the biobank site in areas where replanting has been undertaken in accordance with item 6 of this Section, except as specified in items 6.2 and 6.3. | Ongoing from first payment date. |
| 1.4 | If, at any time, the landowner observes stock in any area of the biobank site, other than an area on the biobank site where grazing is permitted, the landowner must take necessary measures to remove the stock from the area immediately. | Ongoing from first payment date. |
| Item 2 | Weed control | Timing |
| 2.1 | <p>The landowner must implement and, at all relevant times, comply with, the integrated weed management plan included in Section 3 ('the weed management plan') (or such updated integrated weed management plan as has been approved by the Chief Executive under item 2.2 below).</p> <p>To allow for adaptive management, minor alterations can be made to the implementation of the weed management plan. Any alterations must be recorded in writing in accordance with Section 3 of this Annexure.</p> | Ongoing from first payment date. |
| 2.2 | <p>The weed management plan must be reviewed at intervals of no less than 4 years and no more than 6 years by an appropriately qualified person. The review is to consider the efficacy of the management actions in the plan and consider the effectiveness of the matters contained in the current plan that are outlined in the dot points below. Notification of the date of the review commencement must be provided to the Chief Executive in writing within 14 days of the commencement of the review. The findings of the review must be submitted to the Chief Executive within 3 months of commencing the review.</p> <p>Where the Chief Executive determines from the review that an update of the plan is required, the Chief Executive will notify the landowner in writing that an update of the plan is required. The landowner must update the plan and submit it to the Chief Executive for approval within 3 months of receiving written notification from the Chief Executive that an update of the plan is required. The revised plan must be prepared by an appropriately qualified person and must cover the matters outlined below and any additional matters specified by the Chief Executive in writing:</p> <ul style="list-style-type: none"> • a description of the target weed/s at the biobank site and their location/s, linked to each management zone where weeds are present • the method/s of weed control in each zone | Ongoing from first payment date. |

| | | |
|--|--|--|
| | <ul style="list-style-type: none"> the frequency of weed control activities at the site, taking into account management practices where weeds are providing habitat for native species the timing of any planting of native plant species required in each management zone to provide alternative habitat for native species affected by weed control activities methods for monitoring the success of weed control activities a timetable/measures for inspections to identify new weed species or exotic plant species (including noxious weeds under the <i>Noxious Weeds Act 1993</i>) additional weed control activities to destroy or remove any new weed species that are found on the site measures for assessing and reporting monitoring results a diary for recording actions taken in accordance with the weed management plan and minor alterations to this plan permitted for adaptive management. The details (management zone/s, date, alternative action) and reasons for the minor alterations must be recorded in the diary. | |
|--|--|--|

| Item 3 | Management of fire for conservation | Timing |
|--------|--|----------------------------------|
| 3.1 | The landowner must implement, and at all relevant times, comply with the fire management plan included in Section 3 (or such updated fire management plan as has been approved by the Chief Executive under item 3.2 below) (‘the fire management plan’). To allow for adaptive management and weather conditions, minor alterations can be made to the implementation of the fire management plan, and must be recorded in writing in accordance with Section 3 of this Annexure. | Ongoing from first payment date. |
| 3.2 | <p>The fire management plan must be reviewed at intervals of no less than 4 years and no more than 6 years by an appropriately qualified person. The review is to consider the efficacy of the management actions in the plan and consider the effectiveness of the matters contained in the current plan that are outlined in the dot points below. Notification of the date of the review commencement must be provided to the Chief Executive in writing within 14 days of the commencement of the review. The findings of the review must be submitted to the Chief Executive within 3 months of commencing the review.</p> <p>Where the Chief Executive determines from the review that an update of the fire management plan is required, the Chief Executive will notify the landowner in writing that an update of the plan is required. The landowner must update the plan and submit it to the Chief Executive for approval within 3 months of receiving written notification from the Chief Executive that an update of the plan is required. The revised plan must be prepared by an appropriately qualified person and cover the matters outlined below and any additional matters specified by the Chief Executive in writing:</p> <ul style="list-style-type: none"> the year the last fire went through, the type of fire and the extent of the fire and location, where known frequency of natural fires in the area of the biobank site, where known | Ongoing from first payment date. |

| | | |
|---------------|---|-------------------------------------|
| | <ul style="list-style-type: none"> a description of locations and management zones where ecological burns will be conducted and areas that will not be burnt the methods that will be used for ecological burns the fire frequency intervals recommended for the vegetation types and threatened species present, including any required adjustment to the schedule in the event of a wildfire or activities undertaken under the <i>Rural Fires Act 1997</i> to ensure minimum frequency between ecological burns the fire intensity for the recommended vegetation types the time of year suitable for ecological burns the diary for recording actions taken in accordance with the fire management plan and minor alterations to fire management plan permitted for adaptive management. The details (management zone/s, date, alternative action) and reasons for the minor alterations must be recorded in the diary. | |
| 3.3 | Fires must not be lit on the biobank site other than for the purpose of ecological burning in accordance with the fire management plan or as permitted as a permissible human activity on the biobank site under item 4 of this Annexure or clause 3.6 of this agreement. | Ongoing from commencement date. |
| Item 4 | Management of human disturbance | Timing |
| 4.1 | Except as permitted under clause 3 of this agreement or item 4.2 (below), human activities that adversely affect biodiversity values on the biobank site, including repeated disturbance of native animals, must not be carried out, or caused or permitted to be carried out, on the biobank site. | Ongoing from commencement date. |
| 4.2 | Human activities that may have a negative impact on biodiversity values on the biobank site are permitted if they are listed as permissible activities under clause 3.6 of this agreement or if they are undertaken as part of the management actions or management plans. | Ongoing from commencement date. |
| 4.3 | All waste shown on the map entitled <i>Figure 5 Property action plan; Tabbimobile Biobank Site</i> , dated 21/11/2018, must be removed from the biobank site in an appropriate manner. Rubbish includes several burnt-out cars and motorbikes associated with the old quarry in the east of the biobank (see location shown on <i>Figure 5 Property action plan; Tabbimobile Biobank Site</i> , dated 21/11/2018. Rubbish throughout the remainder of the site is limited to a pile of household waste and small pieces of wooden furniture and scattered rubbish along the sides of Tullymorgan – Jackybulpin Road. | Commencing from first payment date. |
| 4.4 | The landowner must not store, dispose of, or cause or permit to be disposed of, any waste on the biobank site. Note: The storage or disposal of waste on the biobank site may require an approval under the <i>Protection of the Environment Operations Act 1997</i> . | Ongoing from commencement date. |
| 4.5 | The landowner must take all reasonable steps to remove waste deposited by others on the biobank site, or which is otherwise present on the biobank site. | Ongoing from first payment date. |

| | | |
|-----|---|----------------------------------|
| 4.6 | <p>Fencing and/or signage must be installed and maintained to deter human disturbance including waste dumping. Signage must be the BioBanking signs available from the OEH.</p> <p>Specific requirements:</p> <p>The site is bordered by large tracts of contiguous native vegetation on all sides. The eastern boundary adjoins private land holdings and includes an existing fence. The remaining site boundaries adjoin lands owned by the biobank site owner and State Forest NSW. There is no threat from stock associated with any boundaries other than the eastern boundary. As such, no new stock proof fencing is required.</p> <p>New biobank delineation fence</p> <p>A simple 3-strand plain wire and star picket fence is proposed along both sides of Tullymorgan – Jackbulbin Road where it adjoins the biobank site.</p> <p>Existing fences</p> <p>The biobank site has been designed to utilise existing stock proof fences associated with the eastern boundary. This fence is in moderate condition and will require repair in locations and then ongoing maintenance.</p> <p>Fencing requirements are shown on the <i>Figure 5 Property action plan; Tabbimobile Biobank Site</i>, dated 21/11/2018. An appropriate budget has been included in the TFD to install new fencing and repair and maintain existing fencing.</p> <p>Gates</p> <p>3 new gates are to be installed at the locations shown on the <i>Figure 5 Property action plan; Tabbimobile Biobank Site</i>, dated 21/11/2018.</p> <p>Signage</p> <p>Standard OEH BioBanking signage is to be installed as shown on <i>Figure 5 Property action plan; Tabbimobile Biobank Site</i>, dated 21/11/2018.</p> | Ongoing from first payment date. |
|-----|---|----------------------------------|

| Item 5 | Retention of regrowth and remnant native vegetation | Timing |
|--------|--|---------------------------------|
| | <p>Note: An approval under the <i>Native Vegetation Act 2003</i> may be required to carry out thinning or any other removal or damage to native vegetation under this item.</p> | |
| 5.1 | <p>Native vegetation (whether remnant native vegetation or regrowth) on the biobank site must not be cut down, felled, thinned, logged, killed, destroyed, poisoned, ringbarked, uprooted, burnt or otherwise removed, except in accordance with item 5.2 below, or if it is required as part of the management actions or it is essential for the carrying out of permissible development under clause 3.5 of this agreement.</p> <p>Note: Native vegetation on the biobank site may be managed to improve biodiversity values by thinning to benchmark stem densities over no more than 80% of each management zone. Benchmark stem densities has the same meaning as defined in the Vegetation Benchmark Database as published by OEH</p> | Ongoing from commencement date. |

| | | |
|---------------|--|--|
| | and updated from time to time. An approval under the <i>Native Vegetation Act 2003</i> may be required to carry out thinning or any other removal or damage to native vegetation under this item. | |
| 5.2 | Native vegetation on the biobank site must not be burnt except in accordance with the fire management plan prepared pursuant to item 3 above. | Ongoing from commencement date. |
| Item 6 | Replanting or supplementary planting where natural regeneration will not be sufficient | Timing |
| 6.1 | <p>The landowner must undertake planting or seeding of the native groundcover/shrub/tree species indicated in the planting schedule for the biobank site as set out in item 6.6 below ('the planting schedule') in the areas of planting and within the timeframe indicated in the planting schedule.</p> <p>If the landowner cannot complete the planting within the timeframe indicated in the planting schedule due to local weather conditions, the landowner must complete the planting as soon as possible after that date and must make a record of and retain the reasons why the planting was not completed by the required time.</p> <p>Appropriate site treatment (e.g. weed control) of each area of planting or seeding identified in the planting schedule must be undertaken prior to such planting.</p> <p>Specific requirements:</p> <p>Revegetation activities are required in a small area in the eastern portion of the site within MZ3. There is a small disused quarry in this location which requires additional management actions to assist existing natural regeneration to re-establish native vegetation. The following activities are proposed for this location:</p> <ul style="list-style-type: none"> • minor earthworks where required to reduce erosion • Import appropriate top soil (from within the biobank site) medium and spread throughout areas of bare soils and in location where natural regeneration is absent or limited. • Undertake a seed collection program in the first 2-3 years of the biobank restoration program. The seed program should target Acacia's and other peas. • Hand broadcasting of native treated seed throughout the old quarry site <p>All seed collection is to be of provenance stock in accordance with Florabank Guidelines & Code of Practice (www.florabank.org.au):</p> <ul style="list-style-type: none"> • seed sourcing should prioritise collection of high quality and genetically diverse seed in order to maximise the adaptive potential of restoration efforts to current and future environmental change. • seed should be collected as locally as possible, however, the matching of environmental conditions at the planting site with those of the collection location should be the most important consideration in establishing the collection range. <p>A contingency budget has been included in the TFD for targeting plantings should the proposed seeding program require further enhancement works</p> | <p>Commencing from first payment date.</p> <p>Program will occur from year 1 through to year 4</p> |

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| 6.2 | As stated in Clause 1.1 stock must not be permitted to graze in any area of the biobank site. | Ongoing from the completion of broadcast seeding program. |
| 6.3 | <p>The landowner must survey each area of planting or seeding established under item 6.1 above and document them to determine whether the planted plants or seeds have established and survived, and retain the findings in accordance with the record keeping requirements.</p> <p>If, after the first survey or subsequent surveys, the establishment and survival rate of plants in an area of planting or seeding are below those usual for the species and region, the landowner must supplement the planting in the adversely affected areas within a reasonable timeframe (usually within 12 months, though this can be varied and recorded in a diary with reasons for variation, if the weather is unsatisfactory for the establishment and survival of plants or seeds).</p> | Conduct the first survey 24 months after the completion of planting or seeding in each area of planting or seeding, and then every 12 months thereafter. |
| 6.4 | <p>Areas of planting and seeding must be managed as required to assist the establishment and survival of native plant species.</p> <p>Management includes watering, slashing, scalping, spraying of weeds, plant replacement and strategic grazing by stock (in accordance with item 6.2 above) at strategic times of the year to control weeds to improve biodiversity values. The dates of planting must be recorded in accordance with the record keeping requirements set out in Annexure D.</p> | As required, from the date that planting or seeding areas are established. |
| 6.5 | Seeds and plants used for planting and seeding must be obtained from locally collected provenances, unless there are reasons to do otherwise (e.g. to ensure genetic variability or for adaptation to climate change). | As required (from commencement date if relevant to prepare for future planting). |

6.6 Planting schedule at the biobank site

| Species' common name | Species' scientific name | Management zone/s of planting | Number of plants per area | Planting method | Timing |
|---|------------------------------|-------------------------------|--|------------------------|---|
| Any locally sourced species from the biobank site | | Quarry site within MZ3 | As available and collected from local provenance | Hand broadcast of seed | As required during years 1-3 as per 6.1 above |
| Blackbutt | <i>Eucalyptus pilularis</i> | Quarry site within MZ3 | 25 | Tubestock | Within 1 year of failure of broadcast seeding – as required |
| Turpentine | <i>Syncarpia glomulifera</i> | Quarry site within MZ3 | 25 | Tubestock | Within 1 year of failure of broadcast seeding – as required |

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| Red Mahogany | <i>Eucalyptus resinifera</i> | Quarry site within MZ3 | 25 | Tubestock | Within 1 year of failure of broadcast seeding – as required |
| Red Bloodwood | <i>Corymbia intermedia</i> | Quarry site within MZ3 | 25 | Tubestock | Within 1 year of failure of broadcast seeding – as required |
| Red Ash | <i>Alphitonia excelsa</i> | Quarry site within MZ3 | 50 | Tubestock | Within 1 year of failure of broadcast seeding – as required |
| Green Wattle | <i>Acacia irrorata</i> | Quarry site within MZ3 | 50 | Tubestock | Within 1 year of failure of broadcast seeding – as required |
| Tree Heath | <i>Trochocarpa laurina</i> | Quarry site within MZ3 | 50 | Tubestock | Within 1 year of failure of broadcast seeding – as required |
| Coffee Bush | <i>Breynia oblongata</i> | Quarry site within MZ3 | 50 | Tubestock | Within 1 year of failure of broadcast seeding – as required |
| Any other locally sourced species from the biobank site | | Quarry site within MZ3 | As available and collected | Tubestock | Within 1 year of failure of broadcast seeding – as required (6.3 above) |

| Item 7 | Retention of dead timber | Timing |
|--------|---|---------------------------------|
| 7.1 | <p>Dead timber (whether standing or fallen and including branches and leaf litter) must not be removed from or moved within the biobank site except for the personal (non-commercial) use by the landowner for firewood for one dwelling only or for repair of fencing (not for construction of fencing).</p> <p>Dead timber used for fencing repair must be documented by the landowner in writing and records must be kept in accordance with the record keeping requirements. The landowner must record the approximate amount of dead timber collected from the biobank site for use in fencing, the location that that dead timber was collected from and the date it was collected (month, year).</p> | Ongoing from commencement date. |

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| 7.2 | <p>Timber from outside the biobank site may be introduced to and placed on the biobank site to improve biodiversity values. Once the timber has been brought onto the site, it is subject to the requirements of item 7.1 above.</p> <p>Timber brought from outside the biobank site must be documented by the landowner in writing and records must be kept in accordance with the record keeping requirements. The landowner must record the approximate amount of timber brought from outside the biobank site, the location where the timber was placed on the biobank site and the date on which it was placed (month, year).</p> | When required but not required before the first payment date. |
| Item 8 | Erosion control | Timing |
| 8.1 | <p>All reasonable steps must be undertaken to prevent, control and remedy erosion on the biobank site.</p> <p>Soil management for preventing and controlling erosion is to be undertaken using best practice management, such as that developed by the Soil Conservation Service, applied as relevant for the biobank site.</p> <p>Erosion at the site is limited to minor erosion associated with internal access tracks and the old quarry. Works will be limited to minor grading. An access track upgrade and then maintenance budget has been included in the TFD accordingly.</p> | Commencing from first payment date. |

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| Item 9 | Retention of rocks | Timing |
| 9.1 | The landowner must not remove, or cause or permit to be removed, rocks from the biobank site or move, or cause or permit to be moved, rocks within the biobank site. | Ongoing from commencement date. |
| 9.2 | Rocks from outside the site may be placed on the biobank site to improve habitat for threatened species. Rocks, once placed on the biobank site, are subject to item 9.1 above. The landowner must make and retain records of the location of the rocks placed on the site and the date the rocks were brought onto the site in accordance with the record keeping requirements. | When required but not required before the first payment date. |

Section 2: Additional management actions

| Additional management actions | | |
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| Item 10 | Control of feral and overabundant native herbivores | Timing |
| 10.1 | <p>The landowner must implement, and at all relevant times, comply with the management plan to control feral and overabundant native herbivores included in Section 4 (or such updated management plan as has been approved by the Chief Executive under item 10.2 below) ('the feral and overabundant native herbivores management plan'). To allow for adaptive management, minor alterations can be made to the implementation of the feral and overabundant native herbivores management plan, which must be recorded in writing in accordance with Section 3 of this Annexure.</p> <p>Note: A licence under Section 121 of the <i>National Parks and Wildlife Act 1974</i> may be required to control overabundant native herbivores.</p> | Ongoing from first payment date. |
| 10.2 | <p>The feral and overabundant native herbivores management plan must be reviewed at intervals of no less than 4 years and no more than 6 years. The review is to consider the efficacy of the management actions in the plan and consider the effectiveness of the matters contained in the plan that are outlined in the dot points below. Notification of the date of the review commencement must be provided to the Chief Executive in writing within 14 days of the commencement of the review. The findings of the review must be submitted to the Chief Executive within 3 months of commencing the review.</p> <p>Where the Chief Executive determines from the review that an update of the feral and overabundant native herbivores management plan is required, the Chief Executive will notify the landowner in writing that an update of the plan is required and the landowner must update the plan and submit the amended plan to the Chief Executive for approval within 3 months of receiving written notification from the Chief Executive that an update of the plan is required. The revised plan must cover the matters outlined below and any additional matters specified by the Chief Executive in writing:</p> <ul style="list-style-type: none"> • a description of the feral or overabundant native herbivore/s • consideration of relevant current OEH and other pest management programs and methods • the method/s for feral and overabundant native herbivore control in each management zone, determined in accordance with best practice management • the frequency and timing of the control actions in each management zone • methods for monitoring the success of the pest control actions • a timetable and measures for inspections to identify new feral or overabundant native herbivores that may adversely affect biodiversity values on the biobank site | Ongoing from first payment date. |

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| | <ul style="list-style-type: none"> • additional control actions to destroy or remove any new feral and overabundant native herbivore pest species that occur on site • measures for assessing and reporting monitoring results • a diary for recording actions taken in accordance with the feral and overabundant native herbivores management plan and minor alterations to this plan permitted for adaptive management. The details (management zone/s, date, alternative action) and reasons for the minor alterations must be recorded in the diary. | |
| Item 11 | Vertebrate pest management – foxes, wild dog | Timing |
| 11.1 | <p>The landowner must implement, and at all relevant times, comply with the vertebrate pest management plan included in Section 4 (or such updated vertebrate pest management plan as has been approved by the Chief Executive under item 11.2 below) ('the vertebrate pest management plan'). To allow for adaptive management, minor alterations can be made to the implementation of the vertebrate pest management plan, but these must be recorded in writing in accordance with Section 3 of this Annexure.</p> | Ongoing from first payment date. |
| 11.2 | <p>The vertebrate pest management plan must be reviewed at intervals of no less than 4 years and no more than 6 years by an appropriately qualified person. The review is to consider the efficacy of the management actions in the plan and consider the effectiveness of the matters contained in the current plan that are outlined in the dot points below. Notification of the review commencement must be provided to the Chief Executive in writing within 14 days of the commencement. The findings of the review must be submitted to the Chief Executive within 3 months of commencing the review.</p> <p>Where the Chief Executive determines from the review that an update of the plan is required, the Chief Executive will notify the landowner in writing that an update of the plan is required. The landowner must update the plan and submit it to the Chief Executive for approval within 3 months of receiving written notification from the Chief Executive that an update of the plan is required. The revised plan must cover the matters outlined below and any additional matters specified by the Chief Executive in writing:</p> <ul style="list-style-type: none"> • a description of the target fauna species e.g. pigs, foxes or other species such as feral dogs or goats • consideration of relevant current OEH and other pest management programs • the method/s of vertebrate pest control in each management zone determined in accordance with best management practice • the frequency and timing of vertebrate pest control actions in each management zone • methods for monitoring the success of vertebrate pest control actions • a timetable and measures for inspections to identify new vertebrate pest species that may negatively impact on threatened species on the biobank site | Ongoing from first payment date. |

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| | <ul style="list-style-type: none"> • additional vertebrate pest control actions to destroy or remove any new vertebrate pest species that occur on-site • measures for assessing and reporting monitoring results • a diary for recording actions taken in accordance with the vertebrate pest management plan and minor alterations to this plan permitted for adaptive management. The details (management zone/s, date, alternative actions) and reasons for the minor alterations must be recorded in the diary. | |
| Item 12 | Nutrient control | Timing |
| 12.1 | Fertilisers, pesticides and herbicides must not be applied on the biobank site, except where required to undertake the management actions. Use of fertilisers for establishing native vegetation through planting or seeding, use of herbicides for controlling weeds or use of pesticides for controlling vertebrate pests or feral herbivores can be undertaken in accordance with best practice management when required to undertake the management actions. | Ongoing from commencement date. |
| Item 13 | Control of exotic fish species | Timing |
| 13.1 | This item is not applicable. | N/A |
| Item 14 | Maintenance or reintroduction of natural flow regimes | Timing |
| 14.1 | This item is not applicable. | N/A |
| 14.2 | This item is not applicable. | N/A |
| 14.3 | Artificial structures such as dams or levee banks that impede the natural flow regimes on the biobank site must not be constructed unless approved by the Chief Executive in writing for the purpose of restoring natural flows. | Ongoing from commencement date. |

Section 3: Standard management plans

Weed management plan

The weed types, description and location (management zone/s) of weed infestations existing at the commencement date are listed in the weed management plan. The methods of weed control (management actions), monitoring and inspections are also listed.

The landowner must perform the methods of weed control and other weed management activities and monitoring in the weed management plan by the methods described (and in accordance with item 2 of this Annexure) for all weeds. The methods of control will apply to the weeds listed in the table below as well as any other weeds that may be present on the site from time to time.

The template for reporting of monitoring activities and the diary template for weed control management must be filled in to record observations during the implementation of the weed management plan, including any minor variations.

Weed types

| Weed | Common name of target weed | Scientific name of target weed | Description of infestation (eg intensity (% cover) & location within zone) | Management zone/s |
|------|---|--------------------------------|--|-------------------|
| A | Lantana | <i>Lantana camara</i> | Moderate infestation in the north of the site. Minor infestations associated with drainage lines and scattered individuals throughout the western portion of the site. | All zones |
| B | Creeping Oxalis | <i>Oxalis corniculata</i> | Scattered individuals | MZ1 & MZ3 |
| C | Crofton Weed | <i>Ageratina adenophora</i> | Scattered individuals | MZ5 |
| D | Introduced grasses including: African lovegrass Whiskey grass Vasey grass Narrow-leaved carpet grass Poa spp | | Minor infestations associated with drainage lines and scattered individuals throughout the western portion of the site | All zones |

| Methods of weed control | | | |
|-------------------------|--------|--|---|
| Management zone/s | Weed/s | Method of weed control | Frequency |
| All zones | A | <p>Control methods may include:</p> <ul style="list-style-type: none"> • Ute mounted spray unit (or equivalent) • Spraying with glyphosate using backpacks, teams of two spray with glyphosate at flowering/early fruiting stage, when treatment most effective. • Cut/scrape and paint crown/lignotuber with undiluted glyphosate for isolated plants or smaller areas of infestation (areas of patchy infestation). Scattered individuals • Hand pulling/crowning of weeds <p>Performance measures:</p> <p>Weed control work will aim to achieve the following outcomes:</p> <ol style="list-style-type: none"> 1. Lantana reduced to less than 10% of original distribution by the end of year 5. 2. Lantana reduced to less than 5% of original distribution by year 10. 3. Biobank site managed so that population maintained at less than 5% of original distribution and no mature flowering/fruiting individuals establish in perpetuity. | <p>4 sessions per year from year 1 to year 5.</p> <p>Then 2 sessions per year from year 6 to year 15.</p> |
| MZ1 & MZ3 | B | <p>Control methods may include:</p> <ul style="list-style-type: none"> • Cut/scrape and paint crown/lignotuber with undiluted glyphosate • Hand removal of weeds <p>Performance measures:</p> <p>Weed control work will aim to achieve the following outcomes:</p> <ol style="list-style-type: none"> 1. All known individuals of Creeping oxalis treated by the end of year 5. 2. Biobank site managed so that no mature flowering/fruiting individuals establish in perpetuity. | <p>3 sessions per year from year 1 to year 4.</p> <p>Then 2 sessions per year from year 5 to year 8.</p> |

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| MZ5 | C | <p>Control methods may include:</p> <ul style="list-style-type: none">• Spraying with herbicide using backpacks at flowering/early fruiting stage, when treatment most effective• Hand removal of weeds <p>Performance measures:</p> <p>Weed control work will aim to achieve the following outcomes:</p> <ol style="list-style-type: none">1. Croften weed infestations treated by the end of year 5.2. Biobank site managed so that no mature flowering/fruiting individuals establish in perpetuity. | 3 sessions per year from year 1 to year 5. |
| All zones | D | <p>Control methods may include:</p> <ul style="list-style-type: none">• Ute mounted spray unit (or equivalent)• Spot spraying• Brush cutting• Hand removal <p>Performance Measures</p> <p>Weed control work will aim to achieve the following outcomes:</p> <ol style="list-style-type: none">1. Reduce introduced grasses to less than 10% of original distribution by the end of year 52. Maintain herbaceous weeds at less than 10% of original distribution in perpetuity | Included in Weed C allocation |
| All zones | All | <p>Weed control in perpetuity activities program to be carried out by qualified person/s. Methods will include:</p> <ul style="list-style-type: none">• Cut/scrape and paint crown/lignotuber with undiluted glyphosate• Spot spraying• Hand removal of weeds | Weed control in perpetuity 2 sessions per year from year 6. |
| Native planting required to provide habitat for native species affected by weed control activities | | | |
| Management zone | Description of planting required (reference planting schedule at item 6.6) | | Timing |
| N/A | | | |
| Monitoring and inspections of existing and new weeds | | | |
| Management zone/s | Weed/s | Method of monitoring | Date/s required |

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| All Zones | All weeds | <p>A monitoring and evaluation program to address weed regrowth and control measures will be undertaken annually by the landholder through the set-up of fixed photo-points across all restoration zones. Photos should be taken by digital camera and recorded in the project file by date and discrete photo-point number. Photo-point locations should be clearly marked on site and/or recorded using a GPS.</p> <p>The photo-point monitoring will be augmented by a completion of a weed management log (included below) describing actions and observations.</p> <p>The photographic records and observations log will be completed by the landholder and provided to OEH.</p> <p>For each management zone, the following information will be reported:</p> <ul style="list-style-type: none"> • A summary of weed control activities works undertaken for the previous 12 months in the zone and a review of their success or otherwise. • A description of the current condition of the zone. This may include presence/absence of canopy, shrub and/or ground-layer regeneration and any evidence of dieback etc. • Brief descriptions of the type and locations of any significant new or remaining weed infestations. Successful suppression of weeds should also be documented. Refer back to the performance targets in methods of weed control. • Recommendations, if required, of any adaptations to the weed control techniques previously applied | Annually |
| All Zones | All weeds | Condition mapping (floristic and habitat field survey assessment) to determine vegetation quality and ecological condition. This will be provided to OEH. | Every six years |
| Other weed management activities (where required) | | | |

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Notes:

The following specifications are to be applied to all native vegetation management and restoration works. They apply to all weed species and all management zones.

Herbicide usage

- Herbicide spraying is not to be utilised within bushland areas of diverse / resilient remnant native groundcover.
- Off-label usage of any herbicide is only to be undertaken in accordance with a permit issued by the Australian Pesticide and Veterinary Medicine Authority (APVMA).
- Herbicide usage to only be undertaken where there is no risk to any waterway or the immediate environment. Accumulation of translocated residual herbicides into waterways during wet periods is to be considered in this context.
- All herbicide usage, including storage and transport, to be in accordance with WorkCover NSW (2006) and all relevant legislation, including *NSW Pesticides Act 1999*.
- Any bush regenerator undertaking herbicide spray applications must hold a current chemicals application training certification to AQF Level 3.
- Any bush regenerator undertaking herbicide spray applications must be highly competent in native and exotic plant identification.
- All herbicide applications to weed species are to avoid off-target damage to emerging or mature native plants.

Should a herbicide spill occur, incident and spill management procedures shall be immediately implemented. All incidents shall be immediately reported to the biobank site manager.

All ecological management and restoration works are to be implemented by an appropriately qualified and experienced bush regeneration contractor. The bush regeneration contractor must:

- Comply with provisions of the National Gardening & Landscape Services Award 2010.
- Provide established Workplace Health & Safety and Environmental Management Systems. Preferably the company has third-party accredited systems in place.
- Demonstrate implementation of safe workplace and appropriate environmental management practices and procedures (e.g. appropriate transport and management of herbicides).
- Provide site supervisor(s) with minimum qualifications and experience of Certificate III Conservation & Land Management and one year full-time equivalent experience as a trained bush regenerator.
- All herbicide usage, including storage and transport, to be in accordance with the *NSW Pesticides Act 1999*, WorkCover NSW (2006) and all other relevant legislation.

Other contractors required may include fencing contractors etc.

One session of weed control refers to a team of 2 or 3 staff per day depending on weed control activity being completed.

Each session of weed control in perpetuity consists of a team of 2 staff for one day.

Weed control refers to the follow-up treatment of weeds listed in this MAP whereas weed control in perpetuity refers to the ongoing treatment, through time, of any weed that may inhabit the site now and in the future.

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Template for reporting of monitoring activities

| Management zone/s | Date | Observations and assessment of monitoring This table must include the information for each zone (or groups of zones) which is described in the table titled 'monitoring and inspections of existing and new weeds'. |
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Diary template for weed control management

| Date | Management zone/s | Description and type of activity undertaken (e.g. weed control, observation) | Minor variations (details and reasons) |
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Fire for conservation management plan

The plan includes information on all known previous fire events in the 'Fire history' table to demonstrate local fire conditions including intensity and frequency.

The ecological fire requirements for each vegetation type or threatened species on the biobank site are listed in the 'Fire requirements for vegetation types and threatened species' table. These are the fire frequency intervals recommended for the vegetation types and threatened species present on the biobank site. They include any requirement adjustments to the schedule in the event of a wildfire or activities undertaken under the *Rural Fires Act (RFA) 1997* to ensure the minimum frequencies between ecological burns.

The landowner must carry out ecological burns for each management zone according to the method and frequency described (as informed by the history and requirements sections and in accordance with Section 3 of this annexure). These actions are set out in the 'Ecological burning actions table'. Monitoring and inspections (set out in the 'Fire management monitoring' table) as described must also be implemented. The landowner must also carry out the actions listed in the 'Other fire management activities' table.

The table titled 'Template of monitoring activities' must be completed to record observations during the implementation of the plan and assessment of monitoring activities. The landowner must also complete the table titled 'Diary template for fire management activities' to record the management actions undertaken or observations made, including any minor variations.

Fire history for previous 20 years (or longer if known)

| Year of fire | Hazard reduction, wildfire or ecological burn and extent of fire | Management zone/s |
|--------------|--|-------------------|
| N/A | Fire history unknown | All zones |

Fire requirements for vegetation types and threatened species

| Vegetation type and/or threatened species | Fire frequency required | Time of year for burning | Fire intensity required | Adjustment required due to wildfires or RFA activities |
|---|--|---------------------------------------|--|--|
| NR115 Blackbutt - Bloodwood dry heathy open forest on sandstones of the northern North Coast | Greater than 7 years, less than 25 years It is anticipated the first ecological burn will occur in Year 6. Burns would then occur every 6 years on rotation between the four burn cells (see Fire Management Plan dated 21/11/2018) meaning each | April/May and August/Septem ber | Avoid successive fires of intensity sufficient to scorch or consume dominant tree crown | In the event that controlled burns or wildfires did not occur for more than 24 years on the property, a prescribed ecological burn would be conducted. |

| | Cell would then be subject to burns approx. every 24 years. | | | |
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| NR123 Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the North Coast | Greater than 7 years, less than 25 years It is anticipated the first ecological burn will occur in Year 12 in Cell 2 and year 18 in Cell 3. | April/May and August/September | Avoid successive fires of intensity sufficient to scorch or consume dominant tree crown | In the event that controlled burns or wildfires did not occur for more than 24 years on the property, a prescribed ecological burn would be conducted. |
| NR246 Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion | Greater than 7 years, less than 25 years It is anticipated the first ecological burn will occur in Year 24. | April/May and August/September | Avoid successive fires of intensity sufficient to scorch or consume dominant tree crown | In the event that controlled burns or wildfires did not occur for more than 24 years on the property, a prescribed ecological burn would be conducted. |
| NR217 Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion | Contains vegetation which is not recommended to be subjected to active burns. | N/A | Fire should be avoided where possible | This vegetation type should not be subjected to active burning. Burns will avoid this vegetation type where possible |
| NR254 Swamp Mahogany swamp forest of the coastal lowlands of the North Coast | Contains vegetation which is not recommended to be subjected to active burns. | N/A | Fire should be avoided where possible | This vegetation type should not be subjected to active burning. Burns will avoid this vegetation type where possible |
| Ecological burning actions | | | | |
| Management zone/s | Actions | Supervision & extinguishing techniques | Time of year for burning | Frequency (years) |
| MZ1, MZ2 & MZ3 | The potential impact of the proposed burn on native vegetation, biodiversity and waterways will continue to be assessed as part of the Fire Management Plan review. Rural Fire Service to be consulted prior to the burn to determine appropriate | Rural Fire Service to be present for protection and advice. Asset control lines ('hoe' lines or similar) to be installed where required | April to September | Approx. 24 years from the date of the previous ecological burn or a wildfire occurring on |

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| | <p>regime.</p> <p>Publications such as NSW RFS publication <i>Standards for Low Intensity Bushfire Hazard Reduction Burning</i> should be considered.</p> <p>The biobank has been divided into four separate 'cells' to promote a mosaic ecological burn program across the site. Each Cell (as shown in Fire Management Plan dated 21/11/2018) will be burnt on rotation at approx. 6 year intervals with the first burn occurring in Cell 1 in year 5. However, it is recommended that burns occur in smaller patches within each cell using existing barriers such as minor drainage lines and access trails to help control fire spread and reduce the potential for active burns to occur in NR217 and NR254 (MZ4 & MZ5).</p> <p>Ignition points and control locations should coincide with access tracks (which will be maintained), ridge tops, the edge of 'patches' and existing drainage lines. Burning 'downhill' is also recommended.</p> <p>The biobank includes an existing network of degraded tracks. The proposed access track network is shown on the Fire Management Plan dated 21/11/2018. Access tracks will require periodic slashing and potentially minor regrading to maintain.</p> <p>It is recommended burning should be completed in August/September or late April/May (i.e. cooler weather with fuel not completely dry) to assist in reducing the potential for burns to enter neighbouring properties at high intensity. This approach will also ensure the site is subjected to low intensity burns only. This is particularly important in locations of <i>Hibbertia marginata</i>. This species prefers cool, low intensity burns only. This species is dominated in the central portion of the site and also in areas excluded from controlled burn activities (see below).</p> <p>All neighbouring property owners would be notified in advance of any controlled burn.</p> <p>The biobank site includes two vegetation types which should not be subjected to active burns, these being NR217 and NR254. These areas have been excluded from active burn cells</p> | | | the property. |
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| | <p>as shown on the Fire Management Plan dated 21/11/2018. Should fire enter these areas during ecological burns or wildfires, activities will focus on restricting or limiting fire access to these areas as best as possible. In addition, the ecological burn cells have also considered the existing access track network where possible to help control fire spread, particularly into neighbouring properties. These considerations have led to a portion of vegetation associated with MZ1 and MZ2 (small patch of NR115 and NR246 adjacent to Tullymorgan-Jackybulbin Road) being excluded from the active burn program.</p> <p>Targeted surveys for threatened flora, notably <i>Hibbertia marginata</i>, will be conducted across each proposed burn cell prior to burning. Frequency of burns will take into consideration the recommended fire frequencies of any threatened species present. A review of the NSW Rural Fire Service – Threatened Species Hazard Reduction List for this species indicates fire frequency needs to be more than once every 7 years. The proposed ecological burning programs accommodates this requirement. The survey will be a one day site visit focusing on the 'Cell' proposed for burning and will utilise a random meander technique. Funds have been included in the TFD accordingly.</p> | | | |
| MZ4 | <p>MZ4 contains vegetation which should not be subjected to an active burning regime. Ecological burns should be excluded from this zone where possible.</p> | <p>Rural Fire Service to be present for protection and advice. Asset control lines ('hoe' lines or similar) to be installed where required.</p> | <p>No active lighting</p> | <p>Only if conditions associated with controlled burns described above determine fire can't be avoided from entering this zone</p> |
| MZ5 | <p>MZ5 contains vegetation which should not be subjected to an active burning regime. Ecological burns should be excluded from this zone where possible.</p> | <p>Rural Fire Service to be present for protection and advice. Asset control lines ('hoe' lines or similar) to be installed where required.</p> | <p>No active lighting</p> | <p>Only if conditions associated with controlled burns described above determine fire can't be</p> |

| | | | | |
|--|--|--|--|--|
| | | | | avoided from entering this zone |
| Methods for monitoring the outcomes of ecological burns | | | | |
| Management zone/s | Method of monitoring | | | Date/s required |
| All Zones | <p>Visual auditing and noting of observations in a diary record (template provided below).</p> <ul style="list-style-type: none">A general description of the vegetation structures and species composition within the zone/s impacted by the ecological burn 6 months after the burnAn interpretation of the ecological outcomes of previous fires (either planned or unplanned) within the zone/s impacted by the ecological burn 6 months after the burnA recommendation on the timing and location for future planned ecological burns within the zone (or other zones) <p>A written and photographic report for plots relating to plant species and cover abundance starting 12 months post fire. The plots to be used for this monitoring are 13, 8, 5, 3, 20 and 17. These correlate with photo points A, B, C, D, E and F which will also be used as reference points for follow-up photos as shown on <i>Figure 4 Photo points; Tabbimobile Biobank Site</i>, dated 21/11/2018.</p> | | | Monitoring to occur 6 months after fire (summary of initial response) then a follow-up photographic and written report 12 months after the burn. |
| All Zones | Condition mapping (floristic and habitat field survey assessment) to determine vegetation quality and ecological condition. | | | Monitoring to occur 6 months after fire (summary of initial response) then a follow-up photographic and written report 12 months after the burn. |
| Other fire management activities (where required) | | | | |
| <p>Surrounding residents should be notified at least 1 month prior to an ecological burn occurring.</p> <p>All existing access tracks will be maintained for use during ecological burns.</p> <p>Should containment lines be required during controlled burns, they should be constructed, where possible, without complete removal of vegetation and exposing the soil surface.</p> | | | | |

Template for reporting of monitoring activities

| Management zone/s | Date | Observations and assessment of monitoring |
|-------------------|------|---|
| | | |
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| | | |
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| | | |
| | | |

Diary template for fire management activities

| Date | Management zone/s | Description of activity undertaken or observation made | Minor variations (details and reasons) |
|------|-------------------|--|--|
| | | | |
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Section 4: Additional management plans

Management plan to control feral and overabundant native herbivores

The management plan for feral and overabundant native herbivores includes information on the management requirements for the feral and overabundant native herbivores at the biobank site listed in the 'Feral and overabundant native herbivores' table. The possible methods of control for each species, used by OEH and other pest management programs, are listed and the suitability of each method is described in the 'Methods considered' table.

The landowner must carry out the methods for control for feral and overabundant native herbivores for each management zone according to the method and frequency as described in the 'Methods for control' table. The methods of control applied to the feral or overabundant native herbivores listed in the 'Feral or overabundant native herbivores' table as well as any other feral or overabundant herbivores that may be present on the site from time to time.

Monitoring and inspections of existing and new feral and overabundant herbivores at the biobank site as described in the 'Monitoring and inspections' table must be implemented.

The table titled 'Template for reporting of monitoring activities' must be completed to record observations during the implementation of the plan and assessment of the monitoring activities. The landowners must complete the table titled 'Diary template for feral and overabundant herbivore management' to record the management actions undertaken including any minor variations or observations made.

Feral and overabundant native herbivores

| Feral type | Name of feral/overabundant native herbivore | Description of extent | Management zone/s |
|------------|---|--|-------------------|
| A | Native macropods (Swamp Wallaby, Eastern Grey Kangaroo) | Not overabundant, but present on site. | All zones |

Methods considered

| Feral type | Name and description of program or method | Describe suitability |
|------------|---|---------------------------|
| A | No management recommended | No management recommended |

Methods of control

| Management zone/s | Feral type | Method of control | Frequency and timing |
|-------------------|------------|---------------------------|---------------------------|
| All zones | A | No management recommended | No management recommended |

Monitoring and inspections

| Management zone/s | Feral type/s | Method of monitoring | Date/s required |
|-------------------|--------------|--|----------------------------|
| Entire site | All | Monitoring is to comprise a walk over of the biobank | Monitoring of all contract |

| | | | |
|---|--|---|--|
| | | <p>site (every 6 months) and a visual estimate of the level of grazing, and browsing impacts. The level of impact is to be recorded as negligible, minimal, moderate or high.</p> <p>The monitoring will also include recording the number and location of any tracks, traces or sightings of feral or overabundant native herbivores.</p> <p>Monitoring will be undertaken by the personnel responsible for weed control and feral animal control, as well as reports and evidence by land manager staff, and reports by adjacent residents.</p> | work areas undertaken on a monthly basis. Other areas biannually |
| Other management activities (where required) | | | |
| N/A | | | |

| Template for reporting of monitoring activities | | | |
|---|------|--|---|
| Management zone/s | Date | Current level of impact on vegetation This column must record impact as Negligible, Minimal, Moderate or High | Observations and assessment of monitoring |
| | | | |
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| Diary template for feral and overabundant herbivore management | | | |
|--|-------------------|---|---|
| Date of activity | Management zone/s | Description and type of activity undertaken This column must include details of the feral and overabundant herbivores targeted, control techniques applied and numbers controlled. | Minor variations (details and reasons) |
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Vertebrate pest management plan

The management plan for vertebrate pests includes information on the vertebrate pests and their extent existing at the time of the agreement as listed in the 'Vertebrate pests' table. The possible methods of control for each species, used by OEH and other pest management programs are listed and the suitability of each method to the biobank site is described in the 'Methods considered' table.

The landowner must carry out the methods for vertebrate pest control for each management zone according to the method and frequency described in the 'Methods of control' table. The methods of control will apply to the vertebrate pests listed in the 'Vertebrate pests' table as well as any other vertebrate pests that may be present on the site from time to time.

Monitoring and inspections of existing and new vertebrate pests on the biobank site, as described in the 'Monitoring and inspections' table, must be implemented.

The table titled 'Template for reporting of monitoring activities' must be completed to record observations during the implementation of the plan and assessment of monitoring activities. The landowner must also complete the 'Diary template for vertebrate pest management' to record the management actions undertaken, including any minor variations, and observations made.

Vertebrate pests

| Pest | Name of vertebrate pest (e.g. pig, fox, goat, dog) | Description of extent | Management zone/s |
|------|---|--|---|
| A | Fox | Not observed during field assessments, however, may occur on occasion on a transient basis only. Results of desktop analysis (NPWS Wildlife Atlas) indicate the species is likely to be present in the locality. | Possibility throughout the site on occasion, although specific locations unknown. |
| B | Wild dog | Not observed during field assessments, however, is possible to occur on occasion. Results of desktop analysis (NPWS Wildlife Atlas) indicate the species is likely to be present in the locality. | Possibility throughout the site on occasion, although specific locations unknown. |

Methods considered

| Pest type | Name and description of program or method | Describe suitability |
|-----------|--|---|
| A | Monitored and controlled in accordance with strategies outlined in best-practice guidelines for fox control contained within the <i>Predation by the red fox - threat abatement plan</i> (OEH, 2010). The methods considered include: <ul style="list-style-type: none"> • Baiting • Active shooting | Baiting considered most suitable if Foxes are observed. Active shooting may be appropriate however consideration of any nearby residencies, roads and other amenities is |

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| | | required. | |
| B | Monitored and controlled in accordance with strategies outlined in; New South Wales <i>Wild Dog Management Strategy 2012 – 2015</i> (DPI, 2012). The methods considered include: <ul style="list-style-type: none">• Baiting• Active shooting | Baiting considered most suitable if sighted due to very low potential activity. Active shooting may be appropriate however consideration of any nearby residencies, roads and other amenities is required. | |
| Methods of control | | | |
| Management zone/s | Pest type | Method of control | Frequency and timing |
| All | A | Baiting will be used as the preferred method of fox control. The correct type and method of baiting will need to consider the presence of native fauna and their feeding habits. Active shooting may also be used. | As required |
| All | A | Baiting will be used as the preferred method of fox control. The correct type and method of baiting will need to consider the presence of native fauna and their feeding habits. Active shooting may also be used. | As required |
| Monitoring and inspections of existing and new vertebrate pests | | | |
| Management zone/s | Pest type/s | Method of monitoring | Date/s required |
| All | All | All observations or evidence of feral animals observed by the landholder are to be recorded in the monitoring log, including the date, location and number of animals sighted and any damage noted. Monitoring of damage is essential and can include information on the size of the affected area and feral animal induced impacts. Monitoring is to comprise a nocturnal walk over of the site annually and a visual estimate of the level of grazing, browsing and/or burrowing impacts. The level of impact is to be recorded as negligible, minimal, moderate or high. The monitoring is to also include recording the date, number and location of any tracks, traces scats or sightings. This information is to be used in the feral herbivores pest management plan to inform the methods of control listed in that plan. | Annually |

Other management activities (where required)

Records will be kept of opportunistic pest animal observations by the landholder in the "Diary template for vertebrate pest management" included below. These records will be submitted to OEH annually for review and discussion of suitable control methods to be employed.

Template for reporting of monitoring activities

| Management zone/s | Date | Current level of impact on vegetation or threatened fauna species This column must record impact as Negligible, Minimal, Moderate or High | Observations and assessment of monitoring |
|-------------------|------|--|---|
| | | | |
| | | | |
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Diary template for vertebrate pest management

| Date of activity | Management zone/s | Description and type of activity undertaken This column must include details of the vertebrate pests targeted, control techniques applied and numbers controlled. | Minor variations (details and reasons) |
|------------------|-------------------|--|--|
| | | | |
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Annexure D: Monitoring, reporting and record keeping requirements

This Annexure D, together with Annexure C, is approved as a property management plan prepared by the landowner under the section 113B of the *Threatened Species Conservation Act 1995*.

1 Monitoring requirements

- 1.1 The landowner must ensure that photographs are taken at photo-points at each of the locations and in the direction identified in the table below titled 'Locations of photo points' within 12 months of the commencement date and then at least every 12 months thereafter.
- 1.2 The photo points are identified on the map entitled Figure 4 Photo points; Tabbimobile Biobank Site dated 21/11/2018 in Annexure A of this agreement. The purpose of the photographs is to show changes over time. Photographs should be taken at approximately the same direction, location, height and time of day (during daylight hours) in each reporting period (as defined in item 2.2 of this Annexure D) and retained for the life of this agreement. All photographs must be dated, stating the direction in which they were taken and identified with their locations.

| Locations of photo points | | | |
|--|---------|----------|---------------------------------------|
| Projected coordinate system: GDA94 Zone 56 | | | |
| Photo point reference | Easting | Northing | Direction of photo (magnetic degrees) |
| A (plot 13) | 518315 | 6757527 | 270 |
| B (plot 8) | 518968 | 6756970 | 270 |
| C (plot 5) | 519329 | 6757112 | 0 |
| D (plot 3) | 519452 | 6757554 | 270 |
| E (plot 20) | 519360 | 6758731 | 90 |
| F (plot 17) | 519533 | 6758546 | 0 |

- 1.3 An inspection of the biobank site must be undertaken by, or on behalf of, the landowner in accordance with the table 'Site inspection and monitoring schedule' below, for the purposes specified in column A and at the relevant interval specified in column B. The inspections are to occur at the intervals indicated starting from the commencement date. The inspections are additional to any inspections and monitoring required by Annexure C.

| Site inspection and monitoring schedule | |
|---|-----------------|
| A. Purpose | B. Interval |
| The percentage of ground cover present on the biobank site for the purposes of item 1.1 of Section 1 of Annexure C. | Every 12 months |
| Number of stock and date/s when stock have entered the management | Every 3 months |

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| | |
|---|-----------------|
| zones on the biobank site. | |
| Physical condition of fencing and gates to determine whether they are maintained to a standard that can: <ul style="list-style-type: none"> i. control the movement of stock if required under item 1 in Section 1 of Annexure C ii. control human disturbance if required under item 4 in Section 1 of Annexure C iii. control the movement of feral and overabundant native herbivores if required under item 10 of Section 2 iv. control vertebrate pests if required under item 11 of Section 2 | Every 12 months |
| Records of any human disturbance on the biobank site. Note: items 4.1 and 4.2 in Section 1 of Annexure C and clause 2 of this agreement place restrictions on human activities on the biobank site. | Every 6 months |
| Evidence of erosion. Note: item 8 in Section 1 of Annexure C contains requirements for erosion control. | Every 6 months |
| Evidence of waste. Note: item 4.4 in Section 1 of Annexure C contains requirements for storing and disposing of waste on the biobank site. | Every 6 months |

2 Reporting requirements – annual report

2.1 The landowner must complete and submit to the Chief Executive for approval an annual report using the annual reporting template provided in this Annexure or, if the Chief Executive has approved an amended version of the annual reporting template after the date of this agreement, such an amended version of the annual reporting template as has been approved by the Chief Executive from time to time and supplied to the landowner.

2.2 An annual report must be prepared for each reporting period. A reporting period means:

2.2.1 prior to the first payment date, the period of 12 months after the commencement date, and each subsequent period of 12 months

2.2.2 after the first payment date, the period of 12 months after that date, and each subsequent period of 12 months.

The annual report submitted after the first anniversary of the first payment date must also include the period between the last anniversary of commencement date and the first payment date.

2.3 The annual report for the report period must be supplied to the Chief Executive by registered post not later than 30 days after the end of each reporting period.

2.4 If there is a change in land ownership during a reporting period, each landowner must submit the annual report required under items 1.2, 1.3 and 1.4 of this Annexure D for the period for which they were the landowner.

2.5 The annual report must:

- 2.5.1 contain the results of any monitoring, inspections or surveys required in Annexure C
- 2.5.2 contain the results of the inspections required to be conducted by item 1.2 of this annexure D, including details of the date, time, location and nature of the inspection, the name of the person conducting the inspection and observations from the inspection
- 2.5.3 include the photographs taken at the photo points listed in Annexure D
- 2.5.4 include any other information required in the annual reporting template.

Biobank site annual report

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Biodiversity Banking and Offsets Scheme
ID number BA402

Biobanking agreement

| | | | | | | | |
|---|---|--|--|--|--|--|--|
| 8 | Erosion control | | | | | | |
| 9 | Retention of rocks | | | | | | |
| 10 | Control of feral and overabundant native herbivores | | | | | | |
| 11 | Vertebrate pest management | | | | | | |
| 12 | Nutrient control | | | | | | |
| 13 | Control of exotic fish species | | | | | | |
| 14 | Maintenance or reintroduction of natural flow regimes | | | | | | |
| Incident or event that has adverse effect on biodiversity values on biobank site | | | | | | | |
| Incident or event including adverse impacts (e.g. natural events) | | | | | | Action taken and proposed recommended actions | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Records submitted with this report | | | | | | | |
| <input type="checkbox"/> Photographs taken at the photo points set in the biobanking agreement. | | | | | | | |
| <input type="checkbox"/> Results of the inspections required to be conducted in item 1.3 of Annexure D to the biobanking agreement. | | | | | | | |
| <input type="checkbox"/> Results of any monitoring, inspections or surveys required in Annexures C and D to the biobanking agreement. | | | | | | | |

| Signature and certification | |
|--|--------|
| I hereby declare that the information supplied in this report is accurate and complies with the reporting requirements under item 2 of the Annexure D to the biobanking agreement. Note: If the land that forms the biobank site is owned by multiple persons, each landowner must sign this annual report. | |
| Signed | Signed |
| Date | Date |

3 Record keeping requirements

- 3.1 The following written records and photographs must be created and retained by the landowner:
- 3.1.1 for a management action required by this agreement (other than a management action requiring the landowner to refrain from an activity), the date and location/s the management action was carried out and a description of the actions that were undertaken
 - 3.1.2 for a management action which is permitted to be carried out only in accordance with the Chief Executive's consent or approval, a copy of that consent or approval
 - 3.1.3 a copy of any management plan (or updated management plan) required by Annexure C of this agreement that has been approved by the Chief Executive, a copy of the Chief Executive's approval of the management plan (or updated management plan) and a copy of any review of a management plan required by Annexure C
 - 3.1.4 the diaries for recording actions undertaken in accordance with the management plans required by this agreement including the details (management zone/s, date, alternative action) of any minor alterations made to the implementation of those management plans and the reasons for the minor alterations
 - 3.1.5 all photographs required by item 1 of this Annexure D and the information that item requires to be recorded on the photographs
 - 3.1.6 for an inspection required by this agreement, the date, time, location and nature of the inspection, the name of the person conducting the inspection and observations from the inspection
 - 3.1.7 the results of monitoring, inspections or surveys required to be conducted by this agreement or any management plan that is required to be implemented under this agreement
 - 3.1.8 a brief description of any climatic, weather, ecological/environmental or unplanned events that have a significant adverse affect on the biodiversity values of the biobank site.
- 3.2 The landowner must retain a copy of each annual report.
- 3.3 All records required to be kept by this agreement must be:
- 3.3.1 in a legible form, or in a form that can readily be reduced to a legible form (this includes photographs taken as part of this agreement);
 - 3.3.2 kept for at least 10 years after the event to which they relate took place, unless specified otherwise; and
- Note: item 1.1 of this Annexure D requires the photographs required to be taken under that item to be retained for the life of this agreement.
- 3.3.3 produced to any authorised officer on request by an authorised officer.

Annexure E: Payment schedule

Note:

If, by participating in the BioBanking Scheme, you are carrying on an 'enterprise', and your annual income for management actions meets or exceeds \$75,000 (or \$150,000 for a non-profit organisation) you are required to register for GST.

'Enterprise' has a broad definition, and includes activities that are in the form of a business, or in the form of a concern in the nature of trade. Item 1 below assumes you are carrying on an enterprise.

If you are not carrying on an enterprise by participating in the BioBanking Scheme, GST will not apply to you – but Capital Gains Tax and income tax may still apply. In this case, do not indicate an ABN in item 1.1 below.

If you do not meet the monetary threshold, but you are carrying on an enterprise by participating in the BioBanking Scheme, you are still entitled to register for GST if you wish and you may indicate a registered ABN in item 1.1 below.

1 Agreement to issue recipient created tax invoices

- 1.1 The parties acknowledge that, if the landowner is registered for GST, recipient created tax invoices will be issued from the BioBanking Trust Fund (Australian Business Number 83 639 386 285) to the landowner (Australian Business Number 88 474 900 887).
- 1.2 The recipient created tax invoices will be for the supply by the landowner of the landowner's obligation to carry out the management actions as defined in this agreement ('the supplies'). These management actions are specified between the landowner and the Minister administering the Act, pursuant to Part 7A Division 2 of the Act.
- 1.3 The recipient created tax invoices will be issued on payment of the management payments as specified in item 2 of this Annexure E.
- 1.4 Under this recipient created tax invoice agreement, the landowner guarantees that the landowner will not issue any tax invoice for the supplies.
- 1.5 The landowner will notify the BioBanking Trust Fund immediately should the landowner cease to be registered for GST.
- 1.6 The BioBanking Trust Fund is registered for GST and the Minister will notify the landowner immediately should the fund cease to be registered.

2 Payment timing and amount

- 2.1 Subject to clause 12 of the agreement, the Minister is to direct the Fund Manager to make the management payments to the landowner in accordance with the payment schedules and the requirements of items 2, 3 and 4 of this Annexure E.
- 2.2 The first year of the payment timing, as set out in the payment schedules, commences from the first payment date.

- 2.3 The amount of the scheduled management payment for each year is as set out in the payment schedules.
- 2.4 Each amount is listed in the present value and is inclusive of GST for GST registered landowners and will be increased in accordance with the formula below:

In respect of indexation by CPI the following applies:

Each amount of the management payment is to be adjusted by movements in the CPI in accordance with the formula below (provided that, at all times, each instalment of the management payment is never less than its nominal dollar value as set out in the payment schedules and as at the date of this agreement).

$$\frac{A \times B}{C}$$

Where:

CPI means the published Consumer Price Index (Sydney - All Groups), or if that index is no longer published, then any other index which, in the reasonable opinion of the Minister, is a similar index

A is the dollar value (\$) of the management payment amounts as set out in the Payment Schedules prior to indexation by CPI

B is the most recent June Quarter CPI prior to the date that payment is due to be made

C is the CPI for the June Quarter 2019

2.5 Payment schedules

| Payment schedule (including GST) | |
|---|----------|
| Payment timing | Amount |
| At the beginning of the first year | \$63,822 |
| At the beginning of the second year | \$25,080 |
| At the beginning of the third year | \$23,540 |
| At the beginning of the fourth year | \$27,060 |
| At the beginning of the fifth year | \$27,500 |
| At the beginning of the sixth year | \$19,690 |
| At the beginning of the seventh year | \$15,510 |
| At the beginning of the eighth year | \$14,080 |
| At the beginning of the ninth year | \$9,020 |
| At the beginning of the tenth year | \$18,700 |
| At the beginning of the eleventh year | \$14,960 |
| At the beginning of the twelfth year | \$18,150 |
| At the beginning of the thirteenth year | \$11,990 |

| | |
|--|--|
| At the beginning of the fourteenth year | \$10,560 |
| At the beginning of the fifteenth year | \$11,220 |
| At the beginning of the sixteenth year | \$7,040 |
| At the beginning of the seventeenth year | \$10,450 |
| At the beginning of the eighteenth year | \$11,330 |
| At the beginning of the nineteenth year | \$8,470 |
| At the beginning of the twentieth year | \$8,910 |
| At the beginning of each following year | Amount equal to the sum of the in-perpetuity management cost that apply for each following year as determined by the table of in perpetuity costs below. |

| In perpetuity management costs (on and from the twenty-first year) (excluding GST and subject to rate of return) | | |
|--|---|------------------|
| Description of ongoing management action | Frequency | Amount |
| Annual reporting fee | The twenty first year and every year thereafter | \$1,530 |
| Weed control | The twenty first year and every year thereafter | \$2,400 |
| Ecological burning program | The twenty third year and every six years thereafter | \$4,500 |
| Threatened flora surveys | The twenty sixth year and every seven years thereafter | \$1,800 |
| Vertebrate pest control plan – qualified professional | The twenty fourth year and every six years thereafter | \$1,800 |
| Project management/landowner reporting and monitoring | The twenty first year and every year thereafter | \$1,800 |
| Access track maintenance | The twenty first year and every year thereafter | \$600 |
| Vertebrate pest control (in perpetuity) | The twenty second year and every three years thereafter | \$900 |
| Biobank sign replacement | The twenty ninth year and every ten years thereafter | \$600 |
| Weed management plan review (in perpetuity) | The twenty fourth year and every six years thereafter | \$1,200 |
| Vertebrate pest management plan review (in perpetuity) | The twenty fourth year and every six years thereafter | \$900 |
| Fire management Plan review (in perpetuity) | The twenty fourth year and every six years thereafter | \$900 |
| Fence maintenance (in perpetuity) | The twenty second year and every two years thereafter | \$500 |
| Log bridge monitor and upgrade/maintenance | The twenty fourth year and every five years thereafter | \$2,000 |
| Rubbish removal in perpetuity | The twenty first year and every year thereafter | \$200 |
| Total present value of payments after 20 years (incl. GST) | | \$126,791 |
| Total present value of payments after 20 years (excl. GST) | | \$115,265 |

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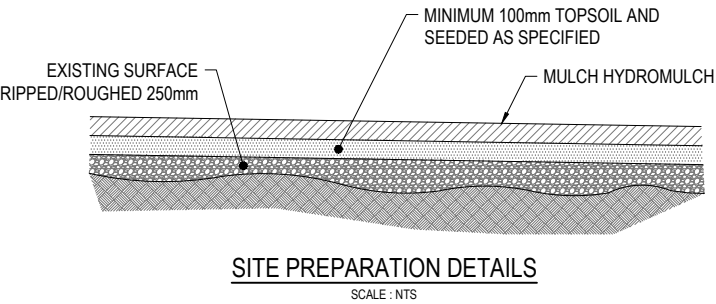
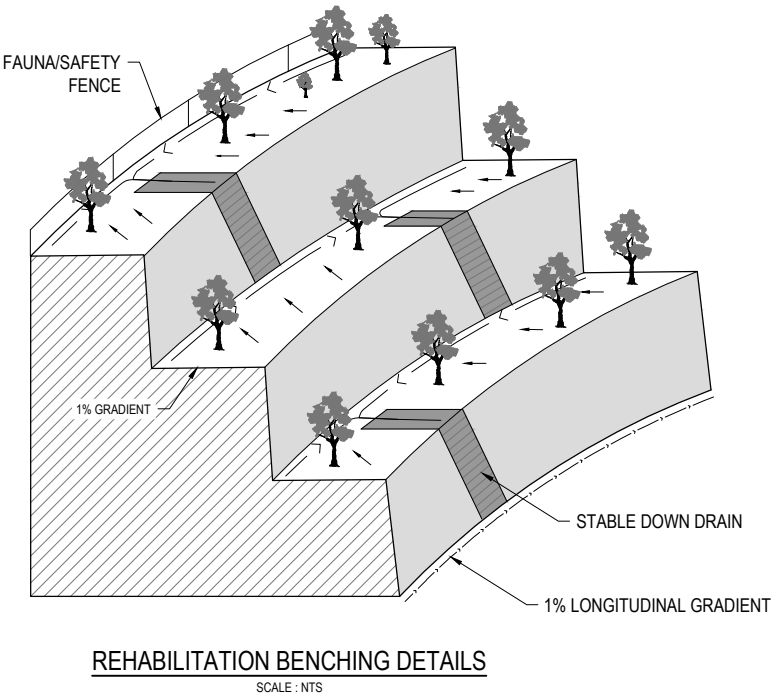
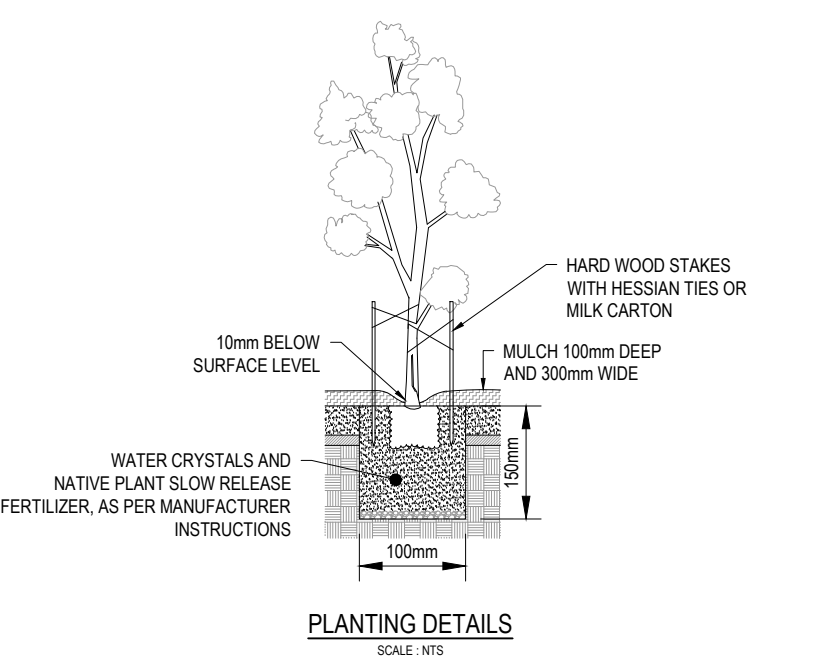
3 Nominated bank account

- 3.1 The management payments will be paid into a bank account as nominated by the landowner in accordance with the requirements of this item 3 (**'the Nominated Bank Account'**).
- 3.2 The landowner must provide the Fund Manager with details in writing of the nominated bank account within 14 days of the commencement date.
- 3.3 Where there is more than one owner of the biobank site, the notice to be provided in accordance with item 3.2 above must be signed by all owners of the biobank site.
- 3.4 The landowner must notify the Fund Manager in writing within 14 days of any change to the nominated bank account. This notice must include new bank account information and the written consent of all owners of the biobank site.

4 Annual contribution

- 4.1 The landowner authorises the Minister to retain the annual contribution from each management payment made to the landowner.
- 4.2 The Minister will, following each management payment, issue the landowner with an invoice confirming that the annual contribution has been deducted from the relevant management payment.
- 4.3 As contemplated by clause 18 of the BioBanking Regulation, the Minister may waive the annual contribution where:
 - 4.1.1 the owner of the biobank site has not sold any of the biodiversity credits created for the site, or
 - 4.1.2 there are insufficient funds in the biobank site account relating to the biobank site to meet the next scheduled management payment when it becomes payable.

Appendix C – Rehabilitation Plan



Rehabilitation Plan

1. Aim

To rehabilitate the site as soon as practicable after quarrying activities have ceased to achieve a safe, stable and non-polluting site that integrates into the surrounding landscape.

2. Objectives

| | |
|---|--|
| The objectives of the rehabilitation plan are to: | |
| Feature | Objective |
| Site (as a whole) | • Safe, stable and non-polluting • Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land |
| Surface Infrastructure | • Decommissioned and removed, unless otherwise agreed by the Secretary |
| Quarry benches and pit floor (Site A) | • Landscaped and vegetated using native tree and understorey species |
| Past sand mining sites (Sites B and C) | • Returned to the pre-development ground level • Landscaped and revegetated using native tree and understorey species |
| Final Void | • Minimise the size, depth and slope of the batters of the final void • Minimise the drainage catchment of the final void |

3. Responsibility

The implementation of the Rehabilitation Plan is the responsibility of the Quarry Manager but the works are to be undertaken by a suitably qualified and experienced bush regenerator

4. Final landform and land use

The final landform will be determined by the final shape of the quarry pit. Assuming the site is extracted to its full extent, the landform is shown on the plan with typical benches being 8 m wide and 15 m high. The benches would be ripped and graded so they are suitable for environmental conservation land use and control stormwater, as shown by the detail. It is intended that the benches will be revegetated so they form habitat, consistent with the surrounding vegetation.

5. Topsoil Stripping and Stockpiling

The following measures will be adopted for soil stripping and stockpiling:

- Soils will be stripped when in a moist condition (neither too dry nor wet) thus reducing dust generation and deterioration in topsoil quality
- Topsoil will be stockpiled only when disturbed areas are not available for immediate rehabilitation
- Soil stockpiles will be constructed to minimise the stockpile area in a discrete two metre high (maximum) pile, with a working face battered down at 30 degrees
- Stockpiles will be trimmed, deep ripped to 500 mm, immediately sown with permanent pasture species, and fertilised

6. Rehabilitation stages

The area to be revegetated has been divided into two stages, with Stage 2 divided into three zones. The extent of the stages and zones is to be confirmed onsite based on site conditions, prior to commencing rehabilitation works. The intent of each Stage and Zone and what works are required is described below, with more detail about each type of works described in Section 7.

6.1 Stage 1

Stage 1 is the former Area C used as a sand quarry in the past. This has already been topsoiled and is revegetating naturally. It is expected that this will continue to revegetate naturally, so the priority will be weed control and monitoring. The works for this area are:

- Maintenance and monitoring

6.2 Stage 2

Stage 2 is the area of the quarry approved by SSD 6624 and will be implemented once the quarry is no longer operating or as soon as is reasonably practicable after an area of the quarry is no longer actively used. This area has been divided into three zones:

- Zone A is the area of the quarry pit
- Zone B are the areas outside the quarry pit
- Zone C are the areas outside the quarry pit but subject to inundation

Zones A and B have the same species mix but Zone B may not need the Site Preparation (see below) required for Zone A because it is not part of the quarry pit and will not have a rock surface. Zone C is also unlikely to require Site Preparation but will have a different species mix to Zones A and B because it is subject to inundation. The works required in these zones are:

- Site Preparation (Zone A only)
- Seeding/Planting
- Maintenance and monitoring
- Reporting

Details of the works for each Stage and Zone are provided below.

7. Rehabilitation works

7.1 Site Preparation

- The top of the benches will be fenced for safety and to exclude fauna where possible. Fencing should include ‘one-way fauna gates’ which allow mobile fauna to escape from the former quarry area should they enter the site

- Temporary fencing will be installed to delineate the rehabilitation area, until rehabilitation is completed. No machines will be allowed inside the rehabilitation area other than for works associated with the planting and weeding program
- Benches will be constructed with in fall drainage, a non-erodible longitudinal grade (approximately 1%) and stable down drains (refer to detail)
- The benches are to be ripped/roughed to a depth of 250mm to key in topsoil
- Topsoil stripped from the site prior to the quarry operations commencing will be respread across the benches to form a minimum of 100mm deep layer
- Place fauna habitat (eg logs and large woody debris) randomly across the area
- Sediment and erosion controls will be maintained until the site is stable

7.2 Seeding

Seed is to be purchased from local suppliers and/or collected locally. All seed collection, management, cleaning and storage will be in accordance with *Guideline 5: Seed Collection from Woody Plants for Local Revegetation* (FloraBank, 1999). Seed collection should focus on the species listed in Table 1 and Table 2. The timing of seed collection will depend on the species but should be within 12 months of when it is intended to plant the seed.

Seeding should be done prior to planting. Seed broadcasting is to be done by hand or mechanical means at the sowing rates indicated in Table 1 and Table 2. The seed should be raked following sowing to cover the seed and improve success rates. The seed should be watered weekly until established.

7.3 Planting

Ideally, planting should be done at the start of autumn but due to the mild climate of the area, planting at any time during the year should not cause a significant problem. The tube stock or hiko cells, where possible, should be sourced from nurseries that use local seed stock, ideally from within the Clarence Valley area.

The planting method includes:

- Soak all plants before planting
- Make a hole large enough for the tube stock
- Add water crystals and a slow release fertiliser suitable for native species
- Remove the plant from the container being careful not to damage the roots
- Insert the plant into the hole so that the base of the stem is a little below the surrounding ground
- Firm the soil around the root ball to remove air gaps
- Water the plant with at least 2L of water
- Mulch the plant using native tree mulch, weed mats or saw dust. Make sure the mulch is not against the stem of the plant
- Install a protective guard using wooden/bamboo stakes or milk carton on canopy and mid storey species
- Water weekly for the first month. Further watering may be required if there is no rain.

7.4 Species List

Recommended species and planting densities are provided below. The recommended species are based on those to be removed. If the recommended species are unavailable consult Council for suitable replacement species.

CONTINUE ON FIGURE 3



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REHABILITATION NOTES
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Figure 2

Table 1 Recommended Species for Stage 2 – Zones A and B

| Species List | Seed Rate ¹ | Plant Number ^{1, 2} | Desired Density ¹ |
|--|------------------------|------------------------------|------------------------------|
| Upper storey/canopy | 2 kg/ha | 2030 | 1/15m ² |
| Blackbutt (<i>Eucalyptus pilularis</i>) | | | |
| Red Mahogany (<i>Eucalyptus resinifera</i>) | | | |
| Pink Bloodwood (<i>Corymbia intermedia</i>) | | | |
| Turpentine (<i>Syncarpia glomerata</i>) | | | |
| Tallowwood (<i>Eucalyptus microcorys</i>) | | | |
| Mid storey | 2 kg/ha | 3040 | 1/10m ² |
| Black Wattle (<i>Acacia leiocalyx</i>) | | | |
| Red Ash (<i>Alphitonia excelsa</i>) | | | |
| Cheese Tree (<i>Glochidion ferdinandi</i>) | | | |
| Lower storey/groundcover | 4 kg/ha | 6080 | 1/5m ² |
| Blue Flax-lily (<i>Dianella caerulea</i>) | | | |
| Bordered Guinea Flower (<i>Hibbertia marginate</i>) | | | |
| Rough Saw Sedge (<i>Gahnia aspera</i>) | | | |
| Many-flowered Mat-rush (<i>Lomandra multiflora</i>) | | | |
| Sterile Cover Crop | 10 kg/ha | NA | NA |
| Rye (<i>Lolium rigidum</i>) – if applied in Autumn/Winter | | | |
| Japanese Millet (<i>Echinochloa esculenta</i>) – if applied in Spring/Summer | | | |

¹ This relates to the storey not the individual species.
² This assumes half the desired density will be achieved by seeding.

Table 2 Recommended Species for Stage 2 - Zone C

| Species List | Seed Rate ¹ | Plant Number ^{1, 2} | Desired Density ¹ |
|--|------------------------|------------------------------|------------------------------|
| Upper storey/canopy | 2 kg/ha | 125 | 1/15m ² |
| Swamp Mahogany (<i>Eucalyptus robusta</i>) | | | |
| Brush box (<i>Lophostemon suaveolens</i>) | | | |
| Broad Leaved-paperbark (<i>Melaleuca quinquenervia</i>) | | | |
| Turpentine (<i>Syncarpia glomerata</i>) | | | |
| Tallowwood (<i>Eucalyptus microcorys</i>) | | | |
| Mid storey | 2 kg/ha | 190 | 1/10m ² |
| Cheese Tree (<i>Glochidion ferdinandi</i>) | | | |
| Lily Pilly (<i>Acmena smithii</i>) | | | |
| Cabbage Palm (<i>Livistona australis</i>) | | | |
| Red Ash (<i>Alphitonia excelsa</i>) | | | |
| Lower storey/groundcover | 4 kg/ha | 380 | 1/5m ² |
| Saw-sedge (<i>Gahnia clarkii</i>) | | | |
| Rainbow Fern (<i>Calochlaena dubia</i>) | | | |
| Harsh Ground Fern (<i>Hypolepis muelleri</i>) | | | |
| Sterile Cover Crop | 10 kg/ha | NA | NA |
| Rye (<i>Lolium rigidum</i>) – if applied in Autumn/Winter | | | |
| Japanese Millet (<i>Echinochloa esculenta</i>) – if applied in Spring/Summer | | | |

¹ This relates to the storey not the individual species.
² This assumes half the desired density will be achieved by seeding.

7.5 Maintenance and Monitoring

Regular maintenance activities will include:

- Follow-up watering
- Repairing damaged tree guards
- Monitoring survival rates and installing replacement plants where required to achieve the densities above
- Weed control and continued follow-up spot spraying, hand removal, etc as required

7.6 Weed Control

Weed control is vital to the success of the rehabilitation program. The noxious and environmental weed species with the potential to occur at the site and their recommended control method are provided below.

Table 3 Weed control

| Scientific Name | Common Name | Noxious | Control Methods | | | | |
|--|------------------------|---------|----------------------------|------------------------------|----------------------------|----------------------------|----------------|
| | | | Cut and Paint ¹ | Scape and Paint ¹ | Direct Inject ¹ | Spot Spraying ¹ | Manual Remove |
| <i>Ageratina adenophora</i> | Crofton Weed | Class 4 | | | | √ ^{2, (4+7)} | √ |
| <i>Ageratum houstonianum</i> | Blue Billy Goat Weed | | | | | √ | √ |
| <i>Baccharis halimifolia</i> | Grounsel Bush | Class 3 | √ ⁴ | | | √ ⁷ | √ ³ |
| <i>Bidens pilosa</i> | Farmers Friends | | | | | √ | √ |
| <i>Cinnamomum camphora</i> | Camphor Laurel | Class 4 | √ | | √ | | |
| <i>Eragrostis curvula</i> | African Love Grass | Class 4 | | | | √ | |
| <i>Ipomea indica</i> | Morning Glory | | | √ ⁴ | | √ | √ |
| <i>Lantana camara</i> | Pink/Red Lantana | Class 4 | √ | | | √ | √ |
| <i>Ligustrum lucidum</i> | Large Leaf Privet | Class 4 | √ ⁴ | | √ ⁴ | √ ^{2,8} | √ ² |
| <i>Ligustrum sinense</i> | Small Leaf Privet | Class 4 | √ ⁴ | | √ ⁴ | √ ^{2,8} | √ ² |
| <i>Rubus fruticosus</i> | Blackberry | Class 3 | | | | √ ⁸ | |
| <i>Senecio madagascariensis</i> | Fireweed | | | | | √ ¹¹ | √ |
| <i>Senna pendula</i> var. <i>glabrata</i> | Eastern Cassia/Senna | | √ | | √ ⁴ | √ ⁵ | |
| <i>Solanum mauritianum</i> | Tobacco Bush | | √ | | | | |
| <i>Sporobolus indica</i> var. <i>major</i> | Giant Parramatta Grass | Class 3 | | | | √ ⁵ | √ ⁶ |

¹ Glyphosphate unless specified; ² Seedlings; ³ Saplings; ⁴ Mature plants; ⁵ Large infestations; ⁶ Small infestations; ⁷ Grazon; ⁸ Metsulfuron-methyl; ⁹ Glyphosate & Metasulfuron-methyl mix, ¹⁰ Penetrant, ¹¹ Bromoxynil

7.7 Reporting

Reporting for each Stage will be required at:

- Completion of initial planting (Stage 2 only)
- After each maintenance and monitoring period

- At completion of maintenance and monitoring period

8. Rehabilitation Schedule

The following table provides an indicative schedule for the rehabilitation works for each Stage. Stage 1 is to commence within 6 months of the BRMP being approved, while Stage 2 is to commence within 6 months of the quarry no longer operating or an area of the quarry is no longer operating. Maintenance and monitoring may continue for longer than 5 years depending on the success of the rehabilitation.

Table 4 Rehabilitation schedule

| Task* | Year 1** | Year 2 | Year 3 | Year 4 | Year 5 |
|------------------------|----------|--------|--------|--------|--------|
| Site Preparation | | | | | |
| Seeding/Planting | | | | | |
| Maintenance/Monitoring | | | | | |

* See details for requirements of each task
** Not applicable for Stage 1

9. Completion criteria and contingency

Rehabilitation will be considered complete once the densities in the species table have been achieved and sustained for 2 years. Density is to be determined using one randomly placed 20m x 20m quadrat per hectare. If the desired density is not achieved, a contingency plan or trigger and response plan is to be implemented, as shown below.

Table 5 Contingency plan

| Trigger | Response |
|---|--|
| Infestation of noxious and/or environmental weeds | <ul style="list-style-type: none">Control infestationRevise control actionsIncrease maintenance frequency |
| Low plant densities/survival rates | <ul style="list-style-type: none">Engage a qualified bush regenerator to identify causeAddress cause accordinglyReplant or seed to desired density |
| Low species diversity | <ul style="list-style-type: none">Engage a qualified bush regenerator to identify causeAddress cause accordinglyReplant or seed to desired density |



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Figure 3

Appendix D – Nest Box Management Plan



Newman Quarrying Pty Ltd

Slys Quarry

Nest Box Management Plan

December 2017

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Appendices

Appendix A – Tree Hollow Register

Appendix B – Registers

1. Introduction

1.1 Background

GHD has been engaged by Newman Quarrying Pty Ltd to prepare a Nest Box Management Plan (the Plan) for the proposed staged expansion works (the proposal) at the existing Slys Quarry located on Tullymorgan-Jackybulbin Road, Moro, NSW (the site).

The proposal involves the expansion of the existing sandstone quarry by 11.1 hectares and an increase in the extraction rate up to 500,000 tonnes per annum that would be carried out in stages. Stage 1 already has approvals in place under an existing development application and is predominantly cleared, except for a portion in the north of the site and a few scattered trees. This Plan relates to actions required prior to proposal commencing further Stages 2 and 3.

A Biodiversity Assessment Report (BAR) (GHD, 2016) was undertaken to support an Environmental Impact Assessment (EIS) (GHD, 2015) for the site that addressed the potential biodiversity impacts of the proposed quarry expansion. The EIS was approved by the Minister for Planning on 5 May 2016 and conditions of consent were issued for the project (SSD 6624). A Biodiversity and Rehabilitation Management Plan (BRMP) (GHD, 2017a) was prepared for the project in accordance with the consent condition 31 and the Environmental Management Strategy (GHD, 2017b) which described the rehabilitation and biodiversity management strategies, procedures, controls and monitoring programs to be implemented to prevent or minimise impacts and facilitate effective rehabilitation of Slys Quarry during operational and post operational phases. The preparation of a Nest Box Management Plan was identified as an additional requirement from the EIS (GHD, 2015) and Biodiversity and Rehabilitation Management Plan (GHD, 2017a) (see Section 1.3).

1.2 Purpose of this plan

This Plan sets out the framework for mitigating the loss of hollow-bearing trees (HBTs) associated with clearing activities required for the proposal and has been prepared in accordance with Condition B9 and B10 of the Environmental Management Strategy (EMS) (GHD, 2017b) as detailed in Section 1.3. The primary objective of this Plan is to detail suitable nest box requirements to minimise impacts on native hollow-dependant fauna species at the site during the proposal in accordance with the project consent conditions (detailed in Section 1.3).

Specifically, the aims of this Plan are to:

- Provide a description of the existing vegetation and ecological values within the site.
- Minimise impacts on native biodiversity, particularly hollow-dependent arboreal fauna, by outlining an appropriate number of nest boxes to be installed within the adjacent vegetation prior to clearing to mitigate the associated loss of HBTs. This is to occur in a staged approach, as per the quarry expansion.
- Outline monitoring and reporting requirements and responsibilities.

1.3 Relevant environmental management strategy measures

Specific measures and requirements to address nest box installation within the adjacent vegetation were detailed in the EIS (GHD, 2015) and BRMP (GHD, 2017a). The relevant environmental management strategy (EMS) measures are outlined in Table 1-1.

Table 1-1 Relevant Environmental Management Strategy conditions

| EMS Ref. | Environmental Management Measure | Section addressed in document |
|----------|---|--|
| B17 | Six months prior to clearing, engage an experienced ecologist to undertake a pre-clearing survey and prepare a Nest Box Management Plan (NBMP), in consultation with OEH. | This Plan |
| | Identifying the number and size of hollows to be lost within the clearing footprint | Section 3 – Results of nest box surveys |
| | Determining the number, size and location of nest boxes to be installed | Section 3 – Results of nest box surveys Table 4-1 - Nest box requirements at the site |
| B18 | Nest boxes specified in the Plan are to be installed prior to removal of hollow-bearing trees | Section 4.1.1 – Nest box installation Section 5 – Summary of management actions |

1.4 Limitations

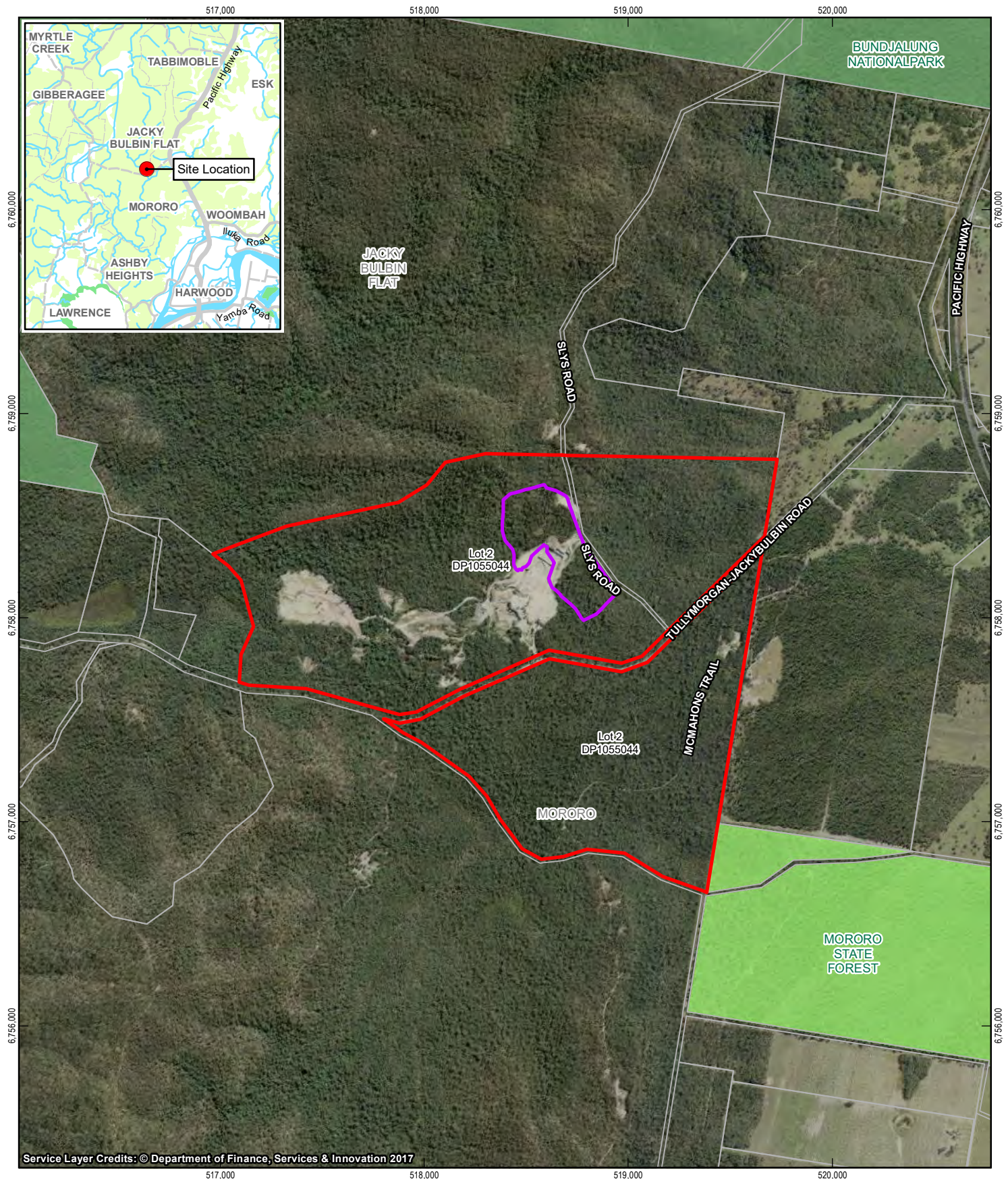
This report: has been prepared by GHD for Newman Quarrying Pty Ltd and may only be used and relied on by Newman Quarrying Pty Ltd for the purpose agreed between GHD and the Newman Quarrying Pty Ltd as set out in section 1 of this report.

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The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

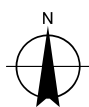
The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.



LEGEND

- Cadastre
- Lot 2 DP1055044
- Subject Site
- State Forest

Paper Size A4
 0 190 380 570 760
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Newman Quarrying Pty Ltd
 Sly's Quarry
 Nest Box Management Plan

Job Number 22-17528
 Revision 0
 Date 15 Sep 2017

Site Location

Figure 1-1

2. Existing environment

2.1 Site location and context

The site is located at Lot 2 DP 1055044 along Tullymorgan-Jackybulbin Road, north of Yamba and approximately 2 kilometres west of the Pacific Highway on the NSW Mid-North Coast, in the Clarence Valley Shire Council (Council) Local Government Area (LGA). For the purpose of this report, the site is defined as the existing quarry inclusive of the expansion stages 1, 2 and 3 (see Figure 1-1).

The site is 18.1 hectares in size and contains a previous area of disturbance that is currently being used as a quarry, several recently cleared access tracks and areas of regrowth native vegetation.

An adjacent area south of Tullymorgan-Jackybulbin Road has been nominated as Slys Quarry Biobank and forms part of a large expanse of native vegetation that extends to the north, and south of the site. To the west the site is bound by Slys Road. Several forested reserves are located in the surrounding locality. These include Bundjalung Crown Reserve, Devils Pulpit State Forest, Gibberagee State Forest and Mororo State Forest.

2.2 Vegetation

GHD (2016) mapped two Plant Community Types within the study area, neither of which are consistent with any threatened ecological community (TEC) listings under either the *Threatened Species Conservation Act 1995* (TSC Act) or *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). These communities are described below. Appendix A shows vegetation distribution across the site.

2.2.1 Blackbutt - Bloodwood dry heathy open forest on sandstones of the northern North Coast (PCT ID NR115)

Blackbutt-Bloodwood dry heathy open forest is a tall open forest that occurs on deep sands of old dune systems along the NSW North Coast.

This community is dominated by Pink Bloodwood (*Corymbia intermedia*), Tallowwood (*Eucalyptus microcorys*), Blackbutt (*Eucalyptus pilularis*) and *Angophora paludosa* to 25 metres tall. Over a tall shrub layer to 10 metres dominated by *Acacia leiocalyx*, Red Ash (*Alphitonia excelsa*), Logon Apple (*Acronychia imperforata*) and Salwood (*Acacia disparrima*). A lower layer of shrubs includes Coffee Bush (*Breynia oblongata*), Cheese Tree (*Glochidion ferdinandi*) and Tree Heath (*Trochocarpa laurina*). The ground storey consists of a dense layer of leaf litter with a sparse cover (< 3%) of herbs and grasses. Common species within the ground layer include Many-flowered Mat-rush (*Lomandra multiflora*), Blue Flax Lily (*Dianella caerulea* var. *producta*), Rough Saw Sedge (*Gahnia aspera*), Spear Grass (*Austrostipa pubescens*) and Creeping Beard Grass (*Oplismenus imbecillis*).

This vegetation type covers approximately 4.23 hectares of the site.



Plate 1 Blackbutt - bloodwood dry heathy open forest in the south west of the site

2.2.2 Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the North Coast (PCT ID NR123)

Blackbutt-Turpentine dry heathy forest is a tall open forest that occurs on sandstone geologies of the Clarence-Moreton Basin from the southern Richmond Range east to the Coast Range.

Within the study area this plant community is dominated by Blackbutt (*Eucalyptus pilularis*), Turpentine (*Syncarpia glomerata*), Red Mahogany (*Eucalyptus resinifera*) and *Angophora woodsiana* to 25 metres tall with a cover of approximately 40%. The midstorey consists of a tall shrub layer to 8 metres dominated by *Acacia leiocalyx*, Red Ash (*Alphitonia excelsa*), Tree Heath (*Trochocarpa laurina*), Flaky-barked Tea-tree (*Leptospermum trinervium*), *Persoonia conjuncta*, Cheese tree (*Glochidion ferdinandiana*) and Blackthorn (*Bursaria spinosa*) over a dense low shrublayer to 2 metres dominated by Handsome Flat Pea (*Platylobium formosum*), *Hibbertia marginata*, *Leucopogon lanceolatus* and Coffee Bush (*Breynia oblongata*). The groundlayer is dominated by Wire Grass (*Entolasia stricta*), Grass Trees (*Xanthorrhoea* sp), Spiny-headed Mat-rush (*Lomandra longifolia*), Rough Saw-sedge (*Gahnia aspera*), Common Bracken (*Pteridium esculentum*), Crinkle Bush (*Lomatia silaifolia*), Blue Flax-lily (*Dianella caerulea*) and *Lepidosperma laterale*. This community also contains a variety of vines and climbers including Wonga Vine (*Pandorea pandorana*), Lawyer vine (*Smilax australis*), Sweet Sarsaparilla (*Smilax glycyphylla*), Molucca Bramble (*Rubus moluccanus* var. *trilobus*) and Stiff Jasmine (*Jasminum volubile*).

This vegetation type covers approximately 6.27 hectares of the site.



Plate 2 Blackbutt - Turpentine dry heathy open forest in the north of the site

2.3 Fauna habitats

The site represents a pre-existing disturbance area of the operational quarry that is surrounded by an area of bushland. Vegetation is continuous and has good connectivity to the north and south of the site. The main fauna habitats that occur within the site are associated with the dry open forest communities. Habitat within these vegetation communities are described in detail below.

The site would be expected to support a moderately high diversity of native fauna species. Habitat values are somewhat lower than would be present at an undisturbed site, given the previous selective logging that has occurred, however a number of mature-age trees have been retained that now support hollows. There are also other ongoing habitat disturbances such as noise from quarry operations.

The site contains a range of habitat features which would provide shelter and foraging resources for a variety of native fauna, including the following features of particular relevance to this Plan:

- A moderate density of hollow-bearing trees with a range of hollow sizes and positions, including trees with hollows at ground level, limb hollows, trunk fissures and dead trees (stags). These would provide potential roost sites for several native birds, arboreal and terrestrial mammals and microbats.
- A moderate density of fallen hollow logs, woody debris and leaf litter that would provide potential foraging and shelter habitat for ground-dwelling mammals, reptiles and insectivorous birds.
- Resin producing species such as Pink Bloodwood (*Corymbia intermedia*) also occur and provide potential foraging habitat for gliders, including the threatened Squirrel Glider (*Petaurus norfolcensis*) and Yellow Bellied Glider (*Petaurus australis*).

- The quarry face itself, which is uneven and may provide basking, shelter and foraging resources for native reptiles, and potential shelter habitat for small terrestrial mammals or birds as well as diurnal roosts for microbats.

2.4 Fauna species

A range of common fauna species are likely to shelter and nest in vegetation at the site. Various hollow-dependent fauna are known to occur in the site (i.e. recorded during surveys for the project) or could potentially occur (based on records in the locality). These include fauna groups such as possums and gliders, microbats, owls, cockatoos, parrots, and other birds. Fauna species that have been recorded or are likely to utilise hollow-bearing trees within the site, which may be encountered during clearing activities, are summarised below in Table 2-1.

Table 2-1 Threatened fauna species with potential to utilise tree hollows recorded at the site

| Scientific name | Common name | TSC Act | EPBC Act | Habitat |
|----------------------------------|--------------------------------|---------|----------|---------------------------------|
| <i>Calyptorhynchus lathamii</i> | Glossy Black-Cockatoo | V | - | Tree hollows |
| <i>Glossopsitta pusilla</i> | Little Lorikeet | V | - | Tree hollows |
| <i>Ninox connivens</i> | Barking Owl | V | - | Tree hollows |
| <i>Ninox strenua</i> | Powerful Owl | V | - | Tree hollows |
| <i>Tyto novaehollandiae</i> | Masked Owl | V | - | Tree hollows |
| <i>Chalinolobus nigrogriseus</i> | Hoary Wattled Bat | V | - | Tree hollows |
| <i>Dasyurus maculatus</i> | Spotted-tailed Quoll | V | E | Ground habitat and tree hollows |
| <i>Mormopterus norfolkensis</i> | Eastern Freetail-bat | V | - | Tree hollows |
| <i>Nyctophilus bifax</i> | Eastern Long-eared Bat | V | - | Tree hollows |
| <i>Petaurus australis</i> | Yellow-bellied Glider | V | - | Tree hollows |
| <i>Petaurus norfolcensis</i> | Squirrel Glider | V | - | Tree hollows |
| <i>Phascogale tapoatafa</i> | Brush-tailed Phascogale | V | - | Tree hollows |
| <i>Saccolaimus flaviventris</i> | Yellow-bellied Sheath-tail-bat | V | - | Tree hollows |
| <i>Scoteanax rueppellii</i> | Greater Broad-nosed Bat | V | - | Tree hollows |

The codes used in this table are: E – endangered; V – vulnerable; M- migratory

Note: The above table lists species which have been recorded or which may utilise the site. The list is not intended to be definitive and additional native species, not listed above, may also be present at the site.

3. Hollow surveys

3.1 Methods

3.1.1 Development site

Prior to the commencement of any clearing activities, a nest box survey of the site was undertaken by two suitably qualified ecologists on the 22 – 24 August 2017.

During the nest box survey all hollow-bearing trees and other significant habitat features, such as fallen logs, were identified with a “H” in high visibility spray paint and high visibility flagging tape. Each feature was also identified with a GPS.

Trees were inspected visually, and with binoculars where required. Details of identified hollow-bearing trees included GPS position, tree species, tree height, diameter at breast height (DBH), number and size of trunk hollows, number and size of limb hollows, and evidence of fauna usage were recorded.

A detailed tree hollow register is provided in Appendix A which details the information obtained during surveys and assists with nest box requirements and later pre-clearing surveys.

3.1.2 Proposed nest box installation locations

On the 1 November 2017, two ecologists conducted further surveys within the proposed nest box installation location areas immediately adjacent to the site to assess hollow density and sizes in these areas (Figure 4-1). A total of three transects were completed, one within each vegetation zone. All HBTs within a 20 x 200 m area were recorded and details are provided in the tree hollow register in Appendix A. This information was collected to assist with determining the number and type of nest boxes required to be installed.

3.2 Results

3.2.1 Development site

A total of 245 trees supporting visible hollows were identified across all three stages of the site (Appendix A). The number of small, medium and large hollows, along with their position on the tree is provided in Table 3-1 below. See Appendix A for full tree hollow register.

Table 3-1 Summary of number of hollows recorded on the development site

| Type of hollow | Small <5 cm | | Medium 5-15 cm | | Large >15 cm | | Total (percentage) |
|----------------|----------------|-------------|-------------------|-------------|-----------------|-------------|-----------------------|
| | Trunk Hollow | Limb Hollow | Trunk Hollow | Limb Hollow | Trunk Hollow | Limb Hollow | |
| Stage 1 | 0 | 47 | 4 | 15 | 10 | 10 | 86 (7.7%) |
| Stage 2 | 13 | 232 | 34 | 158 | 39 | 76 | 552 (49.9%) |
| Stage 3 | 19 | 199 | 24 | 140 | 40 | 47 | 469 (42.4%) |
| Total | 32 | 478 | 62 | 313 | 89 | 133 | 1,107 |

3.2.2 Proposed nest box installation locations

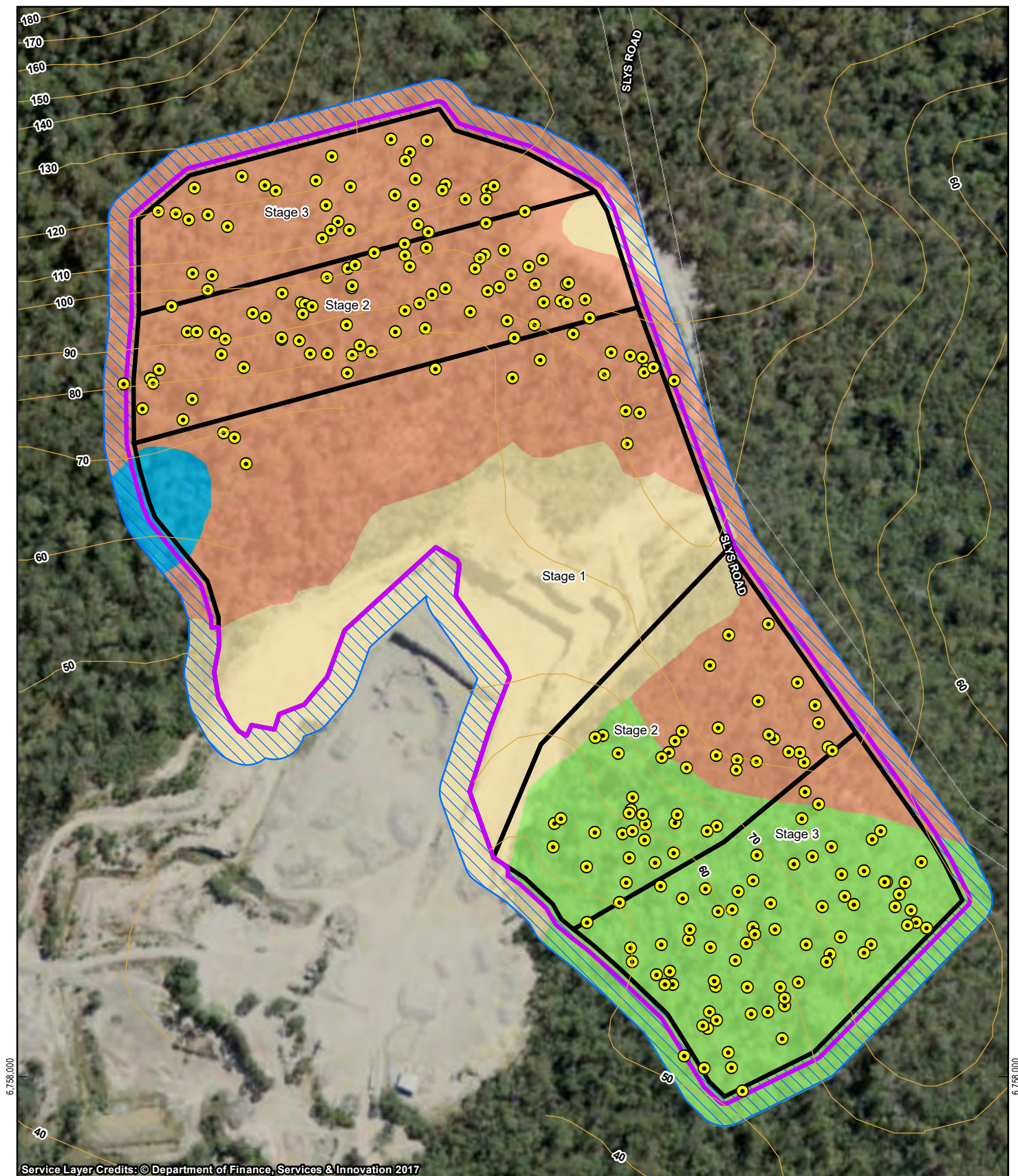
Three vegetation types are present within the proposed nest box location areas:

- Spotted Gum - Grey Ironbark – Pink Bloodwood open forest of the Clarence Valley lowlands of the North Coast (NR246)
- Blackbutt - Bloodwood dry heathy open forest on Sandstone of the northern NSW North Coast Bioregion (NR 115)
- Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion (NR 123)










Transects completed in each of these vegetation zones found the abundance and density of hollows to be largely consistent with the vegetation to be removed from the site (see Table 3-2). Small hollows make up 47% of hollows overall, medium make up 38% of hollows overall and large hollows make up 15% of hollow overall. There is some variation between transects, but these general ratios are mostly similar.

Table 3-2 Summary of number of hollows recorded in the proposed nest box locations

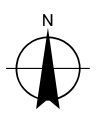
| Hollow Type | Size Class | T1 (NR246) | T2 (NR123) | T3 (NR115) | TOTAL |
|---------------|------------|---------------|---------------|---------------|------------|
| Trunk Hollows | Small | 1 | 8 | 7 | 16 |
| | Medium | 7 | 12 | 1 | 20 |
| | Large | 4 | 4 | 1 | 9 |
| Limb Hollows | Small | 24 | 26 | 18 | 68 |
| | Medium | 15 | 20 | 12 | 47 |
| | Large | 4 | 6 | 8 | 18 |
| TOTAL | | 55 | 76 | 47 | 178 |



LEGEND

- | | | |
|---|---|---|
|  Cadastral |  Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the NSW North Coast Bioregion (NR 123) |  Cleared |
|  Stages |  Blackbutt - bloodwood dry heathy open forest on Sandstone of the northern NSW North Coast Bioregion (NR 115) |  Swamp Mahogany swamp forest on coastal lowlands of the NSW North Coast Bioregion and northern Sydney Basin Bioregion (NR 254) |
|  Subject site | |  Hollow bearing tree |
|  20m buffer | | |

Paper Size A4
0 25 50 75 100
Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Newman Quarrying Pty Ltd
Sly's Quarry
Nest Box Management Plan

| | |
|------------|-------------|
| Job Number | 22-17528 |
| Revision | 0 |
| Date | 15 Sep 2017 |

Location of hollow bearing trees

Figure 3-1

G:\22\17528\GIS\Maps\Deliverables\NBMP\2217528_NBMP002_HBT_0.mxd

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E ntlmail@ghd.com W www.ghd.com.au

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Data source: LPI: DCDB / DTDB, Aerial Imagery, 2012.. Created by: fmacKay

4. Management measures

4.1.1 Nest box installation

Nest box requirements

Nest boxes will be installed in the adjacent native vegetation to provide a safe location for release of any hollow-dependent fauna captured during clearing operations and to help compensate for the loss of tree-hollows identified at the site (see Figure 4-1). The number of nest boxes required has been calculated based on the number of hollows and hollow-bearing trees identified within the site. A total of 245 hollow-bearing trees were identified within the development footprint which contained a total of 1,107 hollows. Similar hollow densities and ratios of hollow sizes were found to occur in the adjacent habitat where nest box placement is proposed.

Given the high density of hollows identified within and adjacent to the site and to avoid oversaturating the emplacement vegetation with nest boxes, the installation of up to 150 nest boxes of various sizes is recommended. These would be installed in stages into the proposed nest box locations outlined in Figure 4-1. The following factors were taken into consideration in determining the number and type of nest boxes:

- The number of hollow-bearing trees being removed
- The ratio of hollow sizes being removed
- The tree hollow preferences of native hollow-dependant fauna known or likely to occur in the area
- The sizes and quantities of hollows in the proposed nest box location areas
- Feasibility of installing nest boxes and suitability of trees

The number of specific types of nest boxes required has been calculated by the number of each hollow size category recorded at the site and taking into account the various fauna groups that use that size class. Different nest box shapes are used by different fauna groups.

The number and sizing requirements for compensatory nest boxes based on these calculations are provided in Table 4-1.

Table 4-1 Nest box requirements at the site

| Size category | Number of hollows identified | Percent of total HBTs in proposed nest box locations | Percent of total HBTs in development site | Target species group | Number of nest boxes required |
|--------------------|------------------------------|--|---|----------------------|-------------------------------|
| Small (<5 cm) | 510 | 47% | 46% of 150 | Microbats | 34 |
| | | | (69) | Small Gliders | 35 |
| Medium (5-15 cm) | 375 | 38% | 34% of 150 | Lorikeets/Rosell as | 25 |
| | | | (51) | Possums | 26 |
| Large (>15 cm) | 222 | 15% | 20% of 150 | Cockatoos | 15 |
| | | | (30) | Owls | 15 |
| Grand total | 1,107 | | | | 150 |

Installation of nest boxes would be staged based on timing of clearing. The numbers required for each stage is provided in Table 4-2 and are based on the ratios detailed in Table 4-1. Prior to each stage, the total number to be installed may be revised by the project ecologist based on evidence of usage and presence of suitable trees for installation.

Table 4-2 Staged nest box requirements

| Stage | Number of nest boxes required Small (<5 cm) | Number of nest boxes required Medium (5-15 cm) | Number of nest boxes required Large (>15 cm) | Total nest boxes to be installed* |
|----------|---|--|--|-----------------------------------|
| Stage 1 | 5 | 4 | 2 | 12 |
| | (3 microbat, 2 glider) | (2 lorikeet, 2 possum) | (1 cockatoo, 1 owl) | |
| Stage 2* | 34 | 25 | 15 | 75 |
| | (17 microbat, 17 glider) | (12 lorikeet, 13 possum) | (7 cockatoo, 8 owl) | |
| Stage 3* | 29 | 22 | 13 | 64 |
| | (14 microbat, 15 glider) | (11 lorikeet, 11 possum) | (7 cockatoo, 6 owl) | |
| | 69 | 51 | 30 | 150 |

* Total number required to be reassessed if needed following monitoring of initial nest boxes installed.

Recommended nest box types and dimensions are detailed in Table 4-3. Nest box dimensions are based on information contained in Franks and Franks (2011), Birds Australia (2001) and Birdlife Australia (undated) and advice from nest box specialists (Hollow Log Homes). Note that a range of dimensions are recommended for specific fauna species in the literature and specifications can be subject to change over time based on the results of published monitoring surveys.

Nest boxes will be sourced from a suitable nest box manufacturer such as Hollow Log Homes.

Table 4-3 Nest box dimensions

| Target group | Entrance diameter (mm) | Approximate dimensions (mm) | Approximate Depth (mm) |
|-----------------------|------------------------|-----------------------------|------------------------|
| Microbats | 10-30 | 200 x 200 | 400 |
| Small Gliders | 40-50 | 200 x 200 | 300 |
| Lorikeets/Rosellas | 50-70 | 200 x 200 | 400 |
| Possums | 58-100 | 250 x 300 | 400 |
| Glossy Black Cockatoo | 100-170 | 550 x 500 | 650-800 |
| Owls | 100-170 | 550 x 500 | 650-800 |

Nest box installation

Nest boxes are to be installed by an arborist or qualified tree climber within areas of intact native vegetation adjacent to the site under supervision of a suitably qualified ecologist. The following protocol is recommended for installing nest boxes:

- Nest boxes will be installed at least one months prior to commencement of clearing operations, and may be undertaken in a staged approach corresponding to each quarry expansion stage as detailed in Table 4-2.

- Nest boxes are to be installed in trees that do not already have hollows.
- All nest boxes are to be set at least 3 m above the ground.
- Nest boxes should be placed on the north-eastern side of the tree or most-shaded area to avoid the hot afternoon sun.
- All nest boxes should be attached to the tree using the 'Habisure' system (Franks and Franks 2011) or similar durable external grade fixing system that does not damage the tree:
 - Where the wire is in contact with the tree trunk or branch it must be plastic-coated or threaded through a length of garden hose to protect the tree
 - Wire must be folded to allow for tree growth
 - Where possible the wire around the tree should pass over a branch behind the trunk, although nest boxes can be installed directly on a straight-stemmed tree
- Details of each nest box installed should be recorded for future monitoring and should include:
 - GPS location
 - Tree species
 - Nest box type

A template nest box register is provided in Appendix B.

4.1.2 Timing

Nest boxes are to be installed one month prior to clearing of hollow-bearing trees in each stage. The installation of nest boxes for Stage 1 and 2 comprises a total of 87 nest boxes. It is recommended that prior to the installation of final nest boxes for Stage 3 clearing, the project ecologist would assess the continued suitability of the proposed nest box locations and remaining trees within that area to determine if the final total number of nest boxes required.

4.2 Monitoring of nest boxes

4.2.1 Monitoring

Nest boxes are to be monitored by the project ecologist and arborist to determine their usage and to assess whether any repairs or replacement is required. Monitoring is to be conducted twice a year for a minimum period of five (5) years following installation. Monitoring can coincide with pre-installation checks for later stages.

The following inspection procedure is recommended:

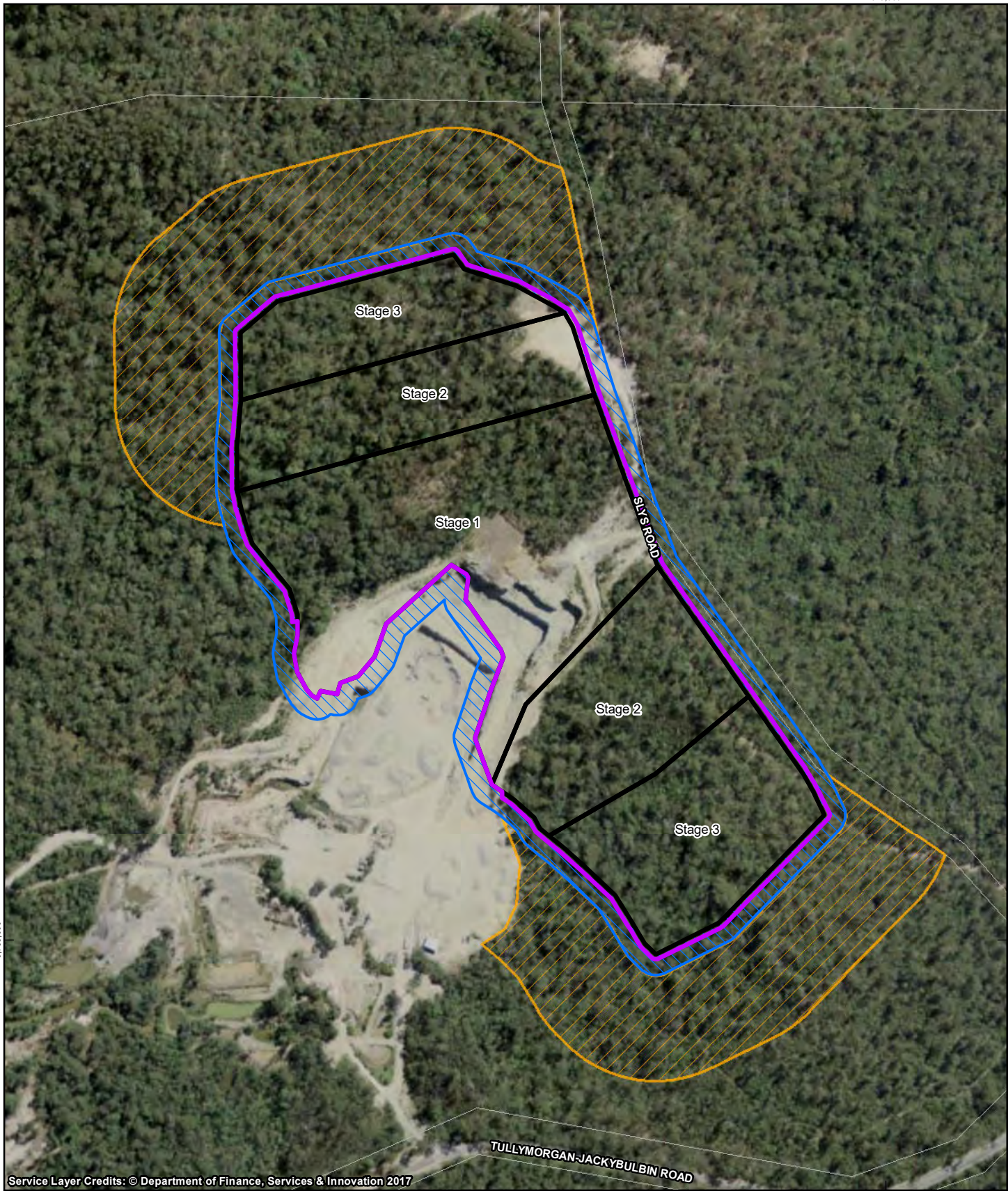
- A fibre-optic camera should be used to check nest boxes for signs of use and to minimise disturbance of any resident fauna. Visual inspections should be made if the exact species cannot be determined using the fibre optic camera.
- A record of the species present, numbers of individuals, and any breeding activity (eggs, nestlings etc.) should be kept.
- If nest boxes show evidence of being occupied by feral animals (e.g. Honey Bees, Common Mynas) the nest box should be removed and/or modified to prevent occupation by such species.

Any damaged nest boxes or nest boxes containing feral animals are to be taken down and repaired on site where possible. Any feral animals captured are to be removed and euthanized humanely by a qualified veterinarian or ecologist/wildlife rescuer with appropriate animal ethics approval.






A nest box monitoring template is provided in Appendix B.

4.2.2 Reporting

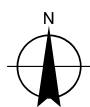
Monitoring reports are to be prepared by the project ecologist and included in the Annual Review along with any recommendations. The monitoring report will note fauna species using the nest boxes (or evidence of recent usage), and any requirements for maintenance, replacement or changes to the total number to be installed. The nest box register is to be updated following any changes to nest boxes as a result of feral habitation or maintenance requirements.



LEGEND

-  Cadastral
-  Proposed nest box locations
-  Stages
-  Subject site
-  20m buffer

Paper Size A4
0 30 60 90 120
Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



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Nest Box Management Plan

| | |
|------------|-------------|
| Job Number | 22-17528 |
| Revision | 0 |
| Date | 15 Sep 2017 |

Proposed nest box locations

Figure 4-1

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Data source: LPI: DCDB / DTDB, Aerial Imagery, 2012.. Created by: fmackay

5. Summary of management actions

A summary of management actions arising from this Plan is detailed in Table 5-1.

Table 5-1 Management actions

| Management action | Timing | Responsibility | Reporting | Status |
|--|---|-------------------|---|-------------|
| Pre-construction | | | | |
| Identification of the number and size of hollows to be removed | At least 6 months prior to clearing | Project ecologist | Tree hollow map and Hollow Register to be provided to Newman Quarrying Pty Ltd and contractor | Complete |
| Preparation of Nest Box Management Plan that outlines the number, size and location of nest boxes to be installed. | At least 6 months prior to clearing | Project ecologist | Nest Box Management Plan | Complete |
| Ordering of required nest boxes | At least 2 months prior to clearing of each stage | Newman Quarrying | NA | Outstanding |
| Installation of required nest boxes as per Nest Box Management Plan prior to commencement of each stage of clearing. | At least 1 month prior to clearing of each stage | Project ecologist | Include in routine weekly monitoring on <i>Environmental Inspection Checklist</i> | Outstanding |
| Post-installation | | | | |
| Monitoring of nest boxes | Twice a year for 5 years | Project ecologist | Report to DPE and OEH in the Annual Review. | Outstanding |

6. References

- Birdlife Australia (undated). Nest Boxes – technical information. <http://birdlife.org.au/education-publications>
- DPI (2001). *Code of practice for the welfare of wildlife during rehabilitation*
- Franks, A. and Franks, S. (2011). *Nest Boxes for Wildlife, a practical guide*
- GHD (2015). *Environmental Impact Statement*. Prepared for Proposed Quarry Expansion at Lot 2 DP 1055044, Tullymorgan-Jackybulbin Road, Mororo
- GHD (2016). *Biodiversity Assessment Report*. Prepared for Slys Quarry Environmental Impact Statement
- GHD (2017a). *Biodiversity and Rehabilitation Management Plan*. Prepared for Quarry Expansion at Lot 2 DP 1055044, Tullymorgan-Jackybulbin Road, Mororo
- GHD (2017b). *Environmental Management Strategy*. Prepared for Quarry Expansion at Lot 2 DP 1055044, Tullymorgan-Jackybulbin Road, Mororo
- NHMRC (2004). *Australian code of practice for the care of animals for scientific purposes*
- RTA (2011). *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects*. Roads and Traffic Authority

Appendices

Appendix A – Tree Hollow Register

Development site

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 1 | Eucalypt sp. | 20 | 80 | | | 1 | 8 | 4 | 1 | 518581 | 6758631 | Stage 3 - North |
| 2 | Stag | 12 | 45 | | | 4 | 1 | | | 518557 | 6758631 | Stage 3 - North |
| 3 | Stag | 10 | 45 | | | 1 | 3 | 1 | 1 | 518570 | 6758623 | Stage 3 - North |
| 4 | Eucalypt sp. | 13 | 45 | | | | 3 | 1 | 1 | 518567 | 6758617 | Stage 3 - North |
| 5 | Stag | 12 | 40 | | | | 2 | | | 518574 | 6758605 | Stage 3 - North |
| 6 | Stag | 20 | 85 | | | 2 | 3 | 4 | 2 | 518594 | 6758601 | Stage 3 - North |
| 7 | Eucalypt sp. | 16 | 50 | | 1 | | 1 | 1 | | 518607 | 6758591 | Stage 3 - North |
| 8 | Stag | 20 | 50 | | | | 2 | 1 | | 518622 | 6758598 | Stage 3 - North |
| 9 | Stag | 18 | 55 | | | | 4 | | | 518626 | 6758600 | Stage 3 - North |
| 10 | Stag | 17 | 45 | | | | 1 | 2 | | 518621 | 6758591 | Stage 3 - North |
| 11 | Stag | 12 | 45 | | | | | 2 | | 518621 | 6758575 | Stage 2 - North |
| 12 | Stag | 20 | 115 | | | 1 | 2 | 4 | 3 | 518647 | 6758583 | Stage 2 - North |
| 13 | Stag | 14 | 55 | | | | 3 | | | 518633 | 6758557 | Stage 2 - North |
| 14 | <i>E. pilularis</i> | 21 | 70 | | 1 | | 4 | 2 | | 518620 | 6758554 | Stage 2 - North |
| 15 | Stag | 13 | 8 | 1 | | | 3 | 1 | | 518617 | 6758552 | Stage 2 - North |
| 16 | Stag | 12 | 35 | | 1 | | | 1 | | 518614 | 6758544 | Stage 2 - North |
| 17 | <i>E. pilularis</i> | 21 | 90 | | 1 | | 3 | 2 | | 518622 | 6758529 | Stage 2 - North |
| 18 | Eucalypt sp. | 13 | 90 | | | 1 | | | | 518630 | 6758532 | Stage 2 - North |
| 19 | Stag | 12 | 20 | | | | 3 | | | 518635 | 6758509 | Stage 2 - North |
| 20 | Stag | 14 | 65 | | 2 | 1 | | 1 | 1 | 518654 | 6758506 | Stage 2 - North |
| 21 | Stag | 12 | 35 | | | | 2 | | | 518640 | 6758498 | Stage 2 - North |
| 22 | Eucalypt sp. | 20 | 85 | | | 1 | 2 | | 1 | 518660 | 6758522 | Stage 2 - North |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 23 | Eucalypt sp. | 15 | 45 | 1 | 1 | | 2 | 1 | | 518671 | 6758523 | Stage 2 - North |
| 24 | Eucalypt sp. | 14 | 50 | | 1 | | | 1 | 2 | 518676 | 6758522 | Stage 2 - North |
| 25 | Eucalypt sp. | 19 | 80 | | | 1 | 1 | 2 | 1 | 518638 | 6758540 | Stage 2 - North |
| 26 | <i>E. pilularis</i> | 17 | 45 | | 1 | | 1 | | | 518650 | 6758546 | Stage 2 - North |
| 27 | Stag | 16 | 30 | | | | 7 | 1 | | 518390 | 6758450 | Stage 2 - North |
| 28 | Eucalypt sp. | 21 | 105 | | 1 | 1 | 1 | 1 | 1 | 518377 | 6758466 | Stage 2 - North |
| 29 | Eucalypt sp. | 19 | 55 | | 1 | 1 | 2 | 1 | 1 | 518395 | 6758471 | Stage 2 - North |
| 30 | Stag | 17 | 50 | | | 1 | 1 | 1 | 2 | 518397 | 6758467 | Stage 2 - North |
| 31 | Eucalypt sp. | 17 | 50 | | | 2 | 1 | | | 518401 | 6758476 | Stage 2 - North |
| 32 | Eucalypt sp. | 19 | 65 | | | | 4 | 2 | | 518420 | 6758502 | Stage 2 - North |
| 33 | Stag | 9 | 45 | 1 | | | 2 | 1 | | 518410 | 6758519 | Stage 2 - North |
| 34 | Eucalypt sp. | 11 | 50 | | 1 | | | | | 518400 | 6758583 | Stage 3 - North |
| 35 | Eucalypt sp. | 13 | 55 | | | | | 2 | 1 | 518413 | 6758581 | Stage 3 - North |
| 36 | Stag | 12 | 50 | | | | 4 | 4 | | 518421 | 6758578 | Stage 3 - North |
| 37 | Eucalypt sp. | 9 | 40 | | | | | 2 | 1 | 518434 | 6758580 | Stage 3 - North |
| 38 | Stag | 6 | 40 | | | 1 | | | | 518425 | 6758598 | Stage 3 - North |
| 39 | Eucalypt sp. | 6 | 50 | | 1 | | 1 | 1 | | 518457 | 6758606 | Stage 3 - North |
| 40 | Eucalypt sp. | 15 | 60 | | | | 1 | 2 | | 518472 | 6758601 | Stage 3 - North |
| 41 | Stag | 6 | 30 | | | | | 1 | | 518480 | 6758597 | Stage 3 - North |
| 42 | Stag | 10 | 45 | | | | | 3 | 1 | 518507 | 6758603 | Stage 3 - North |
| 43 | Eucalypt sp. | 15 | 65 | | | | 3 | | | 518517 | 6758620 | Stage 3 - North |
| 44 | Stag | 10 | 45 | | | | 3 | | | 518530 | 6758600 | Stage 3 - North |
| 45 | Eucalypt sp. | 12 | 45 | | | | 2 | 1 | | 518560 | 6758594 | Stage 3 - North |
| 46 | Eucalypt sp. | 14 | 48 | | | | 2 | 3 | | 518573 | 6758587 | Stage 3 - North |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 47 | Stag | 17 | 70 | | | | | 2 | 3 | 518575 | 6758574 | Stage 3 - North |
| 48 | Stag | 12 | 35 | | | | 1 | 2 | | 518582 | 6758569 | Stage 3 - North |
| 49 | Eucalypt sp. | 19 | 75 | | | | 1 | 1 | 2 | 518592 | 6758597 | Stage 3 - North |
| 50 | Stag | 16 | 85 | | | | | | 4 | 518566 | 6758561 | Stage 2 - North |
| 51 | Stag | 6 | 45 | | | 1 | | | | 518546 | 6758555 | Stage 2 - North |
| 52 | Eucalypt sp. | 9 | 30 | | 1 | | | | | 518529 | 6758570 | Stage 3 - North |
| 53 | Eucalypt sp. | 10 | 45 | | | | | 1 | | 518521 | 6758576 | Stage 3 - North |
| 54 | Eucalypt sp. | 11 | 55 | | 1 | | | 1 | | 518517 | 6758570 | Stage 3 - North |
| 55 | Stag | 10 | 50 | | 1 | | 1 | 1 | | 518511 | 6758565 | Stage 3 - North |
| 56 | Eucalypt sp. | 18 | 85 | | | | 2 | 1 | 1 | 518513 | 6758587 | Stage 3 - North |
| 57 | Eucalypt sp. | 13 | 70 | 1 | 1 | | 1 | | | 518447 | 6758573 | Stage 3 - North |
| 58 | Eucalypt sp. | 16 | 90 | | | | | 1 | 3 | 518437 | 6758540 | Stage 3 - North |
| 59 | Eucalypt sp. | 18 | 85 | | | 1 | 1 | 1 | 2 | 518434 | 6758530 | Stage 3 - North |
| 60 | Eucalypt sp. | 16 | 80 | | | 1 | | | | 518424 | 6758541 | Stage 3 - North |
| 61 | Stag | 9 | 45 | | | | | | 1 | 518473 | 6758511 | Stage 2 - North |
| 62 | Stag | 11 | 60 | | 2 | | | 1 | 4 | 518484 | 6758528 | Stage 2 - North |
| 63 | Eucalypt sp. | 7 | 50 | 2 | 1 | | | 1 | | 518497 | 6758521 | Stage 2 - North |
| 64 | Stag | 12 | 70 | | 1 | 1 | 1 | 7 | 2 | 518464 | 6758514 | Stage 2 - North |
| 65 | <i>E. pilularis</i> | 19 | 90 | | | | 2 | 3 | 1 | 518446 | 6758497 | Stage 2 - North |
| 66 | Stag | 6 | 35 | 1 | 1 | | | | | 518439 | 6758501 | Stage 2 - North |
| 67 | Eucalypt sp. | 8 | 75 | | | 1 | | 2 | 1 | 518443 | 6758486 | Stage 2 - North |
| 68 | <i>E. pilularis</i> | 15 | 75 | | | | 4 | 1 | | 518427 | 6758502 | Stage 2 - North |
| 69 | Eucalypt sp. | 15 | 70 | | | | | 3 | 1 | 518458 | 6758478 | Stage 2 - North |
| 70 | Eucalypt sp. | 12 | 120 | | | 1 | | | | 518423 | 6758456 | Stage 2 - North |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 71 | Eucalypt sp. | 22 | 90 | | 1 | | | | | 518417 | 6758443 | Stage 2 - North |
| 72 | <i>E. pilularis</i> | 25 | 200 | | | 2 | | | 2 | 518445 | 6758434 | Stage 1 |
| 73 | Eucalypt sp. | 17 | 95 | | | | | | 2 | 518484 | 6758497 | Stage 2 - North |
| 74 | <i>E. pilularis</i> | 13 | 70 | | | | | 3 | 1 | 518500 | 6758520 | Stage 2 - North |
| 75 | Stag | 6 | 50 | | | 1 | 1 | 2 | 2 | 518498 | 6758514 | Stage 2 - North |
| 76 | Stag | 12 | 55 | 1 | | | | 1 | 4 | 518504 | 6758519 | Stage 2 - North |
| 77 | <i>E. pilularis</i> | 20 | 90 | | | | 3 | 2 | 2 | 518495 | 6758496 | Stage 2 - North |
| 78 | Eucalypt sp. | 14 | 80 | | 1 | | | 1 | | 518484 | 6758498 | Stage 2 - North |
| 79 | Eucalypt sp. | 15 | 65 | | 1 | | | 1 | | 518503 | 6758487 | Stage 2 - North |
| 80 | Eucalypt sp. | 16 | 45 | | | | 2 | 1 | | 518514 | 6758487 | Stage 2 - North |
| 81 | Eucalypt sp. | 12 | 55 | | | | 1 | 1 | | 518527 | 6758506 | Stage 2 - North |
| 82 | Stag | 10 | 50 | | | 1 | | 1 | | 518536 | 6758493 | Stage 2 - North |
| 83 | Stag | 12 | 70 | | | | 1 | 2 | 2 | 518531 | 6758531 | Stage 2 - North |
| 84 | Eucalypt sp. | 17 | 70 | | | | 1 | 2 | 2 | 518531 | 6758533 | Stage 2 - North |
| 85 | Stag | 12 | 60 | | | 2 | 2 | 2 | | 518514 | 6758539 | Stage 2 - North |
| 86 | Eucalypt sp. | 18 | 75 | | 1 | | 1 | 6 | 1 | 518528 | 6758545 | Stage 2 - North |
| 87 | Eucalypt sp. | 9 | 50 | | | | 1 | 2 | 1 | 518533 | 6758547 | Stage 2 - North |
| 88 | Stag | 8 | 45 | | 1 | | 2 | 3 | 3 | 518567 | 6758553 | Stage 2 - North |
| 89 | Eucalypt sp. | 9 | 50 | | | | 2 | 1 | 1 | 518570 | 6758546 | Stage 2 - North |
| 90 | Stag | 12 | 75 | | | 1 | 2 | 2 | | 518581 | 6758558 | Stage 2 - North |
| 91 | Stag | 6 | 60 | | | | 3 | 1 | | 518585 | 6758527 | Stage 2 - North |
| 92 | Stag | 17 | 70 | | 2 | | 2 | 1 | | 518576 | 6758521 | Stage 2 - North |
| 93 | Stag | 16 | 110 | | | 2 | 1 | 2 | 6 | 518580 | 6758504 | Stage 2 - North |
| 94 | Eucalypt sp. | 15 | 80 | | | | 3 | 2 | | 518560 | 6758502 | Stage 2 - North |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 95 | Stag | 14 | 65 | | 1 | 2 | 2 | 3 | | 518566 | 6758516 | Stage 2 - North |
| 96 | Stag | 5 | 12 | | 1 | | 3 | | | 518544 | 6758489 | Stage 2 - North |
| 97 | Eucalypt sp. | 14 | 60 | | | 1 | | | | 518531 | 6758486 | Stage 2 - North |
| 98 | Eucalypt sp. | 12 | 50 | | | 1 | | | | 518528 | 6758474 | Stage 2 - North |
| 99 | Eucalypt sp. | 13 | 100 | | 1 | 1 | | | | 518452 | 6758431 | Stage 1 |
| 100 | Stag | 8 | 45 | 1 | | | 4 | 3 | | 518896 | 6758115 | Stage 3 - South |
| 101 | Stag | 15 | 31 | 1 | | | 6 | 3 | | 518880 | 6758089 | Stage 3 - South |
| 102 | Corymbia sp. | 12 | 50 | | | | 1 | 2 | | 518875 | 6758083 | Stage 3 - South |
| 103 | Eucalypt sp. | 15 | 50 | | | | | 4 | | 518860 | 6758094 | Stage 3 - South |
| 104 | Eucalypt sp. | 17 | 32 | | | | 4 | | | 518853 | 6758082 | Stage 3 - South |
| 105 | <i>E. pilularis</i> | 18 | 10 | | | | 2 | 1 | | 518850 | 6758078 | Stage 3 - South |
| 106 | Stag | 18 | 40 | 1 | | | 1 | 4 | | 518822 | 6758048 | Stage 3 - South |
| 107 | Eucalypt sp. | 15 | 45 | | | | 3 | 2 | | 518831 | 6758064 | Stage 3 - South |
| 108 | Stag | 7 | 45 | | | 1 | | | | 518820 | 6758026 | Stage 3 - South |
| 109 | Eucalypt sp. | 15 | 70 | | | | | | 2 | 518786 | 6758006 | Stage 3 - South |
| 110 | Stag | 12 | 40 | 1 | | | 2 | 1 | | 518794 | 6757990 | Stage 3 - South |
| 111 | Eucalypt sp. | 15 | 45 | | | | 1 | | 1 | 518768 | 6758006 | Stage 3 - South |
| 112 | Eucalypt sp. | 18 | 40 | | | 1 | | 1 | | 518755 | 6758014 | Stage 3 - South |
| 113 | Eucalypt sp. | 20 | 45 | 1 | | | 1 | | | 518771 | 6758044 | Stage 3 - South |
| 114 | Eucalypt sp. | 15 | 75 | | | | 2 | 2 | | 518776 | 6758038 | Stage 3 - South |
| 115 | Eucalypt sp. | 17 | 90 | | | | | 2 | | 518784 | 6758016 | Stage 3 - South |
| 116 | Eucalypt sp. | 12 | 45 | | 1 | | 2 | | | 518799 | 6758042 | Stage 3 - South |
| 117 | Eucalypt sp. | 15 | 70 | | | | | 2 | | 518822 | 6758053 | Stage 3 - South |
| 118 | Eucalypt sp. | 15 | 60 | | | | 3 | | | 518811 | 6758044 | Stage 3 - South |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|----------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 119 | Eucalypt sp. | 10 | 130 | | | 2 | 3 | | | 518819 | 6758061 | Stage 3 - South |
| 120 | Eucalypt sp. | 14 | 65 | | | | | 2 | 3 | 518837 | 6758089 | Stage 3 - South |
| 121 | Stag | 12 | 20 | | 1 | | | | | 518862 | 6758122 | Stage 3 - South |
| 122 | Eucalypt sp. | 12 | 45 | | 1 | | 2 | | | 518869 | 6758116 | Stage 3 - South |
| 123 | Stag | 15 | 45 | 1 | | | 5 | | | 518890 | 6758132 | Stage 3 - South |
| 124 | Stag | 12 | 40 | 1 | | | 3 | | | 518889 | 6758131 | Stage 3 - South |
| 125 | Stag | 12 | 43 | 1 | | | 5 | | | 518899 | 6758123 | Stage 3 - South |
| 126 | Stag | 12 | 28 | 1 | | | 3 | | | 518875 | 6758139 | Stage 3 - South |
| 127 | Stag | 6 | 25 | 1 | | | 1 | | | 518860 | 6758137 | Stage 3 - South |
| 128 | Stag | 8 | 45 | | 1 | | | 3 | | 518847 | 6758114 | Stage 3 - South |
| 129 | Eucalypt sp. | 17 | 45 | | | | 3 | | | 518816 | 6758099 | Stage 3 - South |
| 130 | <i>E. microcorys</i> | 22 | 75 | | | 1 | 2 | 1 | | 518801 | 6758101 | Stage 3 - South |
| 131 | Eucalypt sp. | 20 | 62 | | | 1 | 2 | 1 | | 518797 | 6758060 | Stage 3 - South |
| 132 | Stag | 7 | 32 | | | 1 | | | | 518776 | 6758061 | Stage 3 - South |
| 133 | Stag | 7 | 40 | | | 1 | | | | 518789 | 6758079 | Stage 3 - South |
| 134 | Corymbia sp. | 20 | 70 | | | 2 | 1 | 3 | 2 | 518775 | 6758064 | Stage 3 - South |
| 135 | Stag | 11 | 40 | | 1 | | 1 | 1 | | 518770 | 6758032 | Stage 3 - South |
| 136 | Stag | 10 | 85 | | | 1 | | | | 518767 | 6758034 | Stage 3 - South |
| 137 | Eucalypt sp. | 23 | 75 | | 1 | | 4 | 2 | 1 | 518747 | 6758062 | Stage 3 - South |
| 138 | Stag | 10 | 90 | | | 1 | | | 1 | 518741 | 6758062 | Stage 3 - South |
| 139 | <i>E. microcorys</i> | 21 | 110 | | 1 | 1 | 2 | | | 518772 | 6758087 | Stage 3 - South |
| 140 | <i>E. microcorys</i> | 14 | 43 | | | | 3 | 1 | | 518796 | 6758090 | Stage 3 - South |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 141 | Eucalypt sp. | 14 | 40 | | | | 3 | | | 518802 | 6758096 | Stage 3 - South |
| 142 | Stag | 15 | 60 | | | | 3 | 2 | | 518813 | 6758117 | Stage 3 - South |
| 143 | Stag | 13 | 62 | | | 1 | | 1 | 3 | 518828 | 6758143 | Stage 3 - South |
| 144 | Stag | 9 | 45 | | 1 | | 4 | 3 | 1 | 518887 | 6758165 | Stage 3 - South |
| 145 | Stag | 8 | 50 | 1 | | | 4 | 2 | | 518881 | 6758160 | Stage 3 - South |
| 146 | Eucalypt sp. | 6 | 55 | | | 1 | 1 | | | 518903 | 6758131 | Stage 3 - South |
| 147 | Stag | 7 | 47 | | 1 | | 1 | 4 | | 518914 | 6758145 | Stage 3 - South |
| 148 | Stag | 15 | 55 | 1 | | | 3 | 1 | | 518911 | 6758104 | Stage 3 - South |
| 149 | Corymbia sp. | 14 | 36 | | | | 4 | | | 518917 | 6758100 | Stage 3 - South |
| 150 | Stag | 12 | 40 | 1 | 1 | | 1 | 3 | | 518905 | 6758102 | Stage 3 - South |
| 151 | Eucalypt sp. | 13 | 50 | 1 | | | | 3 | | 518907 | 6758113 | Stage 3 - South |
| 152 | Eucalypt sp. | 14 | 35 | | | | 1 | | | 518853 | 6758155 | Stage 3 - South |
| 153 | Eucalypt sp. | 22 | 85 | | | 2 | 4 | 2 | 2 | 518841 | 6758149 | Stage 3 - South |
| 154 | Stag | 13 | 50 | | | | 6 | 4 | 1 | 518803 | 6758149 | Stage 3 - South |
| 155 | Eucalypt sp. | 18 | 51 | | | | 1 | 1 | | 518801 | 6758132 | Stage 3 - South |
| 156 | Stag | 20 | 65 | | 1 | | 10 | 4 | 1 | 518787 | 6758113 | Stage 3 - South |
| 157 | Eucalypt sp. | 18 | 60 | 1 | | | | 1 | | 518791 | 6758125 | Stage 3 - South |
| 158 | Stag | 16 | 33 | | | | 4 | | | 518777 | 6758111 | Stage 3 - South |
| 159 | Eucalypt sp. | 23 | 95 | 1 | | 2 | 2 | 3 | 3 | 518757 | 6758093 | Stage 3 - South |
| 160 | Stag | 19 | 70 | | | 2 | 11 | 4 | 1 | 518758 | 6758099 | Stage 3 - South |
| 161 | Eucalypt sp. | 16 | 75 | | | 1 | | | | 518745 | 6758071 | Stage 3 - South |
| 162 | Eucalypt sp. | 22 | 65 | | 1 | 1 | | 1 | | 518739 | 6758089 | Stage 3 - South |
| 163 | Eucalypt sp. | 24 | 120 | | 2 | 2 | 2 | 2 | 1 | 518736 | 6758069 | Stage 3 - South |
| 164 | <i>E. pilularis</i> | 20 | 120 | | 1 | 1 | 2 | 4 | 1 | 518720 | 6758077 | Stage 3 - South |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 165 | Eucalypt sp. | 18 | 45 | | | | 2 | 1 | | 518718 | 6758087 | Stage 3 - South |
| 166 | Eucalypt sp. | 17 | 50 | | | 1 | 1 | 3 | 1 | 518753 | 6758120 | Stage 3 - South |
| 167 | Eucalypt sp. | 16 | 80 | | | 2 | 1 | 2 | 3 | 518738 | 6758128 | Stage 3 - South |
| 168 | Corymbia sp. | 17 | 55 | | | | 2 | 2 | | 518769 | 6758127 | Stage 3 - South |
| 169 | Eucalypt sp. | 14 | 40 | 2 | 1 | | 1 | 2 | | 518834 | 6758174 | Stage 3 - South |
| 170 | Eucalypt sp. | 15 | 50 | | 1 | | 1 | | | 518845 | 6758184 | Stage 3 - South |
| 171 | Eucalypt sp. | 10 | 40 | | | | 1 | | | 518836 | 6758192 | Stage 3 - South |
| 172 | <i>E. pilularis</i> | 15 | 80 | 1 | 3 | | 1 | | | 518835 | 6758212 | Stage 2 - South |
| 173 | <i>E. pilularis</i> | 16 | 90 | | | | 1 | 3 | | 518832 | 6758219 | Stage 2 - South |
| 174 | Eucalypt sp. | 18 | 50 | | | 1 | 4 | | | 518825 | 6758219 | Stage 2 - South |
| 175 | Eucalypt sp. | 20 | 60 | | | 1 | 4 | | | 518815 | 6758228 | Stage 2 - South |
| 176 | Eucalypt sp. | 21 | 55 | | | | 5 | 1 | | 518811 | 6758230 | Stage 2 - South |
| 177 | Eucalypt sp. | 20 | 65 | | | | 1 | | 1 | 518790 | 6758214 | Stage 2 - South |
| 178 | Stag | 12 | 50 | | | 2 | 2 | | | 518803 | 6758212 | Stage 2 - South |
| 179 | Stag | 15 | 70 | 2 | | 1 | 7 | | | 518777 | 6758169 | Stage 2 - South |
| 180 | Eucalypt sp. | 20 | 65 | | | | 2 | | | 518770 | 6758165 | Stage 2 - South |
| 181 | Eucalypt sp. | 18 | 62 | | | | 2 | 3 | | 518747 | 6758151 | Stage 2 - South |
| 182 | Eucalypt sp. | 17 | 55 | | | 1 | | | | 518735 | 6758144 | Stage 2 - South |
| 183 | Stag | 15 | 70 | | | 1 | | | | 518718 | 6758148 | Stage 2 - South |
| 184 | Eucalypt sp. | 18 | 100 | | | | 2 | 5 | 7 | 518711 | 6758117 | Stage 2 - South |
| 185 | Eucalypt sp. | 12 | 70 | | | 1 | 1 | 5 | | 518689 | 6758104 | Stage 3 - South |
| 186 | Eucalypt sp. | 15 | 70 | | | 1 | 2 | | | 518689 | 6758142 | Stage 2 - South |
| 187 | Eucalypt sp. | 20 | 45 | | | | | 1 | | 518715 | 6758131 | Stage 2 - South |
| 188 | Eucalypt sp. | 25 | 70 | | | | 2 | 3 | | 518713 | 6758164 | Stage 2 - South |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 189 | Eucalypt sp. | 25 | 70 | | | | 1 | 2 | | 518719 | 6758166 | Stage 2 - South |
| 190 | Stag | 15 | 60 | | 1 | | 3 | 4 | | 518719 | 6758180 | Stage 2 - South |
| 191 | Stag | 15 | 60 | | | 1 | | | | 518717 | 6758177 | Stage 2 - South |
| 192 | Stag | 10 | 75 | | | | 4 | 4 | | 518728 | 6758170 | Stage 2 - South |
| 193 | <i>E. pilularis</i> | 25 | 75 | | | | 1 | 2 | | 518728 | 6758159 | Stage 2 - South |
| 194 | Eucalypt sp. | 20 | 80 | | | | 1 | 2 | | 518726 | 6758177 | Stage 2 - South |
| 195 | Eucalypt sp. | 15 | 55 | | | | 1 | 1 | | 518748 | 6758171 | Stage 2 - South |
| 196 | Eucalypt sp. | 15 | 50 | | 1 | | 3 | | | 518750 | 6758177 | Stage 2 - South |
| 197 | Stag | 10 | 55 | | 1 | | 4 | 1 | | 518789 | 6758207 | Stage 2 - South |
| 198 | <i>E. pilularis</i> | 15 | 95 | | | | 4 | | | 518804 | 6758253 | Stage 2 - South |
| 199 | Stag | 10 | 35 | | | | 2 | | | 518811 | 6758305 | Stage 2 - South |
| 200 | Stag | 15 | 45 | | | | 6 | 3 | | 518831 | 6758265 | Stage 2 - South |
| 201 | Stag | 12 | 45 | | | | 4 | | | 518843 | 6758250 | Stage 2 - South |
| 202 | Eucalypt sp. | 10 | 65 | | | | 1 | 2 | 1 | 518845 | 6758238 | Stage 2 - South |
| 203 | Stag | 12 | 40 | | | | 4 | 4 | | 518851 | 6758222 | Stage 2 - South |
| 204 | <i>E. pilularis</i> | 22 | 50 | | | | 4 | | | 518854 | 6758220 | Stage 2 - South |
| 205 | Stag | 12 | 35 | | | | 3 | | | 518784 | 6758298 | Stage 2 - South |
| 206 | Eucalypt sp. | 15 | 60 | | | | 5 | | | 518772 | 6758277 | Stage 2 - South |
| 207 | Stag | 10 | 60 | | | | 8 | 2 | | 518777 | 6758235 | Stage 2 - South |
| 208 | Eucalypt sp. | 20 | 65 | | | | 3 | | | 518776 | 6758216 | Stage 2 - South |
| 209 | <i>E. pilularis</i> | 20 | 60 | | | | 3 | | | 518753 | 6758233 | Stage 2 - South |
| 210 | Eucalypt sp. | 25 | 65 | | | | | | 1 | 518748 | 6758226 | Stage 2 - South |
| 211 | <i>E. pilularis</i> | 20 | 150 | | | | 8 | 7 | 7 | 518744 | 6758219 | Stage 2 - South |
| 212 | Eucalypt sp. | 17 | 120 | | | | 1 | 4 | 3 | 518739 | 6758215 | Stage 2 - South |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 213 | Stag | 17 | 100 | | | 1 | | | | 518756 | 6758208 | Stage 2 - South |
| 214 | Eucalypt sp. | 21 | 90 | | | | | 2 | | 518710 | 6758218 | Stage 2 - South |
| 215 | Stag | 10 | 20 | | | | | 1 | | 518700 | 6758230 | Stage 2 - South |
| 216 | Eucalypt sp. | 12 | 60 | | | | | 2 | | 518695 | 6758228 | Stage 2 - South |
| 217 | <i>E. pilularis</i> | 25 | 95 | | | 1 | 1 | | | 518720 | 6758188 | Stage 2 - South |
| 218 | Eucalypt sp. | 30 | 75 | | 1 | | 4 | | | 518694 | 6758165 | Stage 2 - South |
| 219 | Eucalypt sp. | 12 | 55 | | | 1 | | | | 518667 | 6758170 | Stage 2 - South |
| 220 | Stag | 8 | 45 | | | | 4 | | | 518666 | 6758155 | Stage 2 - South |
| 221 | Eucalypt sp. | 15 | 105 | | | | 3 | 2 | | 518671 | 6758174 | Stage 2 - South |
| 222 | Eucalypt sp. | 8 | 40 | | | 1 | 2 | | | 518748 | 6758469 | Stage 1 |
| 223 | Eucalypt sp. | 9 | 40 | | | | 1 | | | 518716 | 6758426 | Stage 1 |
| 224 | Eucalypt sp. | 17 | 85 | | | | 4 | 2 | | 518724 | 6758447 | Stage 1 |
| 225 | Eucalypt sp. | 9 | 25 | | 1 | | | 1 | | 518700 | 6758473 | Stage 1 |
| 226 | Stag | 20 | 90 | | 1 | 1 | 12 | 4 | 4 | 518718 | 6758486 | Stage 1 |
| 227 | Eucalypt sp. | 12 | 40 | | | | 4 | | | 518705 | 6758488 | Stage 1 |
| 228 | Eucalypt sp. | 10 | 40 | | | | 3 | 1 | | 518715 | 6758448 | Stage 1 |
| 229 | Eucalypt sp. | 17 | 50 | | | | 3 | | | 518729 | 6758477 | Stage 1 |
| 230 | Stag | 9 | 30 | | 1 | | | | | 518726 | 6758484 | Stage 1 |
| 231 | Stag | 8 | 20 | | | | 3 | | | 518728 | 6758474 | Stage 1 |
| 232 | Stag | 8 | 40 | | | | 3 | | | 518734 | 6758478 | Stage 1 |
| 233 | Stag | 10 | 100 | | | 1 | | | 1 | 518459 | 6758413 | Stage 1 |
| 234 | Eucalypt sp. | 12 | 45 | | 1 | | 3 | | | 518659 | 6758550 | Stage 2 - North |
| 235 | Stag | 13 | 50 | | | 1 | 2 | 3 | | 518675 | 6758534 | Stage 2 - North |
| 236 | Stag | 11 | 35 | | | | | 1 | | 518654 | 6758534 | Stage 2 - North |

| Tree ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | | Easting | Northing | Stage |
|---------|---------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|---------|----------|-----------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm | | | |
| 237 | Stag | 10 | 35 | | | | 3 | | | 518677 | 6758535 | Stage 2 - North |
| 238 | Stag | 8 | 45 | 2 | | | 5 | | | 518688 | 6758523 | Stage 2 - North |
| 239 | Stag | 12 | 75 | 1 | | | 7 | 4 | | 518691 | 6758511 | Stage 2 - North |
| 240 | Stag | 15 | 90 | | | | 3 | 4 | 3 | 518680 | 6758500 | Stage 1 |
| 241 | Stag | 28 | 110 | | | 2 | 6 | | | 518658 | 6758483 | Stage 1 |
| 242 | <i>E. pilularis</i> | 20 | 85 | | | | 2 | 1 | | 518639 | 6758471 | Stage 1 |
| 243 | <i>E. pilularis</i> | 18 | 135 | | | 2 | 1 | 2 | | 518587 | 6758477 | Stage 1 |
| 244 | Stag | 15 | 55 | | 2 | | | | | 518610 | 6758515 | Stage 2 - North |
| 245 | <i>E. pilularis</i> | 20 | 100 | | | | 6 | | 3 | 518594 | 6758531 | Stage 2 - North |

Proposed nest box locations

| Transect ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | |
|-------------|----------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm |
| T1 | Stag | 12 | 70 | | 1 | | 5 | 3 | |
| T1 | Stag | 11 | 65 | | | | 3 | 2 | |
| T1 | Angophora | 9 | 40 | | | | | | 1 |
| T1 | <i>E. microcorys</i> | 10 | 65 | 1 | | | 2 | 2 | |
| T1 | Stag | 11 | 60 | | 1 | | 3 | 3 | |
| T1 | Stag | 10 | 40 | | | | 3 | 1 | |
| T1 | Spotted Gum | 22 | 120 | | | | | | 1 |
| T1 | Stag | 8 | 35 | | | | 3 | 1 | |
| T1 | Eucalypt sp. | 13 | 75 | | 1 | | | 1 | 1 |

| Transect ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | |
|-------------|--------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm |
| T1 | Stag | 9 | 110 | | 1 | 2 | | | |
| T1 | Eucalypt sp. | 10 | 70 | | | 1 | | | |
| T1 | E. pilularis | 20 | 110 | | 2 | 1 | 1 | 2 | 1 |
| T1 | Stag | 8 | 40 | | | | 4 | | |
| T2 | E. pilularis | 21 | 1.4 | | 1 | 3 | 7 | 3 | 1 |
| T2 | E. pilularis | 15 | 80 | | | | 1 | | |
| T2 | E. pilularis | 15 | 90 | | 2 | | | 2 | |
| T2 | Corymbia sp. | 14 | 90 | | 2 | | | 2 | 1 |
| T2 | Eucalypt sp. | 13 | 60 | | | | 2 | 1 | |
| T2 | Eucalypt sp. | 12 | 35 | | 1 | | | | |
| T2 | Angophora | 11 | 50 | | | | | 1 | |
| T2 | E. pilularis | 14 | 75 | | | | 2 | 3 | 3 |
| T2 | Eucalypt sp. | 12 | 55 | | 1 | | 3 | | |
| T2 | E. pilularis | 15 | 60 | | 1 | | 2 | 3 | |
| T2 | E. pilularis | - | 140 | | | | 1 | 2 | 1 |
| T2 | E. pilularis | - | 120 | | 1 | | 3 | 1 | |
| T2 | Angophora | - | 90 | | | | 2 | 2 | |
| T2 | Turpentine | - | 90 | 2 | 1 | 1 | | | |
| T2 | Stag | - | 40 | 2 | | | | | |
| T2 | Stag | - | 30 | 1 | | | | | |
| T2 | Red Mahogany | - | 60 | 1 | | | 1 | | |
| T2 | Angophora | - | 60 | | 1 | | | | |
| T2 | Casuarina | - | 30 | 1 | | | | | |
| T2 | Red Mahogany | - | 60 | 1 | 1 | | | | |

| Transect ID | Species (if known) | Estimated Height (m) | Estimated DBH (cm) | Trunk Hollow | | | Limb Hollows | | |
|-------------|--------------------|----------------------|--------------------|--------------|------------|-------------|--------------|------------|-------------|
| | | | | Small <5cm | Med 5-15cm | Large >15cm | Small <5cm | Med 5-15cm | Large >15cm |
| T2 | Red Mahogany | - | 60 | | | | 2 | | |
| T3 | Stag | 10 | 45 | | 1 | | 3 | | |
| T3 | E. pilularis | 22 | 160 | 1 | 1 | | 1 | 4 | 3 |
| T3 | Stag | 8 | 30 | | | | 5 | | |
| T3 | E. pilularis | 15 | 70 | | | | 2 | | |
| T3 | E. pilularis | 15 | 70 | | | | | 1 | 1 |
| T3 | E. pilularis | 20 | 120 | | | | | 2 | 1 |
| T3 | E. propinqua | 25 | 90 | | | | 2 | | 1 |
| T3 | E. propinqua | 17 | 40 | | | | 3 | | |
| T3 | Stag | 15 | 100 | | | 1 | | | |
| T3 | E. propinqua | 16 | 70 | | | | 1 | 1 | |
| T3 | E. propinqua | 14 | 55 | 1 | | | 1 | 2 | |
| T3 | Angophora | 12 | 50 | 1 | | | | | |
| T3 | Angophora | 16 | 60 | 1 | 1 | | | | |
| T3 | Corymbia sp. | 19 | 100 | 1 | | | | 2 | 2 |
| T3 | L. suaveolans | 12 | 60 | 2 | | | | | |

Appendix B – Registers

| Date | Nest Box Number | Nest Box Size (Small, Med, Large) | Location | Easting | Northing | Zone | Tree Species | Other |
|------|-----------------|--------------------------------------|----------|---------|----------|------|--------------|-------|
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Nest box monitoring sheet

[illegible]

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| 1 | J. Sharp | K. Crosby | <i>K. Crosby</i> | S Lawer | <i>S Lawer</i> | 24/11/17 |
| 2 | B Luffman | K. Crosby | <i>K. Crosby</i> | S Lawer | <i>S Lawer</i> | 14/12/17 |

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