Western Botanical

Offset Management Plan for Jelcobine, Lot DP 90037

Prepared for: Doral Mineral Sands Pty Ltd

Report Ref: WB1058

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List of acronyms used in this report:

Acronym	Meaning
AOI	Area of Interest (i.e. Lot DP 90037) which includes the Offset Site
BC	Black-Cockatoo
BC Act	*Biodiversity Conservation Act 2016* (Western Australia)
BBC	Baudin's Black-Cockatoo (*Zanda baudinii*)
CBC	Carnaby's Black-Cockatoo (*Zanda latirostris*)
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPIRD	Department of Primary Industries and Regional Development (Western Australia)
DS	Direct Seeding
DWER	Department of Water and Environmental Regulation (Western Australia)
EP Act	*Environmental Protection Act 1986* (Western Australia)
EPA	Environmental Protection Authority (Western Australia)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Australia)
FRTBC	Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*)
KLPL	Keysbrook Leucoxene Pty Ltd
T	Tubestock

1. Introduction

Keysbrook Leucoxene Pty Ltd (KLPL), a subsidiary of Doral Mineral Sands Pty Ltd, engaged Western Botanical to prepare an Offset Management Plan for portions of Lot 17976, also known as Lot DP 90037, to support the proposed Offset Strategy proposed by KLPL for the Jelcobine Offset. The Jelcobine Offset is required to offset significant residual impacts to Black-Cockatoo foraging and potential nesting and roosting habitat associated with impacts from the Keysbrook Western Extension Mineral Sands Project. The Black-Cockatoo species impacted by the Proposal include:

- Carnaby`s Black-Cockatoo (CBC) *Zanda latirostris* – listed as Endangered under the *BC Act* and *EPBC Act*.
- Forest Red-tailed Black-Cockatoo (FRTBC) *Calyptorhynchus banksii naso* – listed as Vulnerable under the *BC Act* and *EPBC Act.*
- Baudin's Black Cockatoo (BBC) *Zanda baudinii* – listed as Endangered under the *BC Act* and *EPBC Act*

The Proposed Offset Site is located in Jelcobine on the east side of the Darling Scarp, sandwiched between two reserves: Boyagarring Conservation Park to the east, and Youraling State Forest to the west. White-tailed (CBC and/or Baudin's Black-Cockatoo) and FRTBC are abundant in the area (Western Botanical, 2025a).

The Keysbrook Western Extension (i.e. Proposal or Proposed Action) is being assessed by accredited assessment by the Western Australian EPA (as per *EP Act 1986*) and the Commonwealth DCCEEW (as per *EPBC Act 1999*).

2. Background Information

2.1. Ownership, vesting and zoning

The proposed Offset Site is portions of Lot 17976, also known as Lot DP 90037, and is Zoned Rural in the Shire of Brookton, WA. The land is freehold and signed land acquisition agreements are currently in place between KLPL and the landowners subject to regulatory approval of the Proposed Offset Strategy.

2.2. Site description

The proposed Offset Site is located in the Northern Jarrah Forest subregion of the Jarrah Forest bioregion, with the boundary of the Katanning subregion of the Avon Wheatbelt bioregion being approximately 17 km to the east. The total Lot covers approximately 162.3

ha, of which 113.76 ha is proposed to be used to offset impacts to FRTBC and 95.76 ha for CBC.

The Offset Site represents an east-facing slope with relief of approximately 40 metres over a length of 1 km, and slopes estimated at between 2 and 15 degrees (Figure 1).

Soils are shallow sandy lateritic pizolitic sandy gravels, with occasional outcropping ferricrete on hill tops and ridges, likely overlying kaolinitic materials and weathered granite. These surface soils have high infiltration capacity and relatively low erodibility.

The eastern portion of the site represents a narrow minor incised drainage line, potentially impacted by salinity in some areas, which has been revegetated (est. 20 yrs. ago) with a range of native tree species. An approximately 20 ha area west of the drainage line with sandy-gravelly soil has been previously cleared for agriculture, supports pasture species, and is available for revegetation.

Lower slopes and flats adjacent and to the west of the drainage line support remnant *Eucalyptus wandoo* woodland on sandy clay soil with little midstorey (due to grazing) and a good representation of persistent herbaceous species and native grasses to 20 cm high, with few weeds present.

The upper hill slope and hilltops support remnant *Eucalyptus wandoo*, *E. accedens* woodlands with trees in good to excellent condition, with minor inclusion of *Eucalyptus marginata* and *Corymbia calophylla*. The latter two species are not performing well in the current climatic conditions, with the deaths of many trees noted. The understorey is sparse due to prior grazing (last grazed approximately 2016, pers. comm. Mr. Vince Pike) and the maturity of the eucalypt woodland in this landscape.

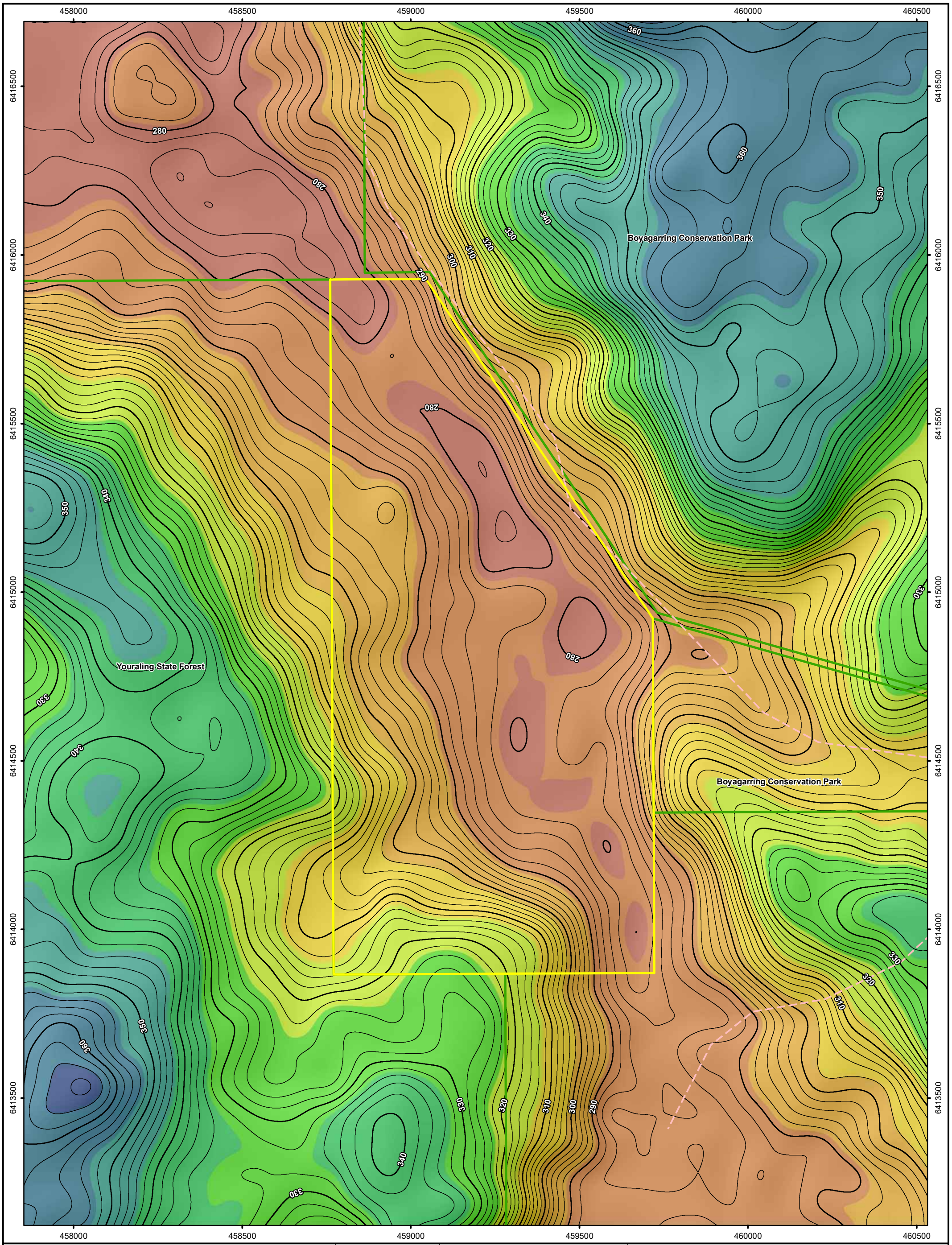
Three small spring-fed freshwater dams are present within the parcel of land being considered for purchase as an offset. Vegetation units for proposed revegetation are given in Figure 2.

2.3. Site History

The entire region, inclusive of the State Forest adjacent, has been logged in the past. The 65 ha of remnant wandoo woodland and mixed woodland within the Offset Site was grazed by sheep as recently as 2016 (Mr. Vince Pike pers. comm.). In 2024, there were 32.95 ha under canola cropping, outside the areas proposed for revegetation, and 1.27 ha fallow.

Figure 1: Topography

Topography: Shuttle Radar Topography Mission (SRTM) - NASA and the Department of Defence's National Imagery and Mapping Agency (NIMA).



Legend

- Survey Area
- Legislated Lands
- Track
- Contours (2m interval)

0 150m

Scale: 1:10,000
MGA94 (Zone 50)

CAD Ref: a3087_F004

Date: Jan 2025 | Rev: A | A3

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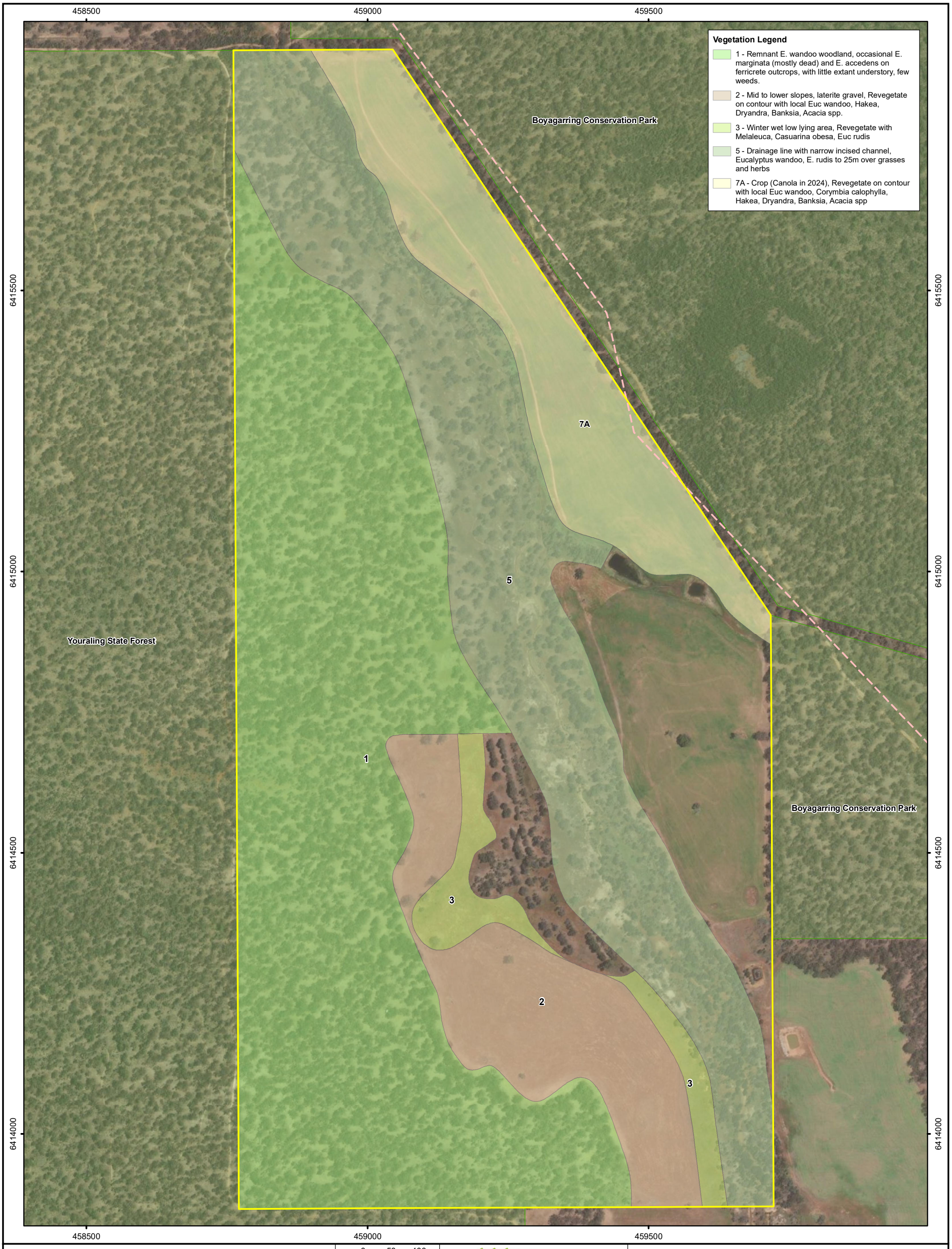
Doral Mineral Sands Pty Ltd

Jelcobine Project

Topography

Figure 2: Proposed Revegetation Plan showing vegetation types

Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Legend
- Survey Area
- Legislated Lands
- Track

0 50 100m
Scale: 1:6,000
MGA94 (Zone 50)

CAD Ref: a3087_F002_01
Date: Aug 2025 | Rev: A | A3

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Jelcobine Project
Revegetation Areas

2.4. Disturbances and threats

Seven weed species have been recorded on site with six of these being considered pasture species (Western Botanical 2025b). One species, *Gomphocarpus fruticosus* (Apocynaceae) (narrow leaf cotton bush), recorded in a moist area down-slope of the lower dam on the cropped portion of the property, is a Declared Pest in Western Australia (DPIRD 2023) and will be actively managed through regular monitoring and herbicide or hand removal.

Evidence of Feral Pig (*Sus scrofa*) and Rabbit (*Oryctolagus cuniculus*) activity exists within the Offset Site (Western Botanical 2025a). These two species can cause degradation to native vegetation and pose a risk to revegetation survival by grazing, ring-barking, trampling, and root exposure by digging. Presently no control methods are in place however as per this plan, effective controls including fencing and ongoing control via 1080 baits, trapping and or shooting will be undertaken to manage these risks

The adjacent Youraling Forest Reserve has a vehicle track west of the western boundary of the Offset Site, with evidence of vehicle (trailbike, and possibly quadbike and 4WD) intrusion onto the proposed Offset Site through gaps in the presently degraded fence. The potential for unauthorised vehicle access into the Offset Site from Youraling Forest Reserve poses a threat to the existing native vegetation and the proposed revegetation program, and shall be controlled by new fencing and signage.

Observed fire damage as a result of historic and indiscriminate paddock burning by a previous land manager was evident in a large old paddock marri in the Offset Site, which would typically be a valuable food source to BCs (Western Botanical 2025a). Although fire is a natural occurrence in Australian ecosystems, inappropriate fire regimes (too hot, wrong time of the year, too frequent) can decrease the seed-set, growth and longevity of plants and may impact the success of revegetation. Fire management of the neighbouring State Forest is managed by DBCA and whilst the risk of bushfire exists, DBCA are aware of the proposed offset program and effective communications regarding fire management to reduce the risk of impact to the offset site shall be maintained.

The increasing heat, aridity and extreme storm events associated with climate change may impact a revegetation program by reducing seed germination and limiting seedling growth. Careful timing of planting and direct seeding should help mitigate these impacts.

2.5. Existing conditions

The Offset Site currently offers good resources for Black-Cockatoos (BC) in the way of roosting and potential nesting trees, plus permanent water in two farm dams. Representative site photos (Appendix 6) demonstrate the structure of the remnant *Eucalyptus wandoo*, *E. accedens* woodlands and the previously pastured lands.

The BC foraging value of the Offset Site is currently limited. The addition of suitable species of plants in selected areas/zones in the Offset Site via a rehabilitation program would greatly improve the foraging value, which will provide a measurable environmental conservation gain against the residual impacts for the Proposed Action.

Understorey plants suitable for BC forage were observed in the adjacent Youraling Forest Reserve and Boyagarring Conservation Park in patches of Proteaceous shrubs such as *Banksia sessilis* (Parrot Bush), *B. squarrosa* (Pingle) and *Hakea undulata* (Wavy-leaved Hakea). Both the Reserve and the Park are close enough to be utilised by BC nesting in the Offset Site.

2.6. Access agreements

Access to the north end and east side of the Offset Site is currently via Pike Road (public road) from the Brookton Highway. Access to the west side and south side is as above, then limited 4WD access along a track in Youraling Forest Reserve (public access) on the west.

3. Revegetation methodology

3.1. Revegetation commitments

3.1.1. Vision

The intention of the revegetation is to establish suitable self-sustaining foraging habitat for CBC and FRTBC that emulates the existing habitat in nearby woodlands.

3.1.2. Objectives

The key objective of the offset project is to undertake a significant restoration program to enhance the existing Black Cockatoo habitat through the protection and revegetation of the site with a resilient and self-sustaining suite of local native plant species suitable as a food resource for CBC and FRTBC. Vegetation that is 'self-sustaining' is healthy enough to reach maturity and able to produce the next generation of plants *in situ*.

There may be additional beneficial outcomes such as prevention of further erosion around the drainage line, and provision of habitat for other native fauna; however, as these are not included in the offset calculator, they are not current objectives.

3.2. Species selection

The species selection is focused on providing foraging habitat for BC within (i) former pasture on a gravelly hill slope with an easterly aspect and (ii) remnant Wandoo and Powderbark Wandoo woodland vegetation that has been grazed and which is lacking low to

medium understorey. The species selection for the drainage line within the property shall include salt-tolerant species to be utilised.

A strong emphasis has been placed on utilising local plant species that could provide foraging habitat for BC within a timeframe of 8-10 years.

The species list has been prepared using a broad range of local species plus additional species that are known BC foraging species, produce relatively large amounts of large seeds but may not be local and will likely perform well on the soil types present and within the local climatic zone. Existing species such as *Eucalyptus marginata* subsp. *thalassica* and *Corymbia calophylla* are on the eastern fringe of their environmental tolerance and are only included in minor proportions. The species selection criteria is open to some substitutions following similar principles if the availability of some species is an issue.

It may be difficult to establish a diverse range of BC foraging species in areas impacted by salinity (*i.e.* parts of the drainage line). *Hakea preissii* is the only known forage species with some degree of salt tolerance.

Banksia and *Hakea* species which have large seeds that are relatively difficult to obtain, available in relatively modest quantities and therefore costly, will be planted as tubestock. Similarly, *Allocasuarina*, *Casuarina*, *Corymbia* and *Eucalyptus* species will be in relatively low densities to provide some taller trees for vegetation structure.

Acacia and *Xanthorrhoea* species have been included to provide (i) quick foliar cover and mid-storey structure and nitrogen-fixing by the legumes; and (ii) longer-term forage habitat in the case of the local *Xanthorrhoea* species. *Xanthorrhoea* sp. Jelcobine (GCLD 2416) is potentially a new species in the *Xanthorrhoea preissii* complex, the taxonomy of which is being assessed by Western Botanical and the Western Australian Herbarium.

Botanical names in this document follow those used by the Western Australian Herbarium (1998–).

3.3. Site exclusion fencing

Fencing shall be installed in order to provide security, and deterrence to nuisance animals such as kangaroos and feral pigs. Fence design is proposed to be a minimum 1.2m ringlock and a single base strand of barbed wire. Lockable gates should be installed in the fence to permit only authorised access for planting, weed control and monitoring. Signage will be erected to deter unauthorised vehicle access, by notification of private property and/or pest control.

3.4. Fertiliser application

Fertiliser application will be minimal to avoid detrimental impacts to Proteaceae (i.e. *Banksia*, *Grevillea*, *Hakea,* and *Persoonia*) as these plants are highly susceptible to phosphate toxicity. Recommendations for a low-phosphate fertiliser application should be sought from the revegetation contractor.

3.5. Timing of revegetation operations

Direct seeding and seedling planting programs shall be implemented when soil moisture is reliable and temperatures are warmer, meaning a mid to late Autumn planting is preferable. This hinges on the occurrence and quantity of rainfall and should be assessed at the time.

Successful direct seeding in former pasture is best achieved when seeds are spread in early Autumn, so that germination occurs as temperatures drop and autumn rainfall occurs.

If seeding is deferred until the winter months, pasture insect pests such as Cut Worm and arachnid pests Red Legged Earth Mite (RLEM) can cause total failure of direct seeding operations as the pests ravage the germinating seedlings at the cotyledon stage.

If direct seeding is undertaken in the cold winter months, effective misting of the direct seeded areas with an appropriate insecticide in areas of old pasture will greatly improve the direct seeding outcomes.

3.6. Site preparation

The project area is divided into five revegetation sub-units (Table 1) for revegetation planning and implementation purposes, as presented in Figure 2. Any access tracks and firebreaks will need to be constructed before other activities.

Table 1. Sub-units of the proposed revegetation plan

Revegetation Category		Approximate area (ha)
Previously pastured land –		
Zone 2 is 14ha, 3 is 4.76ha and northern part of 7 (7A) is 18.26ha		**37.02**
Pastured Paddock - Low in Landscape	30.86	
Pastured Paddock - High in Landscape	6.16	

Remnant *Eucalyptus wandoo*, *E. accedens* woodland – Zone 1		**65**
Remnant Wandoo Woodland, Low in Landscape	38	
Remnant Wandoo Woodland, High in Landscape	27	
Drainage line with existing revegetation – Zone 5		**30**
Total Approximate Area (ha)		**132.02**

3.6.1. Previously pastured land (Zones 2, 3 and 7A)

Approximately 37.02 ha (Zone 2, 3 and the northern portion of 7, designated as 7A) of previously pastured land will be revegetated using tubestock and direct seeding with a range of local species focusing on *Eucalyptus wandoo* as roosting habitat; *Hakea*, *Banksia* (formerly *Dryandra*), and *Banksia* sens. str. species providing feeding habitat, and local understorey native legumes (e.g. *Acacia*, *Gastrolobium*, *Gompholobium*, *Kennedia*, and *Templetonia*) for nitrogen fixation and further feeding habitat.

Appendix 1 presents a core list of species and quantities suggested for rehabilitation in previously pastured land (Zone 2, 3 and 7A). This can be added to if a more diverse understorey is deemed warranted.

The site preparation program shall be implemented during the Summer prior to a planting program. The site preparation program should include:

- Detailed planning and mapping of planting areas and a review of site treatments required.
- Species list prepared with reference to soil and site conditions.
- Herbicide application (glyphosate or similar recommended) to existing pasture prior to seeding and planting of tubestock to minimise competition.
- Ripping at 1.5 to 2 m spacings, 20 to 30 cm deep on the contour using a grader or front-end loader with a tool bar.
    - It is important that the ripped contour lines are surveyed and rip lines are discontinuous to minimise the chance of erosion on the moderate to steeper slopes.
    - Pre-planting weed control is most effective before ripping. Ideally, weed control should be undertaken a year before to reduce weed seed soil bank. Ground

preparation should be implemented in April/May after the second round of weed control.

- Tubestock planting to be done by hand using Pottiputki tree planters in riplines.
- Direct seeding to be implemented by hand or utilising a tractor-drawn tree planter in ground areas that have been scarified.

3.6.2. Remnant *Eucalyptus wandoo, E. accedens* woodland (Zone 1)

Remnant *Eucalyptus wandoo*, *E. accedens* woodland has been historically grazed and is devoid of mid-storey species, encompasses approximately 65 ha in the Offset Site, and can be augmented with understorey species to provide improved foraging habitat for BC.

This can be achieved with a combination of:

- Light scarification of the surface to help prepare a seedbed for direct-seeded species. This can be achieved using a small tractor with a light scarifier bar to scratch the surface to a depth of no more than 5 cm, avoiding damage to existing understorey species.
- Infill planting of tubestock following direct seeding in this area.
- Tubestock planting of Proteaceae amongst the remnant woodland trees by operators using planting tubes, without any significant site disturbance.
- Direct seeding of legumes and some Proteaceae (as seed availability allows) throughout the remnant woodland.

As the soil surface here is relatively non-compacted, and existing near-surface tree roots are intact, no ripping of the soil surface is recommended.

Appendix 2 presents a core list of species and quantities to be included into the rehabilitation in remnant *Eucalyptus wandoo* and *E. accedens* woodland.

3.6.3. Drainage line with existing vegetation (Zone 5)

The drainage line (Zone 5) has been previously revegetated, appears to include some areas of observed salinity impacts, and supports a good range of *Eucalyptus* species and *Casuarina pauper*. It is proposed that a mid-storey of *Hakea preissii* be hand-planted throughout to augment the potential food source for Black Cockatoo. Tubestock planting of *Hakea preissii* is therefore planned at a rate of 250 stems per hectare. The total area of drainage line in the Offset Strategy is 30 ha, which would require at least 7,500 tubestock stems of *Hakea preissii* for complete coverage.

The site should not require any ripping or herbicide treatment. Tubestock can be hand-planted between existing trees.

3.7. Seed provenance

The availability of seeds of suitable provenances and suitable species for propagation will be crucial to the success of the rehabilitation of the Offset Site. Therefore, a locally focused seed collection program should be implemented in 2025 to collect sufficient seed for nursery propagation and direct seeding.

Some preferred species from suitable provenances may be available commercially.

Seed collection, processing and storage will be guided by the RIAWA (2025) Seed Standards.

3.8. Quantities for Tubestock Planting and Direct Seeding

Totals of 170,686 seedling tubestock (Appendix 3) and 27.207 kg of native seeds for direct seeding (Appendix 4) are proposed.

Species selection with quantities noted are presented in Appendix 3 for Tubestock (T) Planting, and Appendix 4 for Direct Seeding (DS). Seedlings will either be propagated from seed, cuttings or tissue culture from the use of provenance material by a trusted, accredited nursery.

Note that the quantity of *Xanthorrhoea* at 200 stems per hectare is aspirational only and is to be introduced via Direct Seeding. The availability of local seed will determine the quantity to be used.

3.9. Schedule of Works

An experienced revegetation contractor shall be contracted to prepare the site and undertake the planting of tubestock. Chatfields Tree Nursery, Tammin, experienced in numerous successful native revegetation projects, has been consulted in the development of this plan.

Planting and direct seeding should occur in the Autumn following site preparation.

A schedule of works is proposed in Appendix 5.

3.10. Completion criteria information as per guideline

Completion criteria are the measures against which the implementation objectives can be assessed. The criteria aim to ensure rehabilitated areas will display self-sustaining characteristics of surrounding areas and provide Regulators and other key stakeholders confidence that, to the maximum possible extent, they can be managed in the long term

according to the intended land use, using normal management practices without the input of additional resources. Vegetation that is 'self-sustaining' is healthy enough to reach maturity and able to produce the next generation of plants *in situ*.

Management Approach

The assessment of rehabilitation against the completion criteria is applied throughout the various stages of the rehabilitation operations (Table 2).

Completion criteria are subject to review and revision on a regular basis to allow for learnings from trials, monitoring, improved knowledge, industry practices and changes in standards.

Table 2: Completion criteria

CLOSURE OUTCOME		COMPLETION CRITERIA	MEASUREMENT TOOL	CORRECTIVE ACTIONS	TIMING
1	Exclusion of grazing animals (rabbits, kangaroos, etc) to secure revegetation success	Erection of suitable perimeter fence to be installed and provide an effective barrier to prevent or reduce impacts to revegetation area	Observed installation and maintenance of perimeter fence visual inspection for presence of kangaroos and rabbits	Maintain fence Remove or control kangaroos or rabbits	Spring 2026
2	Overstorey vegetation is self-sustaining and suitable for future habitat, roosting or foraging use by Carnaby's Black Cockatoo and Forest Red-tailed Black Cockatoo.	Within 5 years (and maintained for 10, 15 and 20 years) a total abundance of planted overstorey woodland species is over 1000 stems/ha.	Visual inspection (Tree count) to assess the survival, flowering and fruiting events which is indicative of self-sustaining.	Additional planting of overstorey woodland species using tube stock following yearly review of number of surviving overstorey species	Spring 2031, 2036, 2041, 2046

	CLOSURE OUTCOME	COMPLETION CRITERIA	MEASUREMENT TOOL	CORRECTIVE ACTIONS	TIMING
3	Understorey structure is similar to the adjacent Youraling Forest Reserve vegetation communities	Within 5 years (and maintained for 10, 15 and 20 years): Species richness is at least 50% of revegetation species list. Species density is at least 2,000 stems/ha.	Quadrats	Additional planting of tubestock and application of direct seeding to be undertaken following yearly review of species richness and diversity.	2031, 2036, 2041, 2046
4	Plants used in rehabilitation to be of local provenance.	The mix of species is comprised of species recruited from direct seeding and species introduced as tube stock grown from seed, cuttings or whole plants salvaged from within 20km of the revegetation site.	Audit of rehabilitation records for sources of plant materials used in rehabilitation.	Purchase or collection of additional local provenance seed of target species.	2026

CLOSURE OUTCOME		COMPLETION CRITERIA	MEASUREMENT TOOL	CORRECTIVE ACTIONS	TIMING
5	Vegetation resilient to weeds - Weeds not out-competing revegetation	Within 5 years (and maintained for 10, 15 and 20 years): Weed cover is reduced to under 30% (currently 80-100% in understorey). Invasive weed coverage is sustained without weed control between 4th and 5th year's respective seasons. No Declared weeds are present within the revegetation area.	Quadrats	Weed control methods such as chemical application will be modified as required to achieve the best practice solution. The use of targeted spray applications and adaptive techniques such as weed wipers or rope wick technology will be implemented where required to selectively treat weeds	2031,2036, 2041, 2046
6	Dieback	No dieback is present within the revegetation area at 5 years post-establishment and maintained to be dieback free at years 10, 15 and 20.	Dieback survey	Exclusion and signage. Possible phosphite treatment	2031, 2036, 2041, 2046

CLOSURE OUTCOME		COMPLETION CRITERIA	MEASUREMENT TOOL	CORRECTIVE ACTIONS	TIMING
7	Black-Cockatoo Utilisation	Black Cockatoo are or have been present in the revegetation area and are or have been using the revegetation area for nesting/roosting/foraging	Fauna survey	Infill planting where required	2031, 2036, 2041, 2046

4. Revegetation monitoring plan

4.1. Monitoring of Vegetation

Monitoring of the establishment of vegetation in each revegetation zone is recommended on an annual basis from years 1 to 5, and thereafter every five years at year 10, 15 and 20 to assess the survival, flowering and fruiting events, which is indicative of vegetation that is 'self-sustaining'.

Monitoring of vegetation should include the recording of species richness (i.e. number of species present), relative abundance of species either by counts (suitable for trees and large shrubs) or percentage cover (suitable for small shrubs, grasses and understorey plants), and vegetation condition. Vegetation condition should be assessed using the Keighery scale (1994) as specified in DWER (2018).

Statistical assessment of the progress of the revegetation should include comparisons of data from at least ten representative quadrats, three to five from each of the revegetation units in the Offset Site with that of three to five quadrats in the neighbouring woodlands of Youraling State Forest and/or Boyagarring Nature Reserve (known as "Control").

Data collected from each quadrat will typically include species richness, vegetation condition, percentage foliar cover or density of trees and large shrubs using stems per hectare, as specified in DWER (2018). A photo monitoring point will be set up at each quadrat (as recommended by DWER 2018) to allow comparison amongst revegetation zones, treatments and controls. Monitoring will include recording a list of species for each site (vegetation unit or revegetation zone) including weeds.

Descriptive statistics (i.e. graphs) will be used to demonstrate the differences, if any, amongst data from different sites, or across seasons.

4.2. Black-Cockatoo monitoring

A targeted BC Habitat survey was undertaken in May 2025 (refer Appendix 7) and gave evidence for more than 90 potentially suitable hollows amongst 48 trees inspected within revegetation sections 1, 2, 3, 4 and 5. A targeted BC habitat survey undertaken in November 2025 assessed 31 trees within revegetation sections 1 and 5, and extrapolated to give an estimate of 204 trees, each with one or more potentially suitable hollows, in revegetation section 1 (Western Botanical 2025a).

Since the purpose of the offset is to provide habitat for BCs, monitoring revegetation for BC presence and utilisation is recommended on an annual basis. It is recommended that the

Offset Site be monitored from year 3, and at years 5, 10, 15 and 20 when flowering and fruiting of many plant species in the revegetation program is likely to commence.

BC monitoring should aim to identify:

- if BCs are abundant in the area;
- if BCs are using the revegetated areas in the Offset Site as a food source;
- which revegetated areas are being used by BCs;
- which plants are utilised as food sources by BCs; and
- if BCs are nesting and/or roosting in trees in the Offset Site.

5. Maintenance and contingency measures

5.1. Post-planting weed control

Spot-spraying or hand weeding may be used when monitoring indicates that weeds are impacting plant establishment. However, given the pasture species present, this is not considered likely to be an issue.

5.2. Remedial planting and seeding

Remedial planting and seeding will be guided by revegetation monitoring. If BC food-source species are found not to persist, the reason for poor performance should be investigated and either;

(i) the species be replanted following addressing the cause for poor performance (*e.g.* grazing by rabbits and kangaroos); or
(ii) the species be replaced with a species that has environmental tolerances more suited to the site conditions.

5.3. Inspection and maintenance of fencing

Fences will be inspected at each visit during revegetation activities and monitoring. Repairs will be implemented as soon as possible after damage is recorded. The proposed scope of works includes fence maintenance in the five years post-revegetation to cover potential tree fall damage or vandalism and at 5-year increments (years 10, 15 and 20). Access tracks or fire breaks may need maintenance to facilitate fence inspection and maintenance.

5.4. Pest control

Post-planting pest control will be implemented when monitoring indicates that damage is occurring to plants at an unacceptable level. The proposed scope of works includes pest control measures to cover potential outbreaks of biological agents of damage, such as rabbits, pigs or mites.

6. References

DPIRD (2023) Narrow leaf cotton bush: declared pest. Available at https://www.agric.wa.gov.au/declared-plants/narrow-leaf-cotton-bush-declared-pest (Accessed 4/6/2025)

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7. List of Participants

Staff Member	Field Surveys	Specimen Identification	Data Analysis	Report Preparation
Linda Dalgliesh B.Sc. Hons 1 (Zoology) Flora Taking (Biological Assessment) License No. – FB62000613	**1**	**1**	**1**	**1**
Geoff Cockerton B.Sc. (Biology) Flora Taking (Biological Assessment) License No. – FB62000046	**1**	**1**	**1**	**1**

Appendix 1: Core list of species and quantities suggested for rehabilitation in previously pastured land

Core species suggested for Previously Pastured Land				Quantities per Pastured Paddock – tubestock stems plus direct seed grams per hectare		Total required – tubestock stems plus grams of seed
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Pastured Paddock – Low in Landscape** **Area 30.86 ha**	**Pastured Paddock – High in Landscape** **Area 6.16 ha**	
Acacia celastrifolia	Glowing Wattle	2.5	Feeding	200 stems plus 100 g	200 stems plus 100 g	7,404 stems plus 3,702 grams
Acacia urophylla	Veined Wattle	2.5	Feeding	200 stems plus 50 g	200 stems plus 50 g	7,404 stems plus 1,851 grams
Allocasuarina humilis	Dwarf Sheoak	2	Feeding	200 stems	200 stems	7,404 stems
Banksia grandis	Bull Banksia	8	Feeding	50 stems	50 stems	1,851 stems
Banksia nobilis subsp. *nobilis*	Golden Dryandra	2.5	Feeding	-	200 stems	1,232 stems
Banksia sessilis var. *sessilis*	Parrot Bush	3	Feeding	-	400 stems	2,464 stems
Banksia squarrosa subsp. *squarrosa*	Pingle	2.5	Feeding	-	400 stems	2,464 stems
Banksia undata	Urchin Dryandra	1.5	Feeding	-	200 stems	1,232 stems
Casuarina huegeliana	Rock Sheoak	10	Feeding	-	50 stems	308 stems
Corymbia calophylla	Marri	20	Roosting, Feeding	50 stems	-	1,543 stems

Core species suggested for Previously Pastured Land				Quantities per Pastured Paddock – tubestock stems plus direct seed grams per hectare		Total required – tubestock stems plus grams of seed
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Pastured Paddock – Low in Landscape** **Area 30.86 ha**	**Pastured Paddock – High in Landscape** **Area 6.16 ha**	
Eucalyptus accedens	Powderbark Wandoo	20	Roosting	-	50 stems	308 stems
Eucalyptus patens	Blackbutt	20	Roosting, Feeding	50 stems	-	1,543 stems
Eucalyptus wandoo	Wandoo	20	Roosting	100 stems	100 stems	3,702 stems
Hakea laurina	Pincushion Hakea	2 - 6	Feeding	200 stems	200 stems	7,404 stems
Hakea lissocarpha	Honey Bush	0.4 - 3	Feeding	100 stems	100 stems	3,702 stems
Hakea multilineata	Grass Leaf Hakea	1.5 - 6	Feeding	-	200 stems	1,232 stems
Hakea petiolaris subsp. *trichophylla*	Sea Urchin Hakea	3 - 9	Feeding	200 stems	200 stems	7,404 stems
Hakea prostrata	Harsh Hakea	1 - 3	Feeding	100 stems	100 stems	3,702 stems
Hakea undulata	Wavy-leafed Hakea	1 - 2	Feeding	200 stems	200 stems	7,404 stems
Kennedia coccinea subsp. *coccinea*	Running postman	Twining or climbing	Feeding	75 g	75 g	2,777 grams
Kennedia prostrata	Scarlet Runner	Prostrate or twining	Feeding	75 g	75 g	2,777 grams

Core species suggested for Previously Pastured Land				Quantities per Pastured Paddock – tubestock stems plus direct seed grams per hectare		Total required – tubestock stems plus grams of seed
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Pastured Paddock – Low in Landscape** **Area 30.86 ha**	**Pastured Paddock – High in Landscape** **Area 6.16 ha**	
Xanthorrhoea sp. Jelcobine (GCLD 2416)	Jelcobine Grasstree	2	Feeding	(Aspirational 200 stems from DS) 25 g	(Aspirational 200 stems from DS) 25 g	(Aspirational 7,404 stems from DS) 925 grams

Appendix 2: Core list of species and quantities suggested for rehabilitation in remnant *Eucalyptus wandoo* and *E. accedens* woodland

Core species suggested for remnant *Eucalyptus wandoo* and *E. accedens* woodland				Quantities for Remnant Woodland – tubestock stems per hectare plus direct seed grams per ha		Total required – tubestock stems plus grams of seed
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Remnant Woodland – Low in Landscape** **Area 38 ha**	**Remnant Woodland – High in Landscape** **Area 27 ha**	
Acacia celastrifolia	Glowing Wattle	2.5	Feeding	200 stems plus 100g	-	7,600 stems plus 3,800 g
Allocasuarina humilis	Dwarf Sheoak	2	Feeding	200 stems	-	7,600 stems
Banksia grandis	Bull Banksia	8	Feeding	100 stems	25 stems	4,475 stems
Banksia sessilis var. *sessilis*	Parrot Bush	3	Feeding	-	100 stems	2,700 stems
Banksia undata	Urchin Dryandra	1.5	Feeding	-	50 stems	1,350 stems
Corymbia calophylla	Marri	20	Roosting, Feeding	50 stems	-	1,900 stems
Hakea laurina	Pincushion Hakea	2 - 6	Feeding	200 stems	50 stems	8,140 stems
Hakea lissocarpha	Honey Bush	0.4 - 3	Feeding	100 stems	100 stems	6,500 stems
Hakea multilineata	Grass Leaf Hakea	1.5 - 6	Feeding	200 stems	50 stems	8,950 stems
Hakea petiolaris subsp. *trichophylla*	Sea Urchin Hakea	3 - 9	Feeding	200 stems	50 stems	8,950 stems
Hakea prostrata	Harsh Hakea	1 - 3	Feeding	100 stems	50 stems	5,150 stems

Core species suggested for remnant *Eucalyptus wandoo* and *E. accedens* woodland				Quantities for Remnant Woodland – tubestock stems per hectare plus direct seed grams per ha		Total required – tubestock stems plus grams of seed
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Remnant Woodland – Low in Landscape** **Area 38 ha**	**Remnant Woodland – High in Landscape** **Area 27 ha**	
Hakea undulata	Wavy-leafed Hakea	1 - 2	Feeding	200 stems	50 stems	8,950 stems
Kennedia coccinea subsp. *coccinea*	Running postman	Twining or climbing	Feeding	75 g	75 g	4,875 g
Kennedia prostrata	Scarlet Runner	Twining or climbing	Feeding	75 g	75 g	4,875 g
Xanthorrhoea sp. Jelcobine (GCLD 2416)	Jelcobine Grasstree	2	Feeding	(Aspirational 200 stems from DS) 25 g	(Aspirational 200 stems from DS) 25 g	(Aspirational 13,000 stems from DS) 1,625 g

Appendix 3: Species recommendations with quantities for Tubestock planting

Species Recommendations for Tubestock				Tubestock Recommended (stems per ha)					
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Pastured Paddock - Low in Landscape; Area 30.86 ha**	**Pastured Paddock - High in Landscape; Area 6.16 ha**	**Remnant Woodland, Low in Landscape; Area 38 ha**	**Remnant Woodland, High in Landscape; Area 27 ha**	**Drainage Line; Area 30 ha**	
				30.86	**6.16**	**38**	**27**	**30**	**Total Qty Tubestock Required**
Acacia celastrifolia	Glowing Wattle	2.5	Feeding	200	200	200	-	-	15,004
Acacia urophylla		2.5	Feeding	200	200	-	-	-	7,404
Allocasuarina humilis	Dwarf Sheoak	2	Feeding	200	200	200	-	-	15,004
Banksia grandis	Bull Banksia	8	Feeding	50	50	100	25		6,326
Banksia nobilis subsp. *nobilis*	Golden Dryandra	2.5	Feeding	-	200	-	-	-	1,232
Banksia sessilis var. *sessilis*	Parrot Bush	3	Feeding	-	400	-	100	-	5,164
Banksia squarrosa subsp. *squarrosa*	Pingle	2.5	Feeding	-	400	-	-	-	2,464
Banksia undata	Urchin Dryandra	1.5	Feeding	-	200	-	50	-	2,582

Species Recommendations for Tubestock				Tubestock Recommended (stems per ha)					
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Pastured Paddock - Low in Landscape; Area 30.86 ha**	**Pastured Paddock - High in Landscape; Area 6.16 ha**	**Remnant Woodland, Low in Landscape; Area 38 ha**	**Remnant Woodland, High in Landscape; Area 27 ha**	**Drainage Line; Area 30 ha**	
				30.86	**6.16**	**38**	**27**	**30**	**Total Qty Tubestock Required**
Casuarina huegeliana	Rock Sheoak	10	Feeding	-	50	-	-	-	308
Corymbia calophylla	Marri	20	Roosting, Feeding	50	-	50	-	-	3,443
Eucalyptus accedens	Powderbark Wandoo	20	Roosting	-	50	-	-	-	308
Eucalyptus patens	Blackbutt	20	Roosting, Feeding	50	-	-	-	-	1,543
Eucalyptus wandoo	Wandoo	20	Roosting	100	100	-	-	-	3,702
Hakea laurina	Pincushion Hakea	2 - 6	Feeding	200	200	200	50	-	16,354
Hakea lissocarpha	Honey Bush	0.4 - 3	Feeding	100	100	100	100	-	10,202
Hakea multilineata	Grass Leaf Hakea	1.5 - 6	Feeding	-	200	200	50	-	10,182

Species Recommendations for Tubestock				Tubestock Recommended (stems per ha)					
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Pastured Paddock - Low in Landscape; Area 30.86 ha**	**Pastured Paddock - High in Landscape; Area 6.16 ha**	**Remnant Woodland, Low in Landscape; Area 38 ha**	**Remnant Woodland, High in Landscape; Area 27 ha**	**Drainage Line; Area 30 ha**	
				30.86	**6.16**	**38**	**27**	**30**	**Total Qty Tubestock Required**
Hakea petiolaris subsp. *trichophylla*	Sea Urchin Hakea	3 - 9	Feeding	200	200	200	50	-	16,354
Hakea preissii	Needle Tree	2 - 6	Feeding	-	-	-	-	250	7,500
Hakea prostrata	Harsh Hakea	1 - 3	Feeding	100	100	100	50	-	8,852
Hakea undulata	Wavy-leafed Hakea	1 - 2	Feeding	200	200	200	50	-	16,354
Xanthorrhoea sp. Jelcobine (GCLD 2416)	Jelcobine Grasstree	2	Feeding	200	200	200	200		20,404
Totals per Area				**1,850**	**3,250**	**1,750**	**725**	**250**	**170,686**

Appendix 4: Species recommendations with quantities for Direct Seeding

Species Recommendations for Direct Seeding					Direct Seeding Quantity Seed Per Rehabilitation Unit (grams)					
Species	**Common Name**	**Height (m)**	**Habitat Provided**	**Qty per ha (g)**	**Pastured Paddock, Low in Landscape; Area 30.86 ha**	**Pastured Paddock, High in Landscape; Area 6.16 ha**	**Remnant Woodland, Low in Landscape; Area 38 ha**	**Remnant Woodland, High in Landscape; Area 27 ha**	**Drainage Line; Area Area 30 ha**	**Total Qty Required (g)**
Acacia celastrifolia	Glowing Wattle	2.5	Feeding	100	3,086	616	3,800	-	-	**7,502**
Acacia urophylla		2.5	Feeding	50	1,543	308	-	-	-	**1,851**
Kennedia coccinea subsp. *coccinea*	Running Postman	Twining or climbing	Feeding	75	2,315	462	2,850	2,025	-	**7,652**
Kennedia prostrata	Scarlet Runner	Twining or climbing	Feeding	75	2,315	462	2,850	2,025	-	**7,652**
Xanthorrhoea sp. Jelcobine (GCLD 2416)	Jelcobine Grasstree	2	Feeding	25	772	154	950	675	-	**2,551**
TOTAL SEED REQUIRED (g)					**4,095**	**2,002**	**10,450**	**4,725**	**-**	**27,207**

Appendix 5: A schedule of works for revegetation and monitoring

Activity	Timing	Responsibility	Notes	Resources required	Budget
Native seed collection					
Field collection of native seed	2025	Revegetation consultant		Collection equipment	
Processing and storage of seed	2025	Revegetation consultant		Processing equipment	
Cutting material collection	2025	Revegetation consultant		Collection equipment	
Cutting material preparation for nursery propagation	2025	Revegetation consultant		Nursery system or external subcontractor	
Seed preparation for nursery propagation	2025	Revegetation consultant		Nursery system or external subcontractor	
Site preparation					
Construction/maintenance of access tracks and firebreaks	Winter 2025	Grader operator	To facilitate access to various areas for machinery	Grader or similar	
Installation of fencing and gates	Winter 2025	Fencing contractor	To limit unauthorised vehicle access from Youraling State Forest Exclusion of grazing animals (kangaroos, rabbits).	Fencing materials Gates	
Installation of signage	Winter 2025	KLPL	To notify the public of private property boundary	Signage	
Weed control - Autumn	2026	Revegetation consultant		Herbicides, spray equipment	
Weed control - Spring	2026	Revegetation consultant		Herbicides, spray equipment	

Activity	Timing	Responsibility	Notes	Resources required	Budget
Weed control - Autumn	2027	Revegetation consultant		Herbicides, spray equipment	
Site ripping	2026	Revegetation consultant		Machinery	
Rabbit control	2025	Pest management contractor		Baits/traps	
Rabbit control	2026	Pest management contractor		Baits/traps	
Pig control	2026	Pest management contractor			
Pig control	2027	Pest management contractor			
Vegetation Establishment					
Tubestock planting	May-June 2026	Revegetation consultant	Optimal time in the South West is May-June (DWER 2018)	Tubestock	
Direct seeding	April-June 2026	Revegetation consultant	Optimal time in the South West is April-June (DWER 2018)	Seed	
Maintenance and contingency					
Weed control	Summer 2025	Revegetation consultant		Herbicides, spray equipment	
Weed control	Autumn 2026	Revegetation consultant		Herbicides, spray equipment	
Weed control	Summer 2026	Revegetation consultant		Herbicides, spray equipment	
Weed control	Autumn 2027	Revegetation consultant		Herbicides, spray equipment	
Remedial revegetation	Autumn 2028	Revegetation consultant	Seed/tubestock to be sourced 1 year prior	Seed and/or tubestock	
Remedial revegetation	Autumn 2030	Revegetation consultant	Seed/tubestock to be sourced 1 year prior	Seed and/or tubestock	
Fencing inspection and repair	Winter 2026	Fencing contractor		Fencing materials	
Fencing inspection and repair	Winter 2028	Fencing contractor		Fencing materials	
Revegetation monitoring					
Quadrat set up	Spring 2026	Revegetation consultant		Quadrat markers	
Quadrat monitoring	Spring 2026	Revegetation consultant		Monitoring equipment	
Quadrat monitoring	Spring 2027	Revegetation consultant	To inform need for	Monitoring equipment	

Activity	Timing	Responsibility	Notes	Resources required	Budget
			remedial revegetation		
Quadrat monitoring	Spring 2028	Revegetation consultant		Monitoring equipment	
Quadrat monitoring	Spring 2029	Revegetation consultant	To inform need for remedial revegetation	Monitoring equipment	
Quadrat monitoring	Spring 2030	Revegetation consultant		Monitoring equipment	
Quadrat monitoring	Spring 2031	Revegetation consultant		Monitoring equipment	
Fauna monitoring					
Black-Cockatoo surveys	Spring Year 3 (2029)	Fauna consultant	3 years after revegetation commenced		
Black-Cockatoo surveys	Spring Year 4 (2030)	Fauna consultant			
Black-Cockatoo surveys	Spring Year 5 (2031)	Fauna consultant			
Black-Cockatoo surveys	Spring Year 6 (2032)	Fauna consultant			
Black-Cockatoo surveys	Spring Year 7 (2033)	Fauna consultant			
Dieback survey					
Dieback monitoring	2031	Dieback Practitioner		Phosphite treatments	

Appendix 6. Representative photos

Plate 1: Pastured Paddock, High in Landscape. Looking downhill and east across drainage line toward Boyagarring Nature Reserve. (Photo: Western Botanical)

Plate 2: Pastured Paddock, High in Landscape. Looking north-north-east and downhill to drainage line. (Photo: Western Botanical)

Plate 3: Pastured Paddock, Low in Landscape. Looking north-west from drainage line. (Photo: C. Bovell)

Plate 4: Pastured Paddock, Low in Landscape. Looking west upslope from drainage line. (Photo: C. Bovell)

Plate 5: Remnant Woodland, High in Landscape. Evidence of historic logging. (Photo: Western Botanical)

Plate 6: Remnant Woodland, High in Landscape; sparse *Eucalyptus wandoo* and *E. accedens* with occasional *E. marginata* subsp. *thalassica* over minimal understorey on lateritic gravels and outcropping (Photo: Western Botanical)

Plate 7: Remnant Woodland, Low in Landscape (Photo: Western Botanical)

Plate 8: Remnant Woodland, Low in Landscape, on west side and near drainage line (Photo: Western Botanical)

Plate 9: Drainage Line, western side, looking south (Photo: Western Botanical)

Plate 10: Drainage Line, south side looking north-east, with non-native tree plantings. (Photo: C. Bovell)

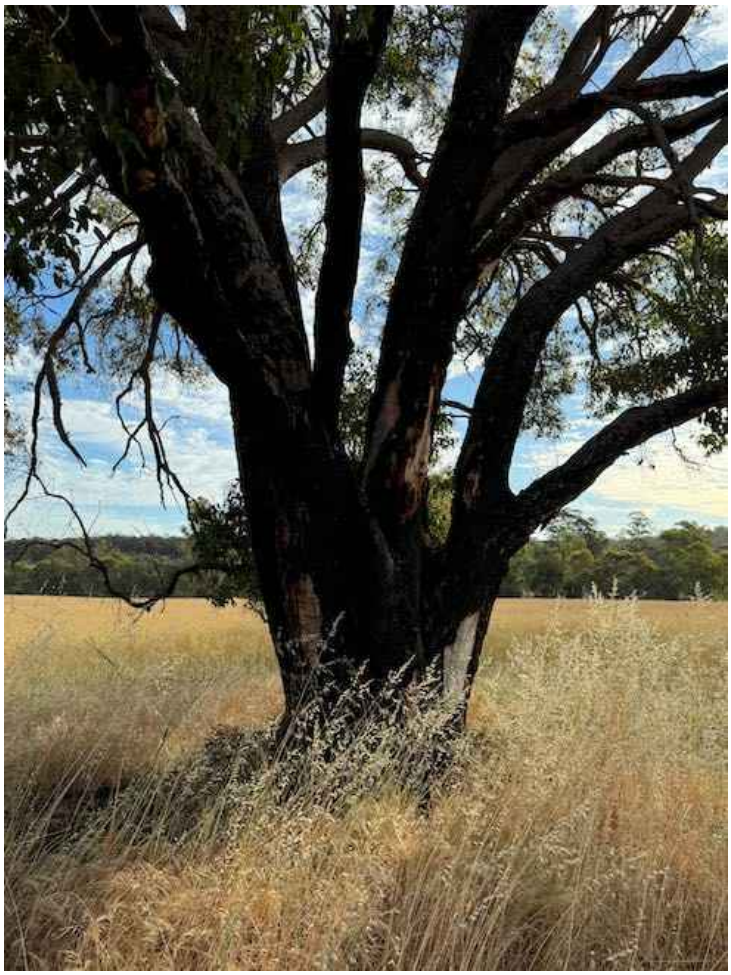

Plate 11: Burnt marri (*Corymbia calophylla*) in canola paddock

Appendix 7. Results from BC Habitat survey May 2025

Thursday 29 May 2025

Craig Bovell

Doral Leucoxene Pty Ltd

Via email to: Craig.Bovell@Doral.com.au

Re: Jelcobine Offset Technical Memo WB1067

Good afternoon Craig,

Geoff and I have completed the Black-Cockatoo (BC) nest hollow assessment at Jelcobine, Lot DP 90037 (the AOI). We have summarised our findings below.

1. During our May 2025 survey of potential nest hollows in habitat trees, we took georeferenced photos, which we can share with you if required. These are large images, typically 8 to 11 MB each. Three examples are presented below (Figures 1, 2 and 3).
2. During the May 2025 survey, we recorded a total of **90 visible hollows** that may be suitable for BC nesting in 47 trees, all with a Bamford Consulting Ecologists (BCE) rank of 3, across the AOI (presented in Figure 4). Hollows with a BCE rank of 4 or 5 were not recorded because they were considered less suitable for nesting. No hollows with a BCE rank of 2 or 1 were observed because the survey was conducted outside the breeding season and there were no chew marks and no nesting activity.
3. Our May 2025 survey track logs are presented in Figure 5.
4. Our records of tree locations, species, number of hollows and BCE rank for the May 2025 survey are presented in Table 1.

We hope this information is sufficient for your requirements. If you have any queries, please don't hesitate to contact me.

Kind regards

Linda Dalgliesh

Figure 1: *Eucalyptus wandoo* stag at WP27 with 1 suitable hollow and a DBH of 102 cm (Photo 1856).

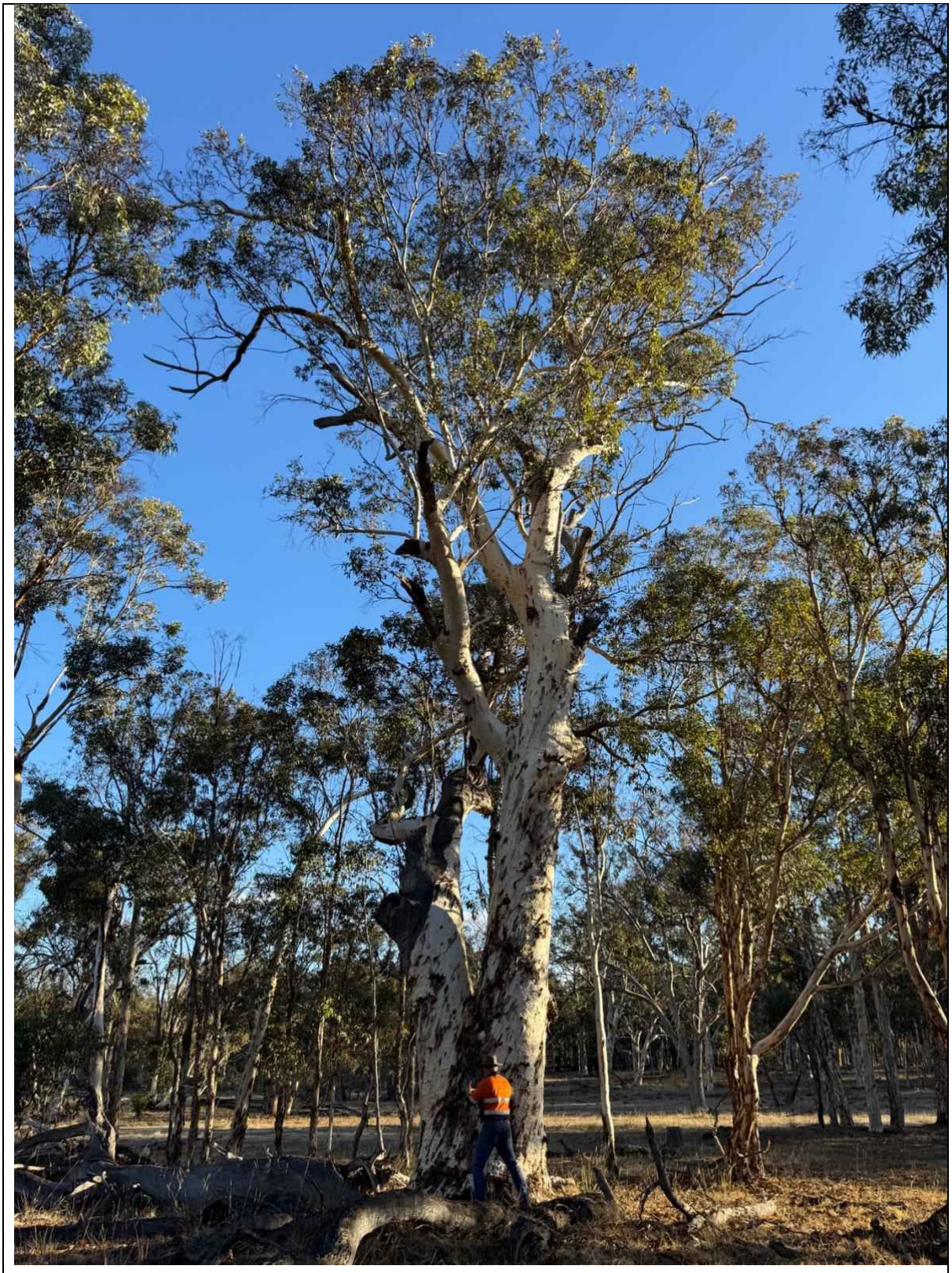

Figure 2: *Eucalyptus wandoo* at WP27 with 6 suitable hollows and a DBH of 155 cm (Photo 1870).

Figure 3: *Eucalyptus wandoo* at WP 47 with 3 suitable hollows and a DBH of 152 cm (Photo 1904).

Figure 4: Habitat tree locations mapped on vegetation types in May 2025

Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

458500 459000 459500

6415500 6415000 6414500 6414000

Vegetation Legend

- 1 - Remnant E. wandoo woodland, occasional E. marginata (mostly dead) and E. accedens on ferricrete outcrops, with little extant understory, few weeds.
- 2 - Mid to lower slopes, laterite gravel, Revegetate on contour with local Euc wandoo, Hakea, Dryandra, Banksia, Acacia spp.
- 3 - Winter wet low lying area, Revegetate with Melaleuca, Casuarina obesa, Euc rudis
- 4 - Planted Eucalyptus and Casuarina trees, grass and herbs understory
- 5 - Drainage line with narrow incised channel, Eucalyptus wandoo, E. rudis to 25m over grasses and herbs
- 6 - Farm dams and drainage, seepage, likely permanent water
- 7 - Crop (Canola in 2024)
- 8 - Fallow
- 9 - Farm dam, Typha dominated, permanent water

Boyagarring Conservation Park

Youraling State Forest

WP 15 WP 14 WP 17 WP 16 WP 12 WP 13 WP 18 WP 11 WP 10 WP 9 WP 1 WP 8 WP 7 WP 4 WP 3 WP 2 WP 6 WP 5 WP 20 WP 21 WP 19 WP 48 WP 26 WP 22 WP 23 WP 24 WP 25 WP 27 WP 28 WP 29 WP 30 WP 31 WP 32 WP 33 WP 39 WP 38 WP 40 WP 35 WP 34 WP 41 WP 42 WP 37 WP 43 WP 36 WP 44 WP 47 WP 45 WP 46

1 2 3 4 5 6 7 8 9

Legend

- Habitat tree
- Survey Area
- Legislated Lands
- Track

0 50 100m

Scale: 1:6,000
MGA94 (Zone 50)

CAD Ref: a3087_F007_01

Date: May 2025 | Rev: A | A3

Western Botanical

Author: L. Dalgliesh

Drawn: CAD Resources ~ www.cadresources.com.au
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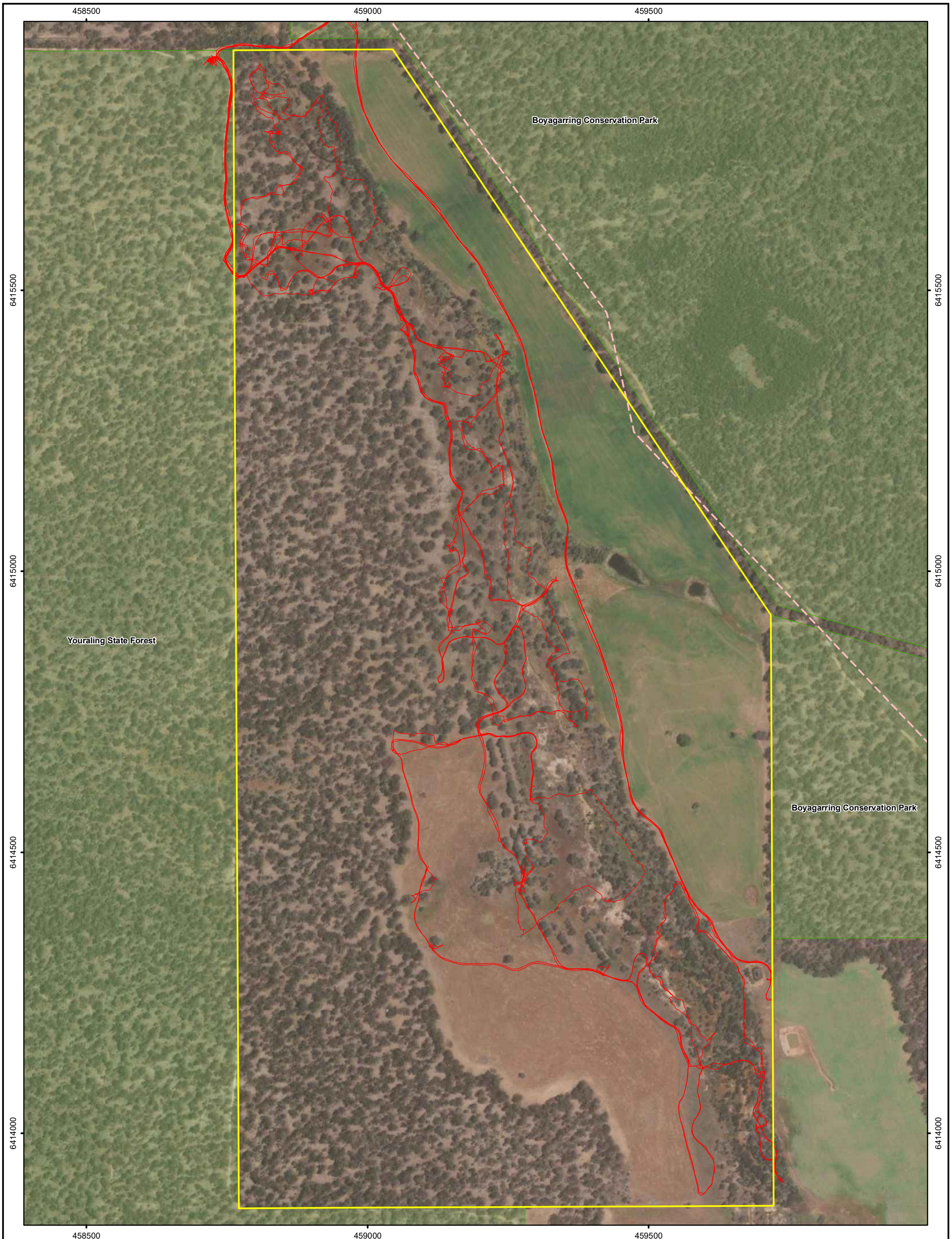
Doral Mineral Sands Pty Ltd
Jelcobine Project
Vegetation Types and Habitat Trees

Figure 5: May 2025 Survey Track logs

Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Legend

- Survey Area
- Legislated Lands
- Survey Track Log
- Track

0 50 100m

Scale: 1:6,000
MGA94 (Zone 50)

CAD Ref: a3087_F008

Date: May 2025 | Rev: A | A3

Western Botanical

Author: L. Dalgliesh

Drawn: CAD Resources ~ www.cadresources.com.au
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Doral Mineral Sands Pty Ltd

Jelcobine Project

Survey Track Logs

Table 1: Trees recorded with potential nest hollows suitable for Black-Cockatoos

WP	Tree species	Live or dead	DBH (cm)	BCE rank	Number of visible hollows	Image Number	Latitude (GDA)	Longitude (GDA)	Veg Unit*	Notes
1	*Eucalyptus wandoo*	L	118	3	3	1840	-32.3956	116.5632	5	
2	*Eucalyptus wandoo*	L	93	3	2	1843	-32.3962	116.5628	5	
3	*Eucalyptus wandoo*	L	92	3	2	1844	-32.3961	116.5626	5	
4	*Eucalyptus wandoo*	L	93	3	2	1845	-32.3960	116.5623	1	
5	*Eucalyptus wandoo*	L	109	3	3	1847	-32.3964	116.5622	1	
6	*Eucalyptus wandoo*	L	85	3	1	1848	-32.3963	116.5617	1	
7	*Eucalyptus wandoo*	L	101	3	2	1849	-32.3960	116.5616	1	
8	*Eucalyptus wandoo*	L	91.5	3	1	1850	-32.3957	116.5615	1	
9	*Eucalyptus wandoo*	L	101.5	3	3	1851	-32.3952	116.5622	5	
10	*Eucalyptus wandoo*	L	104	3	1	1852	-32.3951	116.5624	5	
11	*Eucalyptus wandoo*	D	69.5	3	1	1853	-32.3948	116.5628	5	Stag, vertical trunk
12	*Eucalyptus wandoo*	D	91	3	2	1854	-32.3942	116.5622	5	Stag, vertical trunk with branches
13	*Eucalyptus wandoo*	D	105	3	1	1855	-32.3942	116.5624	5	Stag, vertical trunk, ringbarked
14	*Eucalyptus wandoo*	D	102	3	1	1856	-32.3936	116.5619	5	Stag
15	*Eucalyptus wandoo*	D	76	3	1	1857	-32.3932	116.5619	5	Stag
16	*Eucalyptus rudis*	D	79	3	2	1858	-32.3940	116.5628	5	Stag, lignotuber over 2m diameter

WP	Tree species	Live or dead	DBH (cm)	BCE rank	Number of visible hollows	Image Number	Latitude (GDA)	Longitude (GDA)	Veg Unit*	Notes
17	*Eucalyptus wandoo*	D	99.5	3	1	1859	-32.3936	116.5632	5	Stag
18	*Eucalyptus wandoo*	D	85	3	1	1860	-32.3945	116.5635	5	Stag
19	*Eucalyptus wandoo*	L	117.5	3	1	1862	-32.3969	116.5630	1	
20	*Eucalyptus wandoo*	L	107.5	3	2	1863	-32.3966	116.5638	5	
21	*Eucalyptus rudis*	L	78.5	3	1	1864	-32.3968	116.5642	5	
22	*Eucalyptus wandoo*	L	121	3	2	1865	-32.3979	116.5655	5	
23	*Eucalyptus wandoo*	L	108	3	3	1866	-32.3980	116.5654	5	
24	*Eucalyptus wandoo*	L	92	3	1	1867	-32.3982	116.5656	5	
25	*Eucalyptus wandoo*	L	103	3	1	1868	-32.3983	116.5656	5	Alive at base only
26	*Eucalyptus wandoo*	D	73.5	3	1	1869	-32.3978	116.5667	5	Stag, branched
27	*Eucalyptus wandoo*	L	155	3	6	1870	-32.3989	116.5660	5	Massive tree
28	*Eucalyptus wandoo*	L	98.5	3	1	1871	-32.4009	116.5655	1	(also 2 less suitable hollows)
29	*Eucalyptus wandoo*	L	89.5	3	1	1872	-32.4009	116.5657	5	
30	*Eucalyptus wandoo*	L	86	3	2	1873	-32.4014	116.5654	1	
31	*Eucalyptus wandoo*	L	105	3	1	1875	-32.4018	116.5655	1	
32	*Eucalyptus wandoo*	L	128	3	4	1876	-32.4021	116.5662	5	
33	*Eucalyptus wandoo*	D	114	3	1	1877	-32.4038	116.5666	5	Stag, ringbarked

WP	Tree species	Live or dead	DBH (cm)	BCE rank	Number of visible hollows	Image Number	Latitude (GDA)	Longitude (GDA)	Veg Unit*	Notes
34	*Eucalyptus wandoo*	L	124	3	5	1883	-32.4056	116.5673	4	
35	*Eucalyptus wandoo*	L	121	3	4	1884	-32.4056	116.5669	4	
36	*Eucalyptus wandoo*	D	96.5	3	4	1885	-32.4072	116.5669	2	Stag
37	*Eucalyptus wandoo*	D	103.5	3	2	1886	-32.4067	116.5685	5	Stag
38	*Eucalyptus wandoo*	L	105.5	3	2	1887	-32.4039	116.5654	2	
39	*Eucalyptus wandoo*	L	121.5	3	1	1888	-32.4039	116.5649	2	
40	*Eucalyptus wandoo*	D	110	3	1	1889	-32.4043	116.5644	1	Stag, recently dead
41	*Eucalyptus wandoo*	L	117	3	3	1891	-32.4062	116.5653	2	
42	*Eucalyptus wandoo*	L	108.5	3	2	1892	-32.4066	116.5648	2	
43	*Eucalyptus wandoo*	L	85.5	3	1	1893	-32.4073	116.5653	3	
44	*Eucalyptus wandoo*	L	128	3	1	1894	-32.4076	116.5685	4	
45	*Eucalyptus wandoo*	L	97	3	2	1895	-32.4093	116.5714	5	Dead central trunk, alive at base
46	*Eucalyptus wandoo*	D	89.5	4	0	1897	-32.4101	116.5714	5	Stag, no suitable hollows
47	*Eucalyptus wandoo*	L	152	3	3	1904	-32.4090	116.5714	5	Large tree
48	*Eucalyptus wandoo*	L	78.5	3	1	1915	-32.3974	116.5646	5	Top snapped off
	Total hollows				90					

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