

Smithson Environmental



Environmental Impact Assessment

Black Cockatoo Impact Assessment;
Targeted Survey for Presence of Brush-Tailed
Phascogale (*Phascogale tapoatafa
wambenger*)

For Jeremy Van Hazendonk
1636 Muirillup Road, Northcliffe, WA6262

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Summary

An area of 22.5 hectares within the Lot at 1636 Muirillup Road, Northcliffe, is proposed for vegetation clearing. As assessed by distribution of habitat trees greater than 50cm diameter, the area comprised predominantly Karri *E. diversicolor* forest with native understory in mostly excellent to pristine condition. Marri *C. calophylla* occurred over approximately 6.7 hectares, with 5.5 hectares where Marri was recorded as the most frequent habitat tree species. Areas with Marri had native understory in excellent to pristine condition. A small defined zone in the north of the impacted area showed evidence of human disturbance and weed invasion in the understory, and was in degraded to good condition. The area proposed for vegetation removal slopes to the west down to a minor watercourse, which flows south into Shannon State Forest.

The presence of scattered notched tree stumps combined with consideration of the current size distribution of Karri *E. diversicolor*, Marri *C. calophylla* and Jarrah *E. marginata* present was consistent with pre-1960s low-intensity logging of larger tree diameter classes. There was no evidence of management or change in forest cover more recently, at least since 2000. Evidence of disturbance through recent harvesting and burning was absent, though human disturbance was evident in the understory on the northern edge adjacent pasture. Old-Growth forest in Western Australia is defined as ecologically mature forest where the effects of unnatural disturbance are negligible. Site assessment determined that the impacted area currently lacks many of largest senescent tree size classes, notably of Karri *E. diversicolor*, with these most likely to contain fauna nesting holes. On this basis the area scheduled for vegetation removal is not considered to fully meet the ecological definition of Old-Growth forest.

Habitat tree assessment for Black Cockatoos *Calyptorhynchus* sp. determined that 1123 trees over 22.5 hectares proposed for removal exceeded 50cm diameter at breast height, of which 35 trees exceeded 100cm diameter at breast height. The majority of habitat trees recorded were Karri *E. diversicolor*. No evidence of breeding activity by Black Cockatoos within the area surveyed was determined, and limited evidence of recent feeding activity on areas with Marri *C. calophylla* was found. White-tail Black Cockatoos (Carnaby's *C. latirostris* and/or more likely Baudin's *C. baudinii*) were observed from the impacted area, but were predominantly overflying. Potential nest hole presence was noted in 8 trees and 10 tree stumps within the impacted area, though nest holes were likely to have been underestimated due to height of the extant tree canopy. Should the vegetation be removed as proposed across the impacted area, 22.5 hectares of potential Black Cockatoo breeding habitat would be removed, and at least 5.5 hectares of potential Black Cockatoo high quality foraging habitat would be removed. The proposal was therefore deemed High Risk for potential impact on Black Cockatoos. Federal referral under the EPBC Act 1999 is recommended.

Phascogale *P. t. wambenger* was detected within the impacted at the Lot, using trail cameras. The single detection occurred in the south west corner of the impacted area, furthest from human influence, on one video/photograph set within 22 nights of cumulative trail camera recordings. Spotlighting, over cumulatively 8 hours, and search for faunal signs on tree trunks did not return additional evidence of Phascogale presence. It was not considered possible to definitively predict Phascogale *P. t. wambenger* habitat use in the impacted area from available data, though presence of suitable nesting hollows was considered likely.

1. Introduction

Smithson Environmental was contracted to assess the environmental impact of removal of existing forested vegetation, as delineated on Figure 3.1 below, located within 1636 Muirillup Road, Northcliffe (henceforward termed “The Lot”). The Lot totals 628577.97 m² / 62.9 hectares, and is currently utilised for agricultural purposes including stock and hay in the northern half, with a central main residence, and forested vegetation in the southern half (Figure 3.1). The landowner proposes to remove the delineated (Figure 3.1) area of forested vegetation to mitigate bushfire risk to the rear (south) of the main residence, and to increase the area available for agricultural purposes. The delineated area proposed for vegetation management (Figure 3.1) is henceforward termed “The Target Area”. The total area delineated in Figure 3.1 as the Target Area was mapped at 225288 m² / 22.53 hectares. The landowner has applied for a native vegetation clearing permit for the Target Area and was required to obtain environmental assessments specifically addressing the impacts upon Black Cockatoos (*Calyptorhynchus* sp.) and Brush-Tailed Phascogale (*Phascogale tapoatafa wambenger*). This reporting details the results of environmental impact assessment of removal of forested vegetation in the Target Area upon these two target faunal groups, with practical site assessments completed during November 2022.

2. Desktop Environmental Assessment

2.1. Introduction

The Lot is Zoned Priority Agriculture and lies approximately 298km south south east of Perth, 13km east of Northcliffe townsite, within the Shire of Manjimup. No Historic or Aboriginal Heritage areas are recorded at The Lot.

2.2. Physical Environment

Identification of Physical and Environmental Features Relevant to the Lot			
Feature Type	Location	Dataset or Data Source Used	Description
Topography	At The Lot	Landgate South West Contour Data (5m)	In the majority 145m a.s.l. Low-point is 125m a.s.l. in south-west corner, rising to 160m a.s.l. in south-east corner. Valley (125-135m a.s.l.) runs on a north-south axis into the south-west corner.
Topography	Adjacent The Lot	Landgate South West Contour Data (5m)	Rolling hills: hilltops to 165m a.s.l. at 355m south-east of Lot, with steep drop from there to Canterbury River valley.
Soil	At The Lot	ASRIS Soil Atlas	Across the Lot - Uc1: Steep hilly to hilly dissected lateritic plateau with steep valley side slopes: chief soils are hard, and also sandy, neutral, and also acidic, yellow and yellow mottled soils with conspicuous but relatively smaller areas of red earths. Associated are areas of block laterite, gravelly and bouldery soils on tops of rises and their colluvial slopes; some areas of leached sands, some soils on slopes; some soils on terraces of major streams
Soil	Adjacent The Lot	ASRIS Soil Atlas	30km south and west of Lot - Tc7: Knolls and hillocks-- "islands" of Granitic soils separated by swampy plains.
National Heritage and Aboriginal Heritage	At and Adjacent The Lot	AHIS, DOP-046	Not Indicated as Present
Acid Sulphate Soils	At and Adjacent The Lot	DER-ASS	Not Indicated as Present
Tuart Woodland	At and Adjacent The Lot	DCBA-048	Not Indicated as Present

2.2.1. Climate

Climate statistics are given for Pemberton weather station, 33km north-west of The Lot.

Identification of Climate Features Relevant to the Lot (Pemberton Weather Station, Bureau of Meteorology)													
Feature	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean maximum temperature (°C)	26.3	26.6	24.6	21.3	18.3	16.0	15.2	15.6	16.9	18.9	21.5	24.1	20.4
Mean minimum temperature (°C)	13.2	13.6	12.8	11.0	9.3	8.2	7.2	7.1	7.6	8.7	10.3	11.9	10.1
Mean rainfall (mm)	22.4	19.5	36.8	74.2	149.6	187.2	210.0	171.6	129.7	89.5	60.1	34.7	1183.4
Mean 3pm windspeed (km/h)	13.7	13.6	12.5	10.8	11.5	12.2	13.0	13.5	14.0	14.6	14.7	14.3	13.2

2.3. Biotic Environment

2.3.1. Areas of Native Vegetation

Identification of Areas of Native Vegetation Relevant to the Lot			
Vegetation Type	Location	Dataset or Data Source Used	Description
Pre-European Native Vegetation Association Predicted	At The Lot	DPIRD-006: Pre-European Vegetation	Nornalup vegetation association: tall forest or woodland of mainly Karri <i>Eucalyptus diversicolor</i>
	Adjacent the Lot – 23.5km to north and west	DPIRD-006: Pre-European Vegetation	Bridgetown vegetation association: forests of Jarrah <i>E. marginata</i> and Marri <i>Corymbia calophylla</i>
	Adjacent the Lot – 13.7km to south and east	DPIRD-006: Pre-European Vegetation	Scott River vegetation association: sedgeland
Vegetation Complex Predicted	At the Lot	DBCA-047: South West Forest Regions of WA	In majority - Collis COd: Tall open forest of <i>E. marginata</i> - <i>C. calophylla</i> - <i>Banksia grandis</i> on saddles between hills in the perhumid zone.
			South-west corner: Granite Valleys Vh2: Tall open forest of <i>E. diversicolor</i> - <i>E. patens</i> on slopes with <i>Agonis flexuosa</i> - <i>Allocasuarina decussata</i> - <i>Callistachys lanceolata</i> on valley floors in hyperhumid and perhumid zones.
Forest Vegetation Present	At The Lot	Landgate Aerial Imagery	Forest vegetation identified as present
Native Vegetation Present	At The Lot	DPIRD-005: Native Vegetation Extent	Native vegetation indicated as present over majority of Target Area
Geomorphic Wetlands, and their 50m buffer	At and Adjacent the Lot	DCBA-013, 014, 016, 017, 019, 040, 043, 044,	Not Indicated as Present
Ramsar Sites	At and Adjacent the Lot	DCBA-010	Not Indicated as Present
South Coast Significant Wetlands	At and Adjacent the Lot	DCBA- 018	Not Indicated as Present
Streams and other Watercourses	At and Adjacent the Lot	DPIRD-069, 087, DWER-036	Not Indicated as Present; dam noted in valley on The Lot suggestive of stream

2.3.2. Threatened and Protected Areas, Flora, Fauna and Communities

Identification of Protected and Threatened Areas Relevant to the Lot			
Area Type	Location	Dataset or Data Source Used	Description
Legislated Lands and Waters	At The Lot	DCBA-011	Not Indicated as Present
	Adjacent The Lot	DCBA-011	120m north – Jane National Park; 0m south – Shannon State Forest 1.2km south-west – Boorara-Gardner National Park 5km east – Shannon National Park
Bush Forever Areas	At and Adjacent The Lot	DPLH-019	Not Indicated as Present
Threatened Ecological Community	At and Adjacent The Lot	DCBA-046	Not Indicated as Present
Threatened and Priority Flora and 50m Continuous Buffer	At and Adjacent The Lot	DCBA-046	Not Indicated as Present
Known Black Cockatoo Night Roosting and Breeding Sites	At and Adjacent The Lot	DBCA-063, 064, Great Cocky Count Reporting, EPBC Act Guidelines Maps (Commonwealth of Australia 2012)	Night roost mapped 15km north-west of the Lot; area around Northcliffe mapped as within Baudin's Cockatoo <i>C. baudinii</i> breeding area and edge of Carnaby's Cockatoo <i>C. latirostris</i> breeding areas.
Forest Disease Risk Areas	At and Adjacent The Lot	DCBA-024	Indicated as Present 18km east of The Lot
Western Ringtail Possum Habitat Suitability	At and Adjacent The Lot	DCBA-049	Not Indicated as Present
Tuart Woodland	At and Adjacent The Lot	DCBA-048	Not Indicated as Present
Old Growth Forest within South West WA	At and Adjacent The Lot	www.dbca.wa.gov.au/sites/default/files/2021-11/Map Old-Growth Forests February 2020.pdf	The Lot is not indicated as Old Growth Forest. Multiple adjacent areas including Shannon State Forest on southern boundary are indicated as Old Growth Forest.

2.3.3. Locally Significant Natural Areas

Identification of Protected and Threatened Areas Relevant to the Lot			
Feature	Location	Dataset or Data Source Used	Description
Local Reserves	At and Adjacent The Lot	Shire of Manjimup	Not Indicated as Present
Species Vegetation Community identified as significant under Local Biodiversity Strategy	At and Adjacent The Lot	Shire of Manjimup	Not Indicated as Present
Habitat Trees Present	At and Adjacent The Lot	Shire of Manjimup	Not Indicated as Present

2.3.4. Lot History

Landgate Aerial photography is available from the present day along with 2014, 2007, 2004 and 2000. All aerial photographs show that forested vegetation cover was similar between 2000 and the present day, both at The Lot overall and within the Target Area on the Lot. No increases or decreases in forested areas at The Lot were visible. The only observable change was adjacent the Target Area, where trees in Shannon State Forest immediately to the south of Target Area were noted as harvested in aerial photographs from 2000.

2.4. Summary of Desktop Assessment Relevant to Impact Assessments

The Target Area for which vegetation management is proposed comprises extant forested vegetation expected to be native, most likely of Karri *E. diversicolor* or Jarrah *E. marginata* – Marri *C. calophylla* in the overstory. There is no evidence of management or change in forest cover of the Target Area since aerial photography in 2000, and no history of recent burns or disturbance. The Target Area is embedded within and contiguous with a network of linked National Parks and State Forests, and is not an isolated patch. No protected or threatened flora, fauna or communities are known to be present in the Target Area. The Target Area is not itself mapped as Old Growth Forest, but lies adjacent to mapped areas of Old Growth Forest.

3. Informal Flora Assessment

3.1. Methodology

The Target Area was walked intensively during the impact assessments carried out for Black Cockatoos and Phascogales described in sections 4 and 5 below. During assessment, features within the Target Area were noted, and flora species and tree stumps were with the aim to determine:

- Does the understory comprise native or introduced flora, and if native what is the condition?
- Does the forested vegetation within the Target Area comprise old-growth forest, lacking in previous human disturbance and/or timber harvest history?
- Are protected flora species or communities likely to be present?

It is noted that the assessment was informal, and was not regarded as sufficiently intensive to determine a full flora list for the Target Area (as would be required during a Level 1 flora survey). Condition was assessed against the Keighery Scale (Keighery 1994). Tree stumps were formally mapped only when these were noted to provide habitat for Black Cockatoos (section 4).

3.2. Results

Features recorded during assessment are mapped in Figure 3.1. A watercourse was noted as present to the west of and adjacent to the Target Area. An indicative 50m buffer was mapped around the watercourse. Firebreaks and main north-south access track were mapped (Figure 3.1).

Understory native flora noted during assessment are given in Table 3.1, these should be regarded as indicative. Condition across the majority of the Target Area was scored as excellent to pristine (Figure 3.1), with weeds noted only on access tracks and firebreaks and disturbance limited to occasional characteristically notched tree stumps. To the north and central part of the Target Area (delineated in Figure 3.1), a selected area was defined as in Degraded to Good condition, due to the presence of evidence of human disturbance in the form of wider access tracks, cleared patches, pits, presence of agricultural machinery, evidence of burrows of Fox *Vulpes vulpes*, and ingress of grassy weeds from the adjacent pasture. A typical view of the Target Area described in excellent to pristine condition is given in Figure 3.2.

Tree stumps were noted as rarely present scattered across the whole Target Area. These were noted as generally very large (tending 150cm diameter or more), predominantly Karri *E. diversicolor* with possibly one Jarrah *E. marginata*. Trunk notches were noted positioned below the sawed surface, which are characteristic of the use of cross-cut saw felling by hand (see Figure 3.2). This is indicative that selected very large Karri *E. diversicolor* were likely felled within the Target Area prior to the use of powered chainsaw felling, which was predominant through to the 1940s and 1950s (Heberle 1997). 10 tree stumps were recorded and mapped as providing habitat value for Black Cockatoos (section 4).

3.3. Summary and Implications for Black Cockatoo and Phascogale Surveys

- The forested understory comprises in the majority native vegetation in excellent to pristine condition. Introduced flora were restricted to a specific area on the northern edge and the centre north of the Target Area.
- Evidence of felling of very large (>1m diameter) Karri *E. diversicolor* and rarely Jarrah *E. marginata* was evident through tree stumps sparsely scattered through the Target Area. Stumps generally showed notches consistent with felling pre-1960s.
- No protected flora species or communities were identified during assessment. It is noted however that flora assessment was not intensive as expected for a full Level 1 survey

Table 3.1 Indicative understory (non-tree) species noted as present within the Target Area

Flora Species noted as present within the Target Area
<i>Caladenia latifolia</i>
<i>Chorilaena quercifolia</i>
<i>Chorizema cordatum</i>
<i>Clematis pubescens</i>
<i>Dampiera hederacea</i>
<i>Diplolaena dampieri</i>
<i>Hardenbergia comptoniana</i>
<i>Hibbertia cuneiformis</i>
<i>Hovea elliptica</i>
<i>Johnsonia lupulina</i>
<i>Kennedia coccinea</i>
<i>Persoonia longifolia</i>
<i>Pimelea longiflora</i>
<i>Pteridium esculentum</i>
<i>Thomasia triphylla</i>
<i>Trymalium odoratissimum</i>
<i>Xanthorrhoea preissii</i>

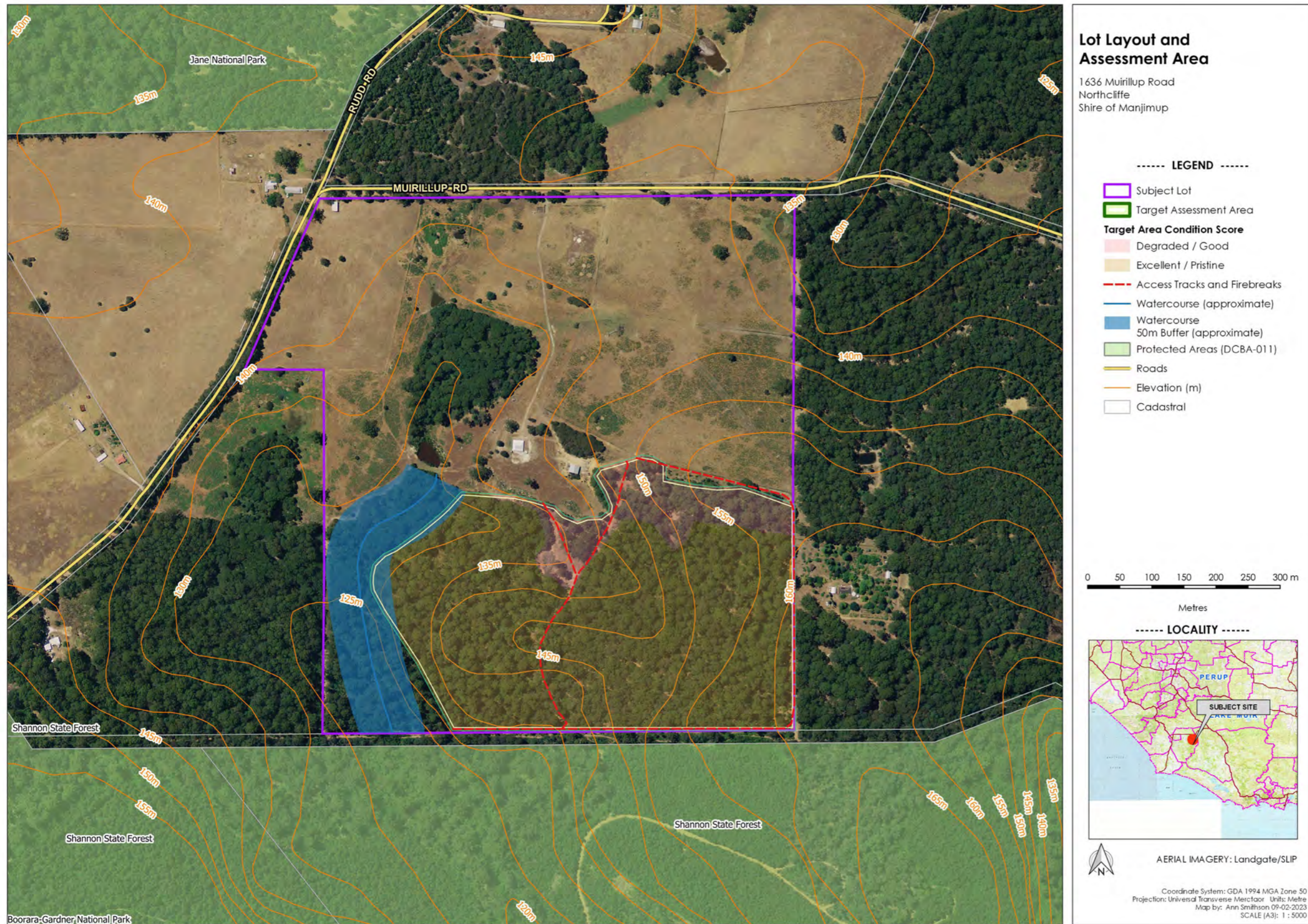


Figure 3.1 Features on and surrounding the Lot assessed, including Target Assessment Area

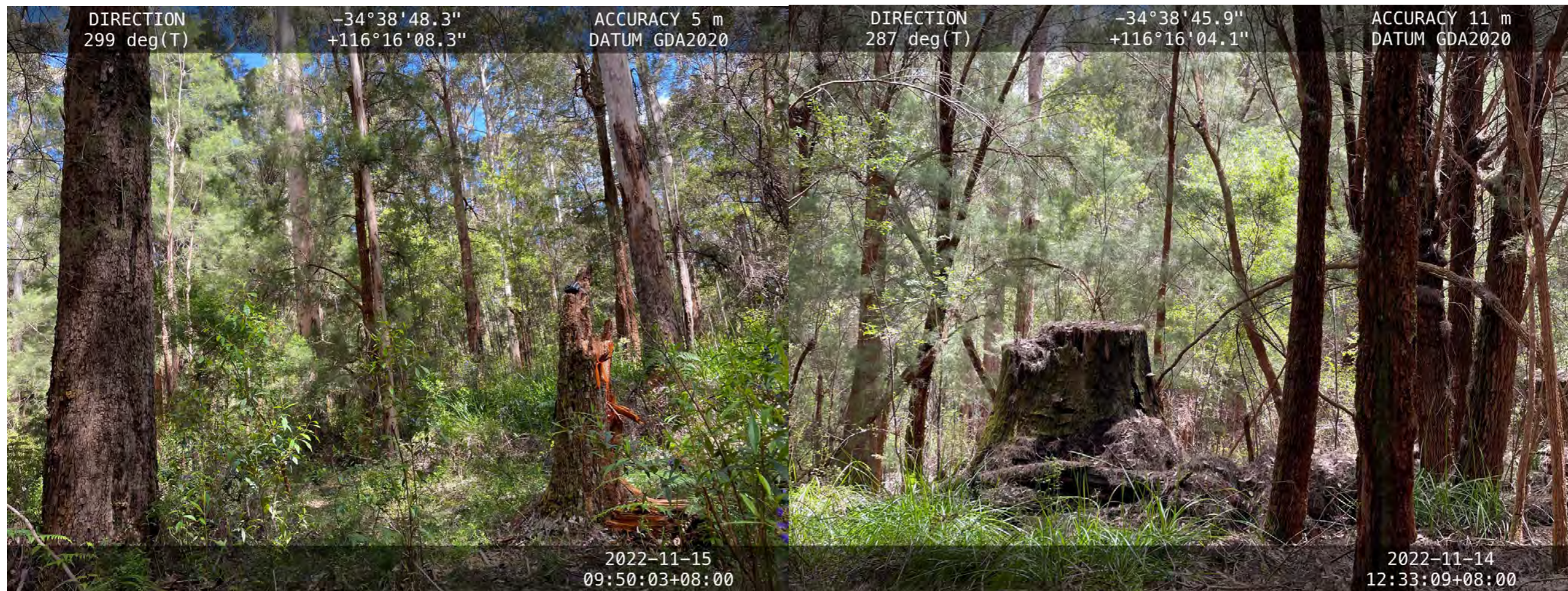


Figure 3.2 Typical views of the Target Area. Left - area in excellent to pristine condition, with trail camera NT2 installed. Right - stump showing evidence of cross-cut sawing

4. Black Cockatoo Impact Assessment

4.1. Rationale

The proposed removal of vegetation within the Target Area at The Lot will impact 22.5 hectares of vegetation. This vegetation, per desktop assessment as described in section 2, was considered likely to comprise native forests of Karri *E. diversicolor* or Jarrah *E. marginata* – Marri *C. calophylla*. The approval for removal of vegetation from the Target Area has been determined as dependent on lack of significant impact on Black Cockatoos.

Black Cockatoos within Western Australia comprise three species: two species of White-tailed cockatoos (Carnaby's cockatoo *Calyptorhynchus latirostris*, and Baudin's cockatoo *C. baudinii*) and the Forest red-tailed Cockatoo (*Calyptorhynchus banksii naso*). Under both Western Australian State legislation and Federal EPBC Act, Black Cockatoos are protected, with Forest red-tailed considered Vulnerable and Carnaby's and Baudin's Endangered (Department of Biodiversity, Conservation and Attractions 2022). Therefore, the habitat of Black Cockatoos is protected, so any habitat removal or modification which is deemed to have significant impacts on Black Cockatoo habitats require Federal referral for approval as laid out in EPBC Act referral guidelines for Black Cockatoos (Commonwealth of Australia, 2012). The Target Area lies at the edge of the known breeding range for Carnaby's Cockatoo *C. latirostris*, within the predicted mapped breeding range for Baudin's Cockatoo *C. baudinii*, and within the known range for Forest red-tailed Cockatoos *C. banksii naso*. Therefore, the purpose of this Black Cockatoo Impact Assessment is to determine whether removal of vegetation within the Target Area is deemed to have the potential for a significant impact on Black Cockatoo habitats, as defined by the EPBC Act referral guidelines for Black Cockatoos (Commonwealth of Australia, 2012).

4.2. Methodology

Trees at site were assessed between 11th and 15th November 2022, to meet the methodological requirements described for tree habitat impact assessments within the EPBC Act referral guidelines for Black Cockatoos (Commonwealth of Australia, 2012). The entire Target Area was assessed, with the exception of low-lying areas adjacent the stream (section 3, see Figure 4.1) where exceptionally dense shrub-layer vegetation and steep slippery slopes made access challenging, and where canopy changed to that dominated by species such as *Taxandria juniperina*. Each tree was determined as whether exceeding 0.5m / 50cm diameter at breast height (henceforward "DBH") at 1.4m above ground (as per AS4970-2007) using a fixed 50cm calliper. Trees meeting or exceeding 50cm DBH were measured using manual 50-80cm calipers (Haglof, Sweden). Diameters for trees above 80cm DBH were assessed using multiple caliper spans and are approximate. Each measured tree was marked onsite on the south side of the tree trunk using a single spray of Dulux fluorescent Spray Marker paint, and also geolocated using a Garmin GPSmap64 (adjacent the south side of the trunk). All trees were assessed for fauna and Black Cockatoo habitat potential via searching for potential nesting holes, fauna signs, and signs of feeding activity (the WA Museum 2022 nut mark guide was used to identify fruits with evidence of Black Cockatoo feeding activity). Trees meeting or exceeding 50cm DBH were considered to exceed the EPBC Act Black Cockatoo referral guidelines size limits for suitability for producing breeding holes (Commonwealth of Australia, 2012) and were defined as "Habitat Trees". Any tree having suitable bird / large fauna nesting holes or hollows was also defined as a Habitat Tree, though these all occurred within the cohort of Habitat Trees based on size in this

assessment. In the Target Area a number of large Habitat trees defined as exceeding 80cm DBH, and very large Habitat trees defined as exceeding 100cm DBH, were recorded, and due to their significance in presenting potential Black Cockatoo nesting holes were categorised separately. Trees less than 50cm DBH as assessed by fixed caliper were not measured or otherwise recorded, due to the large numbers of trees present (note that no Wandoo *E. wandoo* or *E. accedens* were present at site, thus size limits of 30cm DBH do not apply in this assessment).

Throughout the assessment period incidental observations were made of Black Cockatoos present at the Lot. This included at dusk, where the Target Area was assessed for night roosts of Black Cockatoos by walking the major tracks for aural and visual evidence of Black Cockatoo presence.

4.2.1. Survey Limitations

The site survey occurred during November 2022, which is within the known breeding periods for all three Black Cockatoo species. The site survey occurred outside the autumn period selected for the Great Cocky Count (Birdlife Australia 2016), which targets the non-breeding period where communal night roosting behaviour is most likely observed, at least for Carnaby's and Baudin's Cockatoos, and thus accurate counting of individuals is permitted (Commonwealth of Australia, 2012; Birdlife Australia 2016). Thus the date of site assessment of this Target Area would be most likely to result in the detection of breeding Black Cockatoos at site, while potential night roosting behaviour at site by White-tail Black Cockatoos would be underestimated.

4.3. Results

4.3.1. Habitat Tree Assessment

Table 4.1 summarises tree data recorded, with results of assessment mapped in Figure 4.1. 1123 habitat trees were measured and mapped in the Target Area, of which the majority (871 habitat trees recorded, 78% of all trees recorded) were Karri *E. diversicolor*. Karri *E. diversicolor* occurred through the Target Area and was the dominant canopy tree over the majority of the area (Table 4.1, Figure 4.1). Marri *C. calophylla* was present over approximately 6.7 hectares (213 habitat trees recorded, 19% of all trees recorded), but increased to become the most frequent habitat tree species over two areas comprising 5.52 hectares of higher ground (see Figure 4.2). Patchy Karri Sheoak *Allocasuarina decussata* (23 habitat trees, 2% of all trees recorded) were recorded bordering areas dominated by Marri, while Jarrah *E. marginata* (12 habitat trees, 1% of all trees recorded) were restricted to the highest point within the Target Area (Figure 4.1). Warren River Cedar *Taxandria juniperina* (4 habitat trees, 0.4% of all trees recorded) were scattered to north west and north central areas with notably the highest soil moisture levels. It is noted that locations to north and west within the Target Area that are shown lacking in habitat trees contained dense vegetation at shrub and canopy levels but lacked trees of habitat size. In addition to 1123 habitat trees, 10 dead tree stumps were recorded as having habitat value to Black Cockatoos, by the provision of suitable diameter nesting holes. These are mapped in Figure 4.1. These tree stumps were predominantly >3m tall stumps of Karri *E. diversicolor*.

Of the habitat trees assessed, 852 (76%) were in the smaller size class (50-<80cm), with 271 (24%) exceeding 80cm DBH. Most large habitat trees (>80cm DBH) were Karri *E. diversicolor* (242 trees), with all bar one of the remainder Marri *C. calophylla*

(28 trees). 35 very large habitat trees were recorded (exceeding 100cm DBH): 28 were Karri *E. diversicolor* and 7 Marri *C. calophylla*. The very large habitat trees were predominantly located away from the highest hill in the Target Area (Figure 3.1). The largest tree sizes recorded were for Karri *E. diversicolor* 177cm, and for Marri *C. calophylla* 186cm. The projected age for the largest Karri *E. diversicolor* of 177cm is of the order of 250 years old (Bradshaw & Rayner 1997), while the average DBH for all habitat Karri *E. diversicolor* recorded was 71.5cm, projected to be of the order of 100 years old (Bradshaw & Rayner 1997). Habitat trees >200cm DBH were not present.

Despite the frequency of large and very large habitat trees recorded in the Target Area, relatively few positive indicators of fauna habitat features were noted within them. Six instances of hollow trunk bases were noted, one of which was from one of the 10 tree stumps separately mapped (see Appendix 1). Eight instances of potential nest holes within habitat trees were noted during assessment, two of which were from stumps (Appendix 1). It was observed that the majority of trees at site were exceptionally tall, with canopy at significant height, such that there was likely an underestimation of nest hole availability within living habitat trees when observed from the ground. 16 instances of multistem trees were noted, of which 13 were from Karri *E. diversicolor*: multistem trees are often indicative of tree management followed by regrowth. Only two positive observations of a Black Cockatoo-chewed Marri *E. calophylla* nut were recorded: these were both of Forest red-tailed Black Cockatoo chewed nuts at two separate Marri *C. calophylla* (Appendix 1). This was despite the abundant Marri *C. calophylla* nuts that were evident on the ground, and significant time spent searching for markings.

4.3.2. Black Cockatoo Observations

Table 4.2 lists observations of Black Cockatoos made at site. During the four days of assessment, 11 records of White-tail Black Cockatoos were noted, most were of White-tail Cockatoo overflights of the Target Area, predominantly heading east. One record of White-tail Black Cockatoos within trees in the Target Area was noted (Table 4.2). No records of night roosting behaviour were noted on any of the evening assessments. Two brief dawn records of White-tail Cockatoos were noted, but these were also assessed as birds moving through the Target Area. The White-tail Cockatoo species was considered most likely based on call to be Baudin's *C. baudinii*.

Figure 4.1 Summary of habitat trees surveyed within the Target Area

Species	Scientific Name	DBH Class (cm)			Total
		50-<80	80-<100	>100	
Karri	<i>Eucalyptus diversicolor</i>	629	214	28	871
Marri	<i>Corymbia calophylla</i>	185	21	7	213
Karri Sheoak	<i>Allocasuarina decussata</i>	23	0	0	23
Jarrah	<i>Eucalyptus marginata</i>	12	0	0	12
Warren River Cedar	<i>Taxandria juniperina</i>	3	1	0	4
Total		852	236	35	1123

Figure 4.2 Observations of Black Cockatoos made in the Target Area

Date	Time	Black Cockatoo	Behaviour
11/11/22	05.30	White-Tailed	Calls from 2 birds
11/11/22	16.52	White-Tailed	Flying east over Target Area
12/11/22	13.36	White-Tailed	Overhead in Target Area
12/11/22	14.42	White-Tailed	Overhead in Target Area
14/11/22	05.10	White-Tailed	Call from 1 bird
14/11/22	07.47	White-Tailed	Call from inside Target Area
14/11/22	09.12	White-Tailed	Overhead in Target Area
14/11/22	09.19	White-Tailed	2 birds flying south east over Target Area
15/11/22	08.02	White-Tailed	Flying east over Target Area
15/11/22	08.16	White-Tailed	Flying east over Target Area
15/11/22	08.30	White-Tailed	Flying south east over Target Area

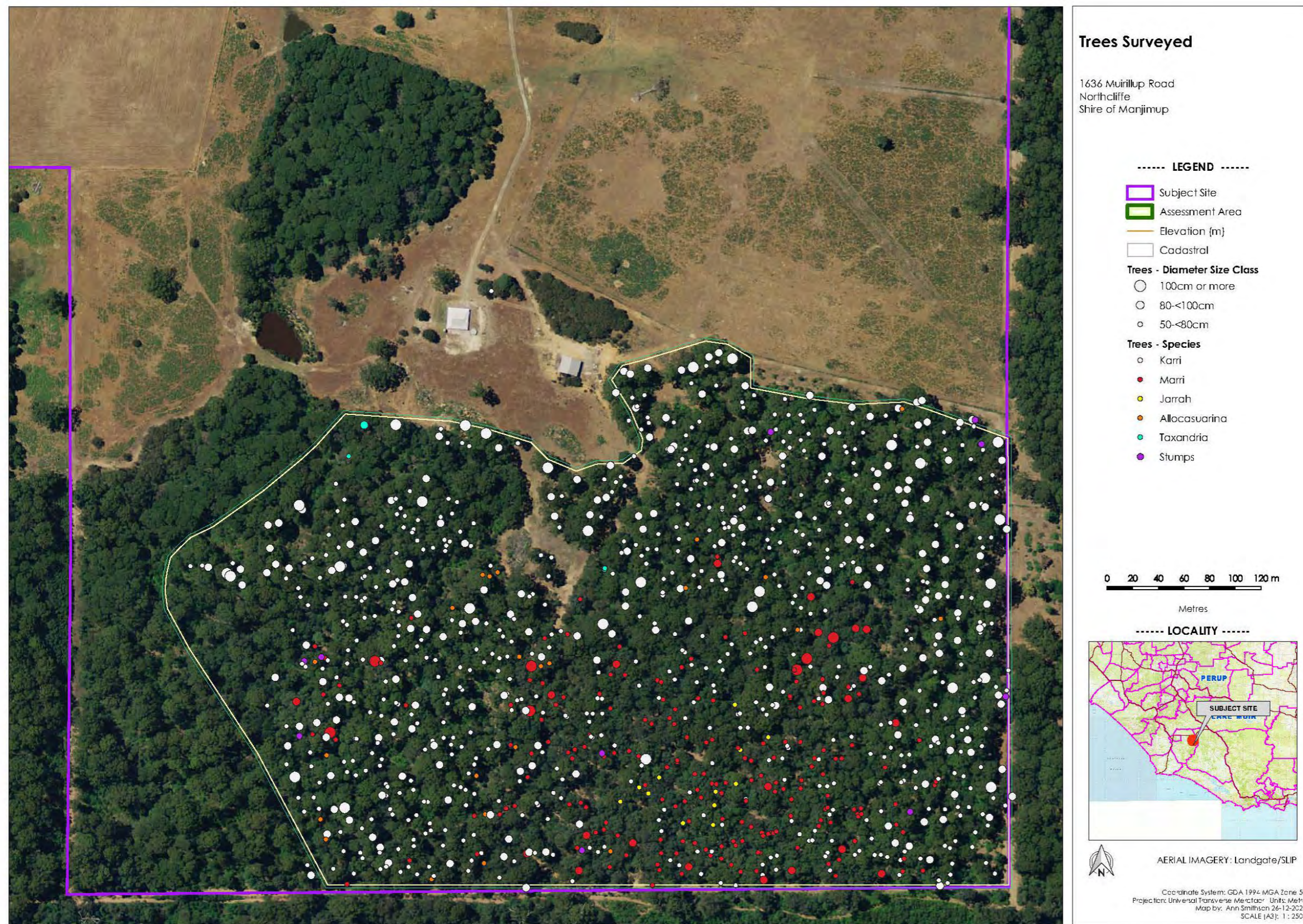


Figure 4.3 Results of habitat tree assessment within the Target Area, showing trees measured and mapped per section 4.2. Stumps shown are those with potential nest holes present only.



Figure 4.4 Area of 5.5 hectares containing Marri C. calophylla as the most frequent habitat tree.

4.4. Match to EPBC Act Black Cockatoo Referral Guidelines

Does the proposed Action fall within the scope of the EPBC Act referral guidelines for Black Cockatoos (Commonwealth of Australia 2012)?	
Does the impacts of the Action occur within the modelled distribution of Black Cockatoos?	Yes
Does the impact of the Action have the potential to affect any Black Cockatoo habitat or individuals?	Yes
Has Black Cockatoo habitat been surveyed using the recommended methods?	Yes
Does the Action propose to impact any of the following Black Cockatoo Habitats?	
Clearing of any known nesting tree	No
Comment: No evidence of breeding were positively identified in the Target Area during desktop assessment nor during site assessment.	
Clearing or degradation of any part of a vegetation community known to contain breeding habitat?	Possible
Comment: The Target Area contained 1123 trees exceeding 50cm DBH, including 28 Karri <i>E. diversicolor</i> and 7 Marri <i>C. calophylla</i> exceeding 100cm DBH, with an additional 10 stumps with potential nesting holes. These are indicative of high-quality potential breeding habitat for Black Cockatoos. The Target Area lies adjacent to or within the mapped range of White-tail Black Cockatoo breeding habitat (Baudin's <i>C. baudinii</i> , Carnaby's <i>C. latirostris</i>).	
Clearing of more than 1 hectares of quality foraging habitat?	Yes
Comment: The portion of the Target Area containing habitat Marri <i>C. calophylla</i> as the most frequent in the canopy, which is a preferred food source for Black Cockatoos, is approximately 5.5 hectares, with Marri <i>C. calophylla</i> found at site occupying 6.7 hectares. During the site assessment, however, limited evidence of ongoing use of the Target Area by foraging Black Cockatoos was obtained.	
Degradation (such as through altered hydrology or fire regimes) of more than 1 ha of foraging habitat?	Possible
Comment: The Target Area lies directly to the east of a watercourse which flows into Shannon State Forest, and is 22.5 hectares in size. A buffer around the water course of >50m is indicated in Figure 3.1. However, impacts of tree removal across the area on local water flows remains possible.	
Clearing or degradation (including pruning the top canopy) of a known night roosting site?	No
Comment: No night roosting sites are recorded or mapped within or adjacent the Target Area. However, the site assessment period would underestimate night roosting by White-tail Black Cockatoos, as this was conducted within the breeding period.	
Creating a gap of greater than 4 km between patches of Black Cockatoo habitat	No
Comment: The Target Area lies within an area that is predominantly forested, with large areas of State Forests and National Parks adjacent. No gaps would be created.	
Clearing or disturbance in areas surrounding Black Cockatoo breeding, foraging or night roosting habitat that has the potential to degrade habitat through introduction of invasive species, edge effects, hydrological changes, increased human visitation or fire.	Possible
Comment: The Target Area lies adjacent State Forest and National Parks mapped as Old-Growth Forest, and lies within mapped breeding areas for Baudin's Black Cockatoo <i>C. baudinii</i> . It is considered possible that modification of 22.7 hectares of forest to agricultural use will increase human visitation with potential negative impacts, and introduce invasive species.	
Actions that do not directly affect the listed species but that have the potential for indirect impacts such as increasing competitors for nest hollows.	No

Actions with the potential to introduce known plant diseases such as <i>Phytophthora</i> spp. to an area where the pathogen was not previously known	Possible
<p>Comment: Timber cutting and removal in the Target Area is likely to be carried out by machinery, which is likely to introduce plant diseases such as <i>Phytophthora spp</i> and invasive species such as plant weeds into the surrounding area. Mitigation via a Dieback and Weed Management Plan for timber operations is very highly recommended.</p>	

4.5. Mitigation Actions Required

The Black Cockatoo habitat assessment for the Target Area has determined that the action has the potential to cause significant impacts on Black Cockatoos. The possibility for mitigation must therefore be considered under the EPBC Act (Commonwealth of Australia 2012).

4.5.1. Degradation of a community that contains breeding habitat

The potential for degradation of a community that contains potential breeding habitat could be mitigated by proposing the retention of all habitat trees >50cm DBH within the Target Area. This is not considered realistic, due to their large number. All 35 very large habitat trees (>100cm DBH) within the Target Area could be proposed for retention.

4.5.2. Removal and/or degradation of quality foraging habitat

Mitigation against the removal and/or degradation of quality foraging habitat could be achieved by removing only the northern half of the Target Area, and not removing the southern half of the Target Area dominated by Marri *C. calophylla*. This approach would however retain impacts on potential Black Cockatoo breeding habitats, as the northern half of the Target Area tends to harbour the majority of large and very large habitat trees for Karri *E. diversicolor*.

4.5.3. Introduction of invasive species, diseases and weeds.

4.5.3. Mitigation against breeding, foraging or night roosting habitat disturbance and degradation through introduction of invasive species, diseases and weeds could be achieved via a Management Plan for Dieback and Weeds. This should be developed and implemented during timber harvesting for the Target Area.

4.6. Summary of Requirement for Federal Referral Under EPBC Act Black Cockatoo Referral Guidelines (Commonwealth of Australia 2012)

Have the impact avoidance and impact mitigation options been reviewed as appropriate for the Action?	Yes
What is the residual risk that the Action will result in an impact on Black Cockatoos?	<p>Determined as High Risk.</p> <p>6.7 hectares (more than 1 hectare) of quality foraging habitat is proposed for removal.</p> <p>1123 trees over 22.5 hectares that provide the potential for high quality Black Cockatoo breeding habitat are proposed for removal.</p>
Is Referral under the EPBC Act for significant impact on Black Cockatoos determined to be required?	Yes
<p>Comment:</p> <p>Referral is recommended, due to the number and area of trees impacted and their provision or potential for provision of quality foraging and breeding habitat for Black Cockatoos. It is however noted that modest evidence of current use by Black Cockatoos during the period of survey was obtained.</p>	

5. Targeted Assessment – Phascogale (*Phascogale tapoatafa wambenger*)

5.1. Rationale

Within Western Australia, Phascogales (*Phascogale tapoatafa wambenger*) are considered specially protected species - species of special conservation interest as these are conservation dependent - under the WA Biodiversity Conservation Act 2016. The species is not listed as protected under the Federal EPBC Act (1999).

The proposed removal of vegetation within the Target Area at The Lot will impact 22.5 hectares of vegetation. This vegetation, per desktop assessment in section 2 and as described in sections 3 and 4, comprises native forests of Karri *E. diversicolor* with a component of Jarrah *E. marginata* – Marri *C. calophylla* at the highest point, with the majority in pristine condition. The approval for removal of vegetation from the Target Area has been determined as dependent on lack of significant impact on Phascogales (*P. t. wambenger*). The purpose of this assessment was therefore to determine whether Phascogales *P. t. wambenger* utilise the Target Area.

Phascogale (*P. t. wambenger*) is a small nocturnal and arboreal marsupial that has a limited distribution to the south west corner of Western Australia, and is predominantly insectivorous and carnivorous with a conspicuous brush tail (Department of Environment and Conservation 2012). Nesting occurs within dens in tree hollows above ground, and female home ranges are of the order of 20-70 hectares in size (Department of Environment and Conservation 2012). Breeding occurs in winter (May-July) (Department of Environment and Conservation 2012).

5.2. Methodology

The Target Area was assessed at the Lot for the presence of Phascogale *P. t. wambenger* via observation of faunal tracks and signs, via spotlight surveys and via trail cameras.

During site assessment for habitat trees per section 4, the Target Area was also assessed for fauna, including tracks, scat and signs such as scratch markings on trees. The routes taken during assessment were recorded via a Garmin GPSMap64. The total area walked during assessments is shown in Figure 5.1. Spotlight surveys were carried out on the evenings of 11th, 12th, 13th and 14th November 2022. All spotlight surveys commenced at the main residence at the Lot at approximately 8pm (1.5 hours after dark) and lasted approximately 2 hours. On 11th and 13th November 2022, spotlighting targeted the boundary firebreak to the north and east sides of the Target Area, returning from the south east corner of the Target area, with a total return distance of 1.6km. On 12th and 14th November 2022, spotlighting targeted the central track running north-south, and boundary firebreak along the south of the Target Area, with total return distance of 1.9km. Tracks for spotlight surveys can be seen in Figures 3.1 and 5.1. Due to the density of understory vegetation and leaf litter resulting in high likelihood of disturbance, spotlighting was not carried out away from firebreaks and main track. Particular attention was paid during spotlighting to larger trees with potential nest hollows. A high-power LED torch with beam length >100m was used for spotlight surveys.

Trail cameras were placed on the afternoon of 10th November 2022 into selected locations within the south side of the Target Area (see Figure 5.1). Each camera was attached at about 2m above ground, orientated in portrait format, and aimed up a focal tree trunk and into the canopy so as to maximise the area of tree trunk imaged

and thus detection of the target fauna. Each trail camera was no-glow, and set to video (10 second) + subsequent photo mode, with a 30 second subsequent trigger delay, and maximal sensitivity. Two camera brands were used: one Ltl Acorn 5610 and a further four Nextech QC8043. Trail cameras were retrieved on the morning of 15th November 2022, resulting in 5 nights of recording by 5 trail cameras. A typical trail camera installation can be seen in Figure 3.2. It was noted that lack of available trail cameras at the period of survey limited the number of trail cameras that could be installed on site.

5.3. Results

The fauna tracks, scats and markings assessment did not detect any evidence for the presence of Phascogale *P. t. wambenger*. Numerous faunal trackways through the Target Area were observed at ground level, but scat located along these indicated the presence either of Western Grey Kangaroo *Macropus fuliginosus* and Fox *Vulpes vulpes*, in particular at the northern and eastern firebreaks along the Target Area adjacent pastureland at the Lot (Figure 3.1). The spotlight survey of the canopy also did not detect any evidence for Phascogale *P. t. wambenger*, although there were numerous observations of Western Grey Kangaroo *Macropus fuliginosus*.

The trail camera assessment resulted in images from 4 of 5 cameras, with the Ltl Acorn noted to have ceased imaging during survey at halfway point due to shortened camera battery life (likely due to high recording levels of non-target species such as birds). No trail cameras other than NT3 showed images of interest (images are available on request).

Trail camera NT3 showed a single video and image of interest from 11th November 2022 at 19.28. The 10 second video (available on request) shows movement caused by a small arboreal animal hidden within branches adjacent a Karri *E. diversicolor* trunk, at approximately 3m above ground. The photo taken subsequently to the video (Figure 5.2) shows a small arboreal animal with small pointed face and blurred brush tail leaping towards the camera which was fixed at approximately 2m above ground level. The image was identified as Phascogale *P. t. wambenger*. No alternative fauna were considered feasible as alternatives that could have generated this image. The fauna record has been reported to DCBA.

5.4. Summary

Phascogale *P. t. wambenger* was detected in the Target Area by a single trail camera detection, at the location mapped for NT3 (Figure 5.1). It is thus inferred that Phascogale *P. t. wambenger* is present within at least part of the Target Area. It was noted that the detection was on the trail camera located in the south west of the Target Area both near to the stream and furthest from human influence, which is highest to north and east of the Target Area (Figure 3.1). The absence of other evidence of Phascogale *P. t. wambenger* in the Target Area may be due both to the known difficulty in detecting arboreal marsupials e.g. by spotlighting, the low density or absence of the target fauna across all or part of the Target Area, low density of trail cameras that were available for use in the survey period, and possible influence of Fox *Vulpes vulpes* which may deter native fauna activity away from tracks and firebreaks and/or result in faunal movement being focussed higher in the canopy where assessment is difficult. Detailed determination of the extent of habitat use by Phascogale *P. t. wambenger* within the Target Area would require extended trail camera surveys over multiple seasons, which proved beyond the scope of the current assessment. Given the size of the known home range of Phascogale *P. t.*

wambenger at >20 hectares, the possibility that the whole Target Area is within the home range of the detected individual cannot be disproven based on the current data. Site assessment indicated that suitable nesting holes and hollows were present within the Target Area.

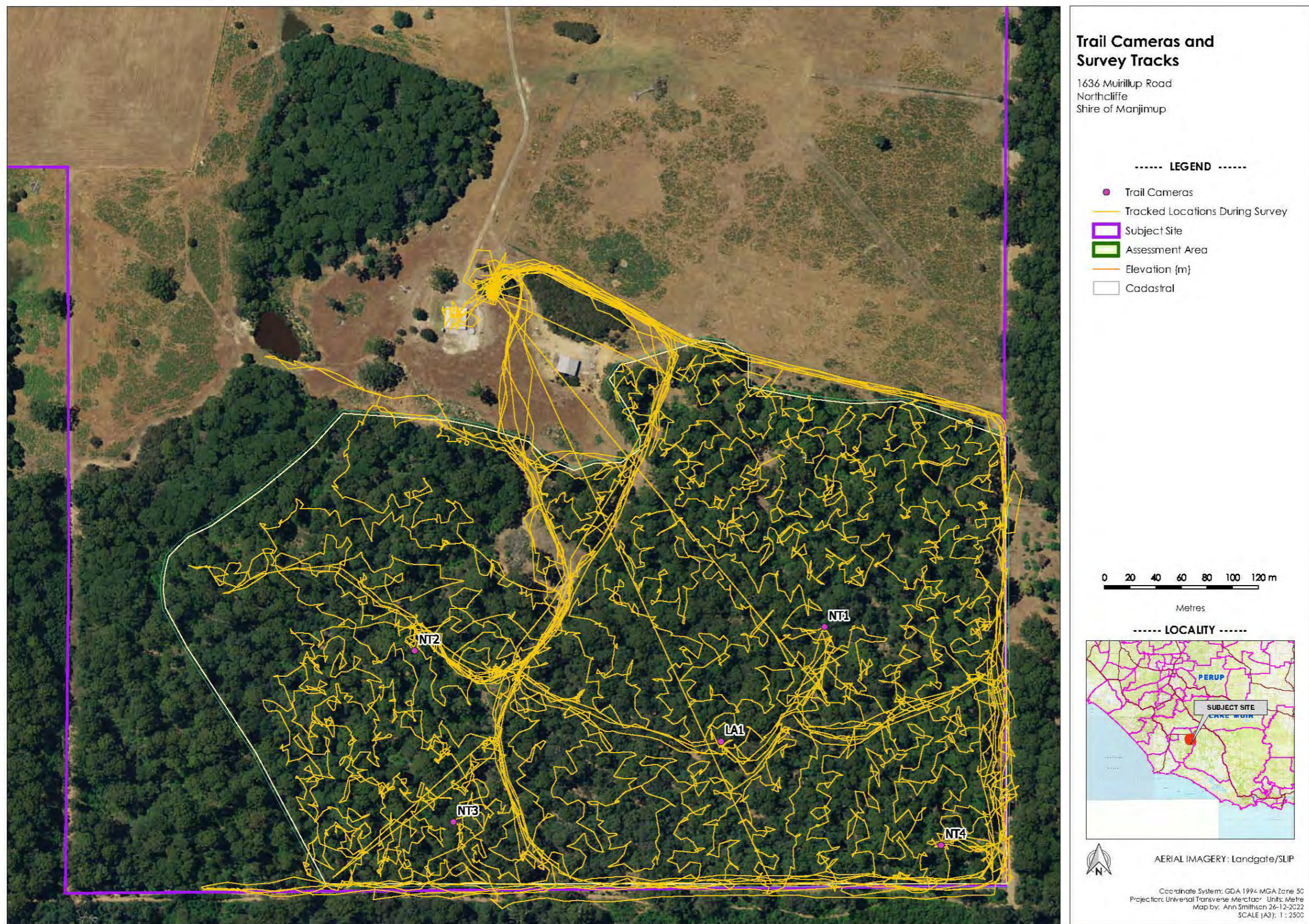


Figure 5.1 Location of trail cameras and routes taken during assessments for faunal tracks and signs

The tracked locations (yellow) show all routes walked from 11th to 15th November 2022. Routes used during spotlighting correspond to northern, eastern and southern firebreaks, and the main north-south track.

Figure 5.2 Image recorded by trail camera NT3 on 11/11/2022 identified as Phascogale P. t. wambenger



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Appendix 1. Habitat tree data collected for the Target Area at 1636 Muirillup Road, Northcliffe
 Feature code: F: nut chew feed signs; H - basal hollow; M: multistem; N - nest holes

Waypoint	Species	Longitude	Latitude	Elevation	DBH	Class	Features
3613	Karri	116.269535	-34.64404103	129.204865	67	50	
3614	Karri	116.269789	-34.64421504	130.607727	104	100	
3615	Karri	116.269815	-34.64441897	131.928726	88	80	
3616	Karri	116.270037	-34.64429903	132.963898	84	80	N
3618	Karri	116.270322	-34.64420197	134.930725	85	80	
3619	Karri	116.270269	-34.64430003	135.211136	50	50	
3620	Karri	116.270523	-34.64413801	137.361008	77	50	
3621	Karri	116.270409	-34.64428201	135.121979	79	50	
3622	Karri	116.270442	-34.64434496	135.252441	71	50	
3623	Karri	116.270368	-34.64431998	134.406296	58	50	
3624	Karri	116.270334	-34.64438897	133.969528	53	50	
3625	Karri	116.270284	-34.64442702	132.761719	87	80	
3626	Karri	116.270209	-34.64444504	132.717667	85	80	
3627	Karri	116.270241	-34.64456398	132.887894	65	50	
3628	Karri	116.270145	-34.64454797	131.153809	84	80	
3629	Karri	116.269906	-34.64441604	131.401321	71	50	
3630	Karri	116.269844	-34.64455602	130.054169	83	80	
3631	Karri	116.269884	-34.64463498	130.787277	58	50	
3632	Karri	116.270127	-34.64466004	132.12204	123	100	N
3633	Karri	116.270657	-34.64400499	138.185455	81	80	
3634	Karri	116.270586	-34.64395101	139.231918	66	50	
3636	Karri	116.270652	-34.643905	138.65715	55	50	
3637	Karri	116.270642	-34.64386703	139.942139	77	50	
3638	Karri	116.270481	-34.64388798	138.444092	71	50	
3639	Karri	116.270541	-34.64379896	138.042191	80	80	
3640	Karri	116.270553	-34.64378798	139.483978	74	50	
3641	Karri	116.270512	-34.64372696	139.514709	66	50	
3642	Karri	116.270616	-34.64370903	140.005371	71	50	M
3643	Karri	116.270373	-34.64369101	138.582169	82	80	
3644	Karri	116.270442	-34.64354097	141.02298	96	80	
3645	Karri	116.270497	-34.64356	140.261414	83	80	
3646	Karri	116.270646	-34.64351901	141.497437	91	80	
3647	Karri	116.270933	-34.64353502	132.998962	83	80	
3648	Karri	116.271016	-34.64362898	134.878021	75	50	
3649	Karri	116.271033	-34.64351499	136.270782	110	100	
3650	Karri	116.271144	-34.64350702	137.53067	74	50	
3651	Karri	116.271167	-34.64344399	137.672836	93	80	
3652	Karri	116.271251	-34.64341499	138.678375	96	80	
3653	Karri	116.271367	-34.64345698	139.161652	116	100	
3654	Karri	116.27124	-34.64348003	138.48732	64	50	
3655	Karri	116.271107	-34.643705	136.876465	82	80	
3656	Karri	116.271227	-34.64364599	139.605453	72	50	M H
3657	Karri	116.271474	-34.64364901	143.050293	85	80	
3658	Karri	116.271447	-34.64376401	142.518906	70	50	
3659	Karri	116.271457	-34.64380198	142.33403	78	50	
3660	Karri	116.271491	-34.64396602	142.181549	84	80	
3661	Karri	116.271533	-34.64396199	143.194199	81	80	
3662	Karri	116.271647	-34.644035	144.252655	54	50	
3663	Stump	116.271688	-34.64397498	145.505859			H
3664	Karri	116.271733	-34.64395696	144.95694	60	50	
3665	Karri	116.271725	-34.64385202	145.454773	72	50	
3666	Karri	116.271549	-34.64371598	146.887817	58	50	
3667	Karri	116.271812	-34.64374398	148.113571	64	50	M
3668	Karri	116.271842	-34.64385596	147.246964	77	50	
3669	Karri	116.272024	-34.64372001	149.416	80	80	
3670	Karri	116.272062	-34.64382101	148.693985	70	50	
3671	Karri	116.271964	-34.64390399	148.078079	78	50	H

3672	Karri	116.271943	-34.64385504	148.073715	58	50
3673	Karri	116.271944	-34.64403299	147.479126	65	50
3674	Karri	116.271796	-34.64404296	146.205475	53	50
3675	Karri	116.271849	-34.64408596	146.739212	59	50
3676	Karri	116.271852	-34.643978	147.626266	74	50
3677	Karri	116.271971	-34.644108	148.271729	79	50
3678	Karri	116.272123	-34.64414799	149.35524	90	80
3679	Karri	116.272143	-34.64406199	149.965881	66	50
3680	Karri	116.272011	-34.64398999	150.197021	67	50
3681	Karri	116.272195	-34.64396903	152.358704	81	80
3682	Karri	116.272382	-34.643805	152.963196	92	80
3683	Karri	116.272386	-34.64391698	153.636948	69	50
3684	Karri	116.272271	-34.64398496	153.063065	74	50
3685	Karri	116.27232	-34.64408001	153.22403	57	50
3686	Karri	-116.27237	34.644151	152.800339	80	80
3687	Karri	116.272406	-34.64409904	153.33049	65	50
3688	Karri	116.272475	-34.64398404	154.889557	62	50
3689	Karri	116.272536	-34.64387096	155.32428	94	80
3690	Karri	116.272669	-34.64386602	156.408173	63	50
3691	Karri	116.272777	-34.64381397	156.584671	82	80
3692	Karri	116.272749	-34.64400801	155.561249	65	50
3693	Karri	116.272717	-34.64407297	155.71344	112	100
3694	Karri	116.272935	-34.64408596	155.72699	76	50
3695	Karri	116.272945	-34.643934	156.809586	95	80
3696	Allocasuarina	116.272809	-34.64382	157.07106	52	50
3697	Karri	116.272936	-34.64377298	157.651016	83	80
3698	Karri	116.272979	-34.64376099	158.223953	89	80
3699	Karri	116.273021	-34.64391304	157.883301	90	80
3700	Karri	116.273022	-34.64405503	157.505981	83	80
3701	Karri	116.273006	-34.644207	156.336761	65	50
3702	Karri	116.273201	-34.64418202	158.659866	87	80
3703	Karri	116.272961	-34.64420297	158.306519	110	100
3704	Karri	116.273391	-34.64417598	158.580704	59	50
3705	Karri	116.27332	-34.64407699	159.345245	63	50
3706	Karri	116.273173	-34.644108	158.325211	74	50
3707	Karri	116.273165	-34.64398596	157.67038	56	50
3708	Karri	116.273288	-34.64395797	158.187912	54	50
3709	Karri	116.273301	-34.64391698	158.038528	85	80
3710	Karri	116.273407	-34.64389896	158.517654	83	80
3711	Stump	116.273431	-34.64390097	158.553513		
3712	Karri	116.273418	-34.64394598	157.802536	61	50
3713	Stump	116.273482	-34.64407104	157.45784		
3714	Karri	116.273495	-34.64411203	157.501343	76	50
3715	Karri	116.273624	-34.64405796	157.58429	108	100
3716	Karri	116.273656	-34.64418604	158.070038	82	80
3717	Karri	116.273574	-34.64428998	157.858856	53	50
3718	Karri	116.273605	-34.644409	157.338623	73	50
3719	Karri	116.273471	-34.64431303	156.684235	56	50
3720	Karri	116.273403	-34.64450103	155.673569	96	80
3721	Karri	116.273478	-34.64449097	156.547318	65	50
3722	Karri	116.27351	-34.64451201	156.120392	84	80
3723	Karri	116.273635	-34.64460304	159.615997	100	100
3724	Karri	116.273692	-34.64467001	159.128708	85	80
3725	Karri	116.27356	-34.64472801	159.544312	78	50
3726	Karri	116.273487	-34.644798	159.264893	78	50
3727	Karri	116.273465	-34.64485701	159.882614	89	80
3728	Karri	116.273267	-34.64478602	159.529022	74	50
3729	Karri	116.273464	-34.64473003	159.977081	79	50
3730	Karri	116.273292	-34.64464797	159.37616	80	80
3731	Karri	116.273168	-34.644883	158.045975	80	80
3732	Karri	116.272974	-34.64483698	157.581573	80	80

3733	Karri	116.273084	-34.64477403	157.172958	80	80	
3734	Karri	116.273191	-34.64455401	157.700027	76	50	
3735	Karri	116.273226	-34.64456901	157.681854	74	50	
3736	Karri	116.273008	-34.644452	157.101898	95	80	
3737	Karri	116.273092	-34.644639	157.076202	72	50	
3738	Karri	116.272873	-34.64455602	155.692703	77	50	
3739	Karri	116.27287	-34.64459097	155.25351	92	80	
3740	Karri	116.272828	-34.64448301	154.914703	94	80	
3741	Karri	116.272848	-34.64438603	155.492432	83	80	
3742	Karri	116.272775	-34.64438796	154.566498	80	80	
3743	Karri	116.272863	-34.64432099	154.879318	90	80	
3744	Karri	116.272685	-34.64421697	156.08252	81	80	
3745	Karri	116.272555	-34.64424203	155.327057	75	50	
3746	Karri	116.272598	-34.64427103	155.618988	80	80	
3747	Karri	116.272589	-34.64436399	154.801682	94	80	
3748	Karri	116.272576	-34.64446499	154.728241	67	50	
3749	Karri	116.272532	-34.64457798	154.050262	81	80	
3750	Karri	116.272328	-34.64463204	152.326736	72	50	
3751	Karri	116.272443	-34.64473799	153.273163	82	80	
3752	Karri	116.272342	-34.64473598	152.850464	83	80	
3753	Karri	116.272095	-34.64466599	151.643509	70	50	
3754	Karri	116.272271	-34.64454504	153.734894	66	50	
3755	Karri	116.272345	-34.64446298	154.1745	84	80	
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3766	Karri	116.271922	-34.64455904	149.618713	81	80	
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3771	Karri	116.271791	-34.64421303	152.538742	57	50	
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3780	Karri	116.271184	-34.64427204	147.528458	58	50	
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3877	Karri	116.273401	-34.64574398	159.424911	64	50	
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4031	Karri	116.271476	-34.64605303	152.242432	50	50
4032	Jarrah	116.27141	-34.64620901	152.669769	54	50
4033	Marri	116.271449	-34.64626802	153.446396	65	50
4034	Marri	116.271502	-34.64628596	154.135605	57	50
4035	Marri	116.271391	-34.64619401	154.042114	71	50
4036	Marri	116.271172	-34.64613601	152.32489	51	50
4037	Karri	116.271152	-34.64605303	151.789963	61	50
4038	Karri	116.271412	-34.64605303	153.640945	66	50
4039	Marri	116.271121	-34.64615604	153.809387	62	50
4040	Marri	116.270956	-34.64611799	153.767334	53	50
4041	Karri	116.270943	-34.64598304	153.061737	52	50
4042	Marri	116.27085	-34.64602402	153.21608	59	50
4043	Marri	116.27081	-34.64598203	153.87294	66	50

4044	Marri	116.270858	-34.64592101	153.289139	73	50	
4045	Marri	116.270756	-34.64585102	152.783997	62	50	
4046	Karri	116.27072	-34.64584004	153.273331	67	50	
4047	Marri	116.270708	-34.64571498	152.067841	64	50	
4048	Marri	116.27074	-34.64572798	152.240677	72	50	
4049	Karri	116.270823	58	152.078979	59	50	
4050	Karri	116.270856	-34.64571004	152.459213	61	50	
4051	Karri	116.270812	-34.64565396	152.047668	59	50	
4052	Marri	116.270916	-34.64562496	151.696869	67	50	
4053	Karri	116.271	-34.64560803	152.270584	57	50	
4054	Marri	116.270997	-34.64556604	152.236557	71	50	
4055	Karri	116.270944	-34.64552002	151.931915	58	50	
4056	Karri	116.270923	-34.64550502	152.003372	79	50	
4057	Karri	116.270861	-34.64539102	151.463898	67	50	
4058	Karri	116.27072	-34.64535699	150.721909	66	50	
4059	Karri	116.270697	-34.64536202	150.406143	92	80	
4060	Karri	116.270689	-34.645315	150.505478	59	50	
4061	Karri	116.270562	-34.64526496	150.375732	71	50	
4062	Karri	116.270444	-34.64509296	149.075485	88	80	
4063	Karri	116.270441	-34.64519204	149.130524	95	80	
4064	Karri	116.270335	-34.64496396	147.235489	64	50	
4065	Taxandria	116.270266	-34.64493698	146.560471	66	50	
4066	Taxandria	116.270268	-34.64492599	146.950562	56	50	M
4067	Marri	116.270056	-34.64514099	147.100555	70	50	
4068	Karri	116.270249	-34.64531701	147.938797	120	100	M
4069	Karri	116.270325	-34.64538599	148.116959	87	80	
4070	Marri	116.270388	-34.64547702	147.183487	68	50	
4071	Marri	116.27036	-34.64559998	147.536621	84	80	
4072	Marri	116.270312	-34.64567299	147.346176	63	50	
4073	Karri	116.270208	-34.64565799	147.91449	60	50	
4074	Marri	116.270433	-34.64567701	147.030655	68	50	
4075	Karri	116.270526	-34.64558196	146.327591	67	50	
4076	Karri	116.270552	-34.64575203	146.714737	51	50	
4077	Marri	116.270601	-34.64599301	146.545044	73	50	
4078	Marri	116.270657	-34.64602101	146.967545	73	50	
4079	Marri	116.270307	-34.64591104	146.467575	78	50	
4080	Karri	116.270237	-34.64594699	147.271362	53	50	
4081	Karri	116.270198	-34.64583904	146.336334	60	50	
4082	Karri	116.270236	-34.64584298	146.27211	56	50	
4083	Marri	116.270215	-34.64580802	145.837646	60	50	
4084	Karri	116.270195	-34.64556998	146.377762	88	80	
4085	Karri	116.270046	-34.64540703	146.007629	53	50	
4086	Karri	116.270028	-34.64539899	146.189957	84	80	M
4087	Marri	116.269946	-34.645387	146.802719	59	50	
4088	Karri	116.26989	-34.64536403	146.591949	50	50	
4089	Marri	116.269751	-34.64541399	146.803253	78	50	F
4090	Karri	116.26979	-34.64547803	147.591522	62	50	
4091	Karri	116.269723	-34.645545	147.2173	86	80	
4092	Karri	116.269643	-34.64552203	147.958572	75	50	
4093	Allocasuarina	116.269717	-34.64560996	147.803467	76	50	
4094	Allocasuarina	116.26979	-34.64559101	147.000458	61	50	
4095	Marri	116.269636	-34.64560996	147.688126	124	100	
4096	Marri	116.269623	-34.64570803	147.79184	53	50	
4097	Marri	116.269731	-34.64573099	147.199356	57	50	
4098	Marri	116.269805	-34.64581297	147.297943	87	80	
4099	Marri	116.269843	-34.64588203	146.875412	57	50	M
4100	Marri	116.269908	-34.64582998	146.231354	53	50	
4101	Karri	116.269789	-34.64497796	145.203705	71	50	M
4102	Karri	116.269725	-34.64483002	142.548721	78	50	
4103	Karri	116.269372	-34.64407196	138.707077	80	80	
4104	Karri	116.269265	-34.64397096	138.558853	128	100	

4105	Karri	116.269089	-34.64391304	136.978546	120	100	
4106	Karri	116.269121	-34.64405897	135.15593	65	50	
4107	Karri	116.269061	-34.64403701	134.761871	62	50	
4108	Karri	116.268937	-34.644035	133.996185	57	50	
4109	Karri	116.268866	-34.64398798	133.582504	82	80	
4110	Karri	116.268881	-34.64393701	133.684586	65	50	
4111	Karri	116.268497	-34.643905	131.685684	120	100	
4112	Taxandria	116.268228	-34.643906	128.655914	86	80	
4113	Taxandria	116.268094	-34.64412401	126.983521	71	50	
4114	Karri	116.267983	-34.64431697	127.427818	62	50	
4115	Karri	116.268054	-34.64442903	128.16156	70	50	
4116	Karri	116.268454	-34.64443699	128.763962	88	80	
4117	Karri	116.268493	-34.64442501	128.398468	77	50	
4118	Karri	116.268533	-34.64449198	129.289383	77	50	
4119	Karri	116.268612	-34.64437304	128.681732	73	50	
4120	Karri	116.268807007 -3	4.644373041	130.529083	72	50	
4121	Karri	116.268752	-34.64428503	129.199646	83	80	
4122	Karri	116.268717	-34.64444697	130.097122	104	100	
4123	Karri	116.26868	-34.64457697	130.845932	56	50	
4124	Karri	116.268642	-34.64464101	131.441086	79	50	
4125	Karri	116.268872	-34.64460002	131.484024	82	80	
4126	Karri	116.268873	-34.64455602	130.906921	74	50	
4127	Karri	116.268971	-34.64453297	131.064316	76	50	
4128	Karri	116.268941	-34.64442903	130.80069	59	50	
4129	Karri	116.269013	-34.644452	131.40036	57	50	
4130	Karri	116.269154	-34.64460203	131.553574	72	50	
4131	Karri	116.269039	-34.64466004	132.373062	55	50	
4132	Karri	116.269129	-34.64476104	133.213638	69	50	
4133	Allocasuarina	116.269355	-34.64494804	135.969421	50	50	
4134	Karri	116.269814	-34.64484704	130.399704	76	50	
4135	Karri	116.269756	-34.64517804	134.600815	73	50	
4136	Karri	116.269653	-34.64510302	134.967697	62	50	
4137	Karri	116.269624	-34.64511903	135.080307	77	50	
4138	Karri	116.269555	-34.64510101	134.68219	88	80	
4139	Karri	116.269295	-34.64490102	134.191345	71	50	
4140	Allocasuarina	116.269286	-34.64497603	134.678619	53	50	
4141	Allocasuarina	116.269227	-34.64496497	135.261307	57	50	
4142	Karri	116.269078	-34.64474302	133.408005	80	80	
4143	Karri	116.268949	-34.64472902	133.350906	63	50	
4144	Karri	116.268905	-34.64471703	133.485748	66	50	
4145	Karri	116.268919	-34.64475802	132.976562	64	50	
4146	Karri	116.26891	-34.64479398	134.971786	53	50	
4147	Karri	116.268806	-34.64477202	135.211014	67	50	
4148	Karri	116.268724	-34.64478401	135.817841	51	50	
4149	Karri	116.268673	-34.64472097	135.026062	60	50	
4150	Karri	116.268629	-34.64466398	133.643723	51	50	
4151	Karri	116.268557	-34.64462701	133.496948	55	50	
4152	Karri	116.268569	-34.64454697	132.872513	61	50	
4153	Karri	116.268501	-34.64453397	133.042099	51	50	
4155	Karri	116.268368	-34.64461796	133.580826	61	50	
4156	Karri	116.268317	-34.64471896	133.831726	86	80	
4157	Karri	116.268145	-34.64458401	132.030746	82	80	
4158	Karri	116.268038	-34.644611	131.63382	54	50	
4159	Karri	116.267997	-34.644509	131.365463	75	50	
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4161	Karri	116.267669	-34.644466	129.991943	103	100	
4162	Karri	116.267494	-34.64458996	130.22728	95	80	
4163	Karri	116.267403	-34.64460396	130.014496	86	80	
4164	Karri	116.267166	-34.644913	131.207245	96	80	
4165	Karri	116.2671	-34.64487	129.369156	69	50	
4166	Karri	116.26705	-34.644942	130.029572	STUMP	100	N

4167	Karri	116.26708	-34.64496204	129.806793	109	100
4168	Karri	116.26684	-34.64488601	128.846481	77	50
4169	Karri	116.26674	-34.64488903	128.985275	64	50
4170	Karri	116.266892	-34.64489699	130.180893	80	80
4171	Karri	116.267179	-34.64502398	132.666641	92	80
4172	Karri	116.26739	-34.64493899	132.887726	97	80
4173	Karri	116.267418	-34.64476699	132.133453	88	80
4174	Karri	116.267466	-34.64487998	133.077469	86	80
4175	Karri	116.267579	-34.64490797	133.754639	83	80
4176	Karri	116.267778	-34.64484	135.147034	68	50
4177	Karri	116.267895	-34.64481804	136.545731	78	50
4178	Karri	116.267919	-34.64467596	136.166367	55	50
4179	Karri	116.268002	-34.64476498	137.233139	70	50
4180	Karri	116.268101	-34.64474302	137.242203	97	80
4181	Karri	116.268038	-34.64489398	140.245773	93	80
4182	Karri	116.268212	-34.64480001	139.500702	83	80
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4184	Karri	116.268422	-34.64493404	141.432312	58	50
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4186	Karri	116.268603	-34.644884	141.857269	88	80
4187	Karri	116.268629	-34.64512104	145.461517	97	80
4188	Karri	116.268471	-34.64515599	145.363586	71	50
4189	Karri	116.268461	-34.64502398	143.332214	80	80
4190	Karri	116.268501	-34.64499699	142.92247	50	50
4191	Karri	116.268563	-34.64501099	144.207565	97	80
4192	Karri	116.268319	-34.64504602	143.172867	64	50
4193	Karri	116.268205	-34.64497897	142.943054	64	50
4194	Karri	116.268222	-34.64496899	142.94191	57	50
4195	Karri	116.268454	-34.64520302	145.455795	77	50
4196	Marri	116.268617	-34.64526496	147.338165	55	50
4197	Karri	116.268671	-34.64523696	147.882004	85	80
4198	Karri	116.268746	-34.64534601	148.496201	89	80
4199	Karri	116.268963	-34.64528197	148.617889	73	50
4200	Allocasuarina	116.268968	-34.64519598	147.70665	57	50
4201	Karri	116.269115	-34.6452	147.936783	112	100
4202	Karri	116.269238	-34.645071	146.468018	87	80
4203	Karri	116.269164	-34.64529203	148.38475	80	80
4204	Karri	116.269462	-34.645243	147.807251	86	80
4205	Karri	116.269492	-34.64527703	148.090286	68	50
4206	Karri	116.269616	-34.64536797	148.217575	90	80
4207	Karri	116.269811	-34.645387	147.107834	66	50
4208	Allocasuarina	116.269534	-34.64554299	149.864243	60	50
4209	Karri	116.269433	-34.64554098	149.823349	67	50
4210	Karri	116.269365	-34.64555204	149.295807	63	50
4211	Karri	116.269469	-34.64543603	148.702454	55	50
4212	Karri	116.269396	-34.64539899	148.172745	51	50
4213	Karri	116.269367	-34.64535498	148.109222	64	50
4214	Karri	116.269256	-34.64530704	148.124817	69	50
4215	Karri	116.269036	-34.64537099	148.106461	69	50
4216	Karri	116.269052	-34.64530704	147.590698	82	80
4217	Karri	116.268887	-34.64539798	147.774368	82	80
4218	Karri	116.26903	-34.64561398	148.677307	69	50
4219	Karri	116.26917	-34.64548901	148.063736	64	50
4220	Karri	116.269305	-34.64552103	148.176071	71	50
4221	Karri	116.269234	-34.64558003	147.618347	66	50
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4224	Karri	116.269452	-34.64569897	147.493729	72	50
4225	Karri	116.269431	-34.645804	147.653061	63	50
4226	Karri	116.269403	-34.64581397	147.45636	80	80
4227	Karri	116.26913	-34.64589201	147.898758	82	80

4228	Karri	116.269046	-34.64577299	147.337906	71	50	
4229	Karri	116.269026	-34.64575396	147.107162	73	50	
4230	Karri	116.268907	-34.64576896	146.924973	55	50	
4231	Karri	116.268889	-34.645805	146.452988	62	50	
4232	Karri	116.268922	-34.64586804	146.441437	78	50	
4233	Karri	116.268844	-34.64568003	146.202942	62	50	
4234	Karri	116.26882	-34.64556201	146.184601	78	50	
4235	Karri	116.268744	-34.645545	145.128006	52	50	
4236	Karri	116.268665	-34.64546403	144.794327	62	50	
4237	Karri	116.268701	-34.64541902	144.144135	53	50	
4238	Karri	116.268611	-34.64533897	143.102097	97	80	
4239	Karri	116.268505	-34.64539102	142.411743	68	50	
4240	Karri	116.26851	-34.64531701	142.294586	78	50	
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4243	Karri	116.268219	-34.64526102	140.90593	62	50	
4244	Karri	116.268197	-34.645142	139.466309	52	50	
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4246	Karri	116.268149	-34.645114	139.894547	67	50	
4247	Karri	116.268056	-34.64511098	138.971054	64	50	
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4250	Karri	116.267842	-34.64497704	136.527252	58	50	
4251	Karri	116.267709	-34.64487202	134.940155	55	50	
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4253	Karri	116.267657	-34.64504904	136.24675	63	50	
4254	Karri	116.267674	-34.64511199	138.238937	62	50	
4255	Karri	116.267739	-34.64516899	138.419525	52	50	
4256	Karri	116.26789	-34.64516404	139.257248	62	50	
4257	Karri	116.268036	-34.64528399	141.192657	72	50	
4258	Karri	116.268069	-34.64530997	142.11882	67	50	
4259	Karri	116.26815	-34.64542002	142.056534	75	50	
4260	Karri	116.268353	-34.64556201	143.744919	92	80	
4261	Marri	116.268305	-34.64556696	144.472	128	100	M
4262	Marri	116.268355	-34.64558003	143.82988	69	50	M
4263	Karri	116.268468	-34.64546202	144.243988	79	50	
4264	Karri	116.268566	-34.64556403	144.130859	66	50	
4265	Karri	116.268647	-34.64587801	145.074081	84	80	
4266	Marri	116.268565	-34.64587902	144.344177	55	50	
4267	Karri	116.268661	-34.646006	144.655792	62	50	
4268	Karri	116.268613	-34.64594297	144.54631	73	50	
4269	Karri	116.268616	-34.64604397	144.003174	84	80	
4270	Karri	116.268789	-34.64612897	144.081833	53	50	
4271	Karri	116.268885	-34.64610902	144.121918	61	50	
4272	Karri	116.268885	-34.64599997	144.167938	63	50	
4273	Karri	116.268966	-34.64610801	143.593567	62	50	
4274	Karri	116.269038	-34.64617297	143.983398	68	50	
4275	Karri	116.269115	-34.64607197	143.325653	79	50	
4276	Karri	116.269338	-34.64615998	143.702179	82	80	
4277	Karri	116.269264	-34.64619099	143.609055	61	50	
4280	Karri	116.269159	-34.64625402	141.561188	51	50	
4281	Allocasuarina	116.269161	-34.64637799	141.027512	57	50	
4282	Karri	116.269351	-34.64655602	141.495377	72	50	
4283	Marri	116.269412	-34.646609	141.416641	65	50	
4284	Marri	116.269358	-34.64665099	140.938766	55	50	
4285	Marri	116.269487	-34.64659198	141.643326	65	50	
4286	Karri	116.269551	-34.64665703	141.035934	66	50	
4287	Karri	116.269433	-34.64682399	139.918228	87	80	
4288	Karri	116.269391	-34.64694796	138.145264	83	80	
4289	Karri	116.269479	-34.64698099	138.305801	55	50	
4290	Marri	116.269588	-34.64692701	139.220825	92	80	

4291	Karri	116.269606	-34.64691804	138.552307	83	80
4292	Karri	116.269578	-34.64716698	136.523743	93	80
4293	Karri	116.269351	-34.64709498	135.502335	79	50
4294	Allocasuarina	116.269221	-34.64699297	137.397583	57	50
4295	Karri	116.269115	-34.64697302	136.704483	63	50
4296	Marri	116.269162	-34.64692801	136.853149	77	50
4297	Karri	116.269199	-34.64692198	137.641357	56	50
4298	Karri	116.269136	-34.64679298	137.767715	72	50
4299	Karri	116.269047	-34.64683204	139.000778	75	50
4300	Allocasuarina	116.269235	-34.64664898	139.934326	60	50
4301	Marri	116.269142	-34.64665996	140.755798	68	50
4302	Karri	116.269279	-34.646653	140.998032	80	80
4303	Karri	116.269143	-34.64650498	142.049042	78	50
4304	Karri	116.269071	-34.64658402	140.737122	62	50
4305	Karri	116.269068	-34.64647598	141.347321	78	50
4306	Karri	116.26897	-34.64644404	141.094711	72	50
4307	Karri	116.269028	-34.64645703	142.255005	55	50
4308	Karri	116.269144	-34.64629803	142.947861	64	50
4309	Karri	116.269096	-34.64636098	143.167862	54	50
4310	Karri	116.268954	-34.64622603	143.558044	71	50
4311	Karri	116.268849	-34.64629903	152.339401	83	80
4312	Karri	116.268948	-34.64615696	153.035278	78	50
4313	Karri	116.268803	-34.64616199	152.761215	83	80
4314	Karri	116.268726	-34.64619099	151.365768	70	50
4316	Karri	116.268466	-34.64599502	150.825745	90	80
4317	Karri	116.268499	-34.64587097	150.78479	72	50
4318	Karri	116.268482	-34.645861	151.791122	52	50
4319	Karri	116.268482	-34.64569503	151.165375	88	80
4320	Karri	116.268377	-34.64583602	149.912415	66	50
4321	Karri	116.268356	-34.64595102	149.673553	63	50
4322	Karri	116.268332	-34.64610499	149.616486	82	80
4323	Karri	116.268459	-34.64608102	151.187698	79	50
4324	Karri	116.268323	-34.64614204	148.609299	77	50
4325	Karri	116.268357	-34.64625604	149.545593	61	50
4326	Karri	116.268341	-34.64630197	149.264694	63	50
4327	Karri	116.268275	-34.64621304	149.051788	50	50
4328	Karri	116.268111	-34.64626601	149.135666	68	50
4329	Karri	116.26822	-34.646336	149.636765	58	50
4330	Karri	116.26839	-34.64643197	149.384811	70	50
4331	Karri	116.268531	-34.64637699	151.022598	82	80
4332	Karri	116.268604	-34.646409	149.866089	58	50
4333	Karri	116.268624	-34.64647396	149.853607	62	50
4334	Karri	116.268507	-34.646495	148.928329	55	50
4335	Karri	116.268746	-34.64655904	150.723297	59	50
4337	Karri	116.26892	-34.64654597	152.369553	98	80
4338	Karri	116.268714	-34.64655703	150.672989	53	50
4339	Karri	116.268648	-34.646652	149.563858	76	50
4340	Karri	116.268762	-34.64671	149.759308	72	50
4341	Karri	116.268893	-34.64675803	149.705795	74	50
4342	Karri	116.268873	-34.64686599	148.733292	55	50
4343	Karri	116.26877	-34.64676004	149.098312	53	50
4344	Karri	116.268725	-34.64678099	148.119186	57	50
4345	Karri	116.268624	-34.646869	147.809586	58	50
4346	Marri	116.268587	-34.64697001	146.887848	58	50
4347	Karri	116.268578	-34.64701502	145.859116	53	50
4348	Karri	116.26851	-34.64704997	145.500412	65	50
4349	Karri	116.268651	-34.64706799	145.915573	51	50
4350	Allocasuarina	116.268774	-34.64710202	146.153992	53	50
4351	Karri	116.268754	-34.64701502	146.410858	55	50
4352	Karri	116.268793	-34.64708098	146.564651	57	50
4353	Karri	116.268932	-34.64699398	147.629776	83	80

4354	Karri	116.269086	-34.64704603	145.920959	78	50	
4355	Karri	116.268407	-34.64698602	142.079559	84	80	
4356	Karri	116.268387	-34.647013	140.125946	68	50	
4357	Karri	116.268339	-34.64702901	139.294876	63	50	
4358	Karri	116.268493	-34.64688996	141.474838	52	50	
4359	Karri	116.26858	-34.64668502	142.789597	53	50	
4360	Karri	116.268623	-34.64682399	142.100143	65	50	
4361	Karri	116.268338	-34.64687596	139.336929	96	80	
4362	Karri	116.268334	-34.64691401	138.493973	52	50	
4363	Karri	116.268445	-34.64664504	141.751068	69	50	
4364	Karri	116.268425	-34.64660799	140.964584	54	50	
4365	Karri	116.268403	-34.64644999	142.202377	59	50	
4366	Karri	116.268392	-34.64651202	141.412659	64	50	
4367	Karri	116.268358	-34.64651001	141.046829	83	80	
4368	Karri	116.268135	-34.64636802	140.472885	59	50	
4369	Karri	116.268038	-34.64659601	139.885345	113	100	
4370	Karri	116.268061	-34.64634497	139.91156	77	50	
4371	Karri	116.268036	-34.64627196	139.978806	77	50	
4372	Karri	116.268132	-34.64610902	141.223343	64	50	
4373	Karri	116.268143	-34.64611103	141.064087	73	50	
4374	Karri	116.267973	-34.64597801	139.321716	87	80	
4375	Marri	116.267966	-34.64611597	139.331406	50	50	
4376	Marri	116.267919	-34.64606501	139.846191	186	100	N H
4377	Karri	116.268	-34.645818	140.302094	84	80	
4378	Karri	116.267902	-34.64586401	139.890442	69	50	
4379	Marri	116.268001	-34.64573602	140.02507	56	50	
4380	Karri	116.268081	-34.64582403	141.463028	83	80	
4381	Karri	116.268124	-34.64585404	142.95372	63	50	M
4382	Karri	116.26826	-34.64592604	142.605164	51	50	
4383	Karri	116.268395	-34.64571004	142.760452	55	50	
4384	Karri	116.268202	-34.64555497	141.25798	53	50	
4385	Marri	116.267986	-34.64568196	141.110764	52	50	
4386	Karri	116.267977	-34.64567902	141.391357	62	50	
4387	Karri	116.268068	-34.64558104	141.541519	56	50	
4388	Karri	116.268076	-34.645488	141.069443	65	50	
4389	Marri	116.26788	-34.64554198	140.172501	75	50	
4390	Karri	116.267903	-34.64555799	140.076691	57	50	
4391	Stump	116.267848	-34.64553402	140.550903			
4392	Karri	116.267858	-34.645617	140.171295	66	50	
4393	Karri	116.267857	-34.64569302	140.055145	60	50	
4394	Stump	116.267702	-34.64556302	140.799759			N
4395	Karri	116.267684	-34.64558104	140.612289	63	50	
4396	Karri	116.26786	-34.64570803	141.883728	80	80	
4397	Marri	116.267863	-34.64579796	141.546646	56	50	
4398	Marri	116.267634	-34.645847	140.232376	80	80	
4399	Karri	116.267658	-34.64602101	138.791275	91	80	
4400	Karri	116.267806	-34.64599603	140.114075	89	80	
4401	Marri	116.267769	-34.646078	139.59198	51	50	
4402	Karri	116.267748	-34.64620499	138.312302	73	50	
4403	Stump	116.267657	-34.64608898	138.765884			
4404	Allocasuarina	116.267887	-34.64622603	139.25914	57	50	
4405	Karri	116.267885	-34.64609896	141.049347	88	80	
4406	Karri	116.267922	-34.64636902	139.948166	93	80	
4407	Karri	116.267758	-34.64630297	138.513107	54	50	
4408	Karri	116.267825	-34.64641797	138.372971	65	50	
4409	Karri	116.267776	-34.64652199	136.948959	79	50	
4410	Karri	116.267819	-34.64660204	137.408691	75	50	
4411	Allocasuarina	116.267831	-34.64667597	137.51828	55	50	
4412	Karri	116.267949	-34.64660699	138.544205	89	80	
4413	Karri	116.268078	-34.64668301	138.819641	85	80	
4414	Karri	116.268265	-34.64667798	140.282806	64	50	

4415	Karri	116.268184	-34.64674202	139.175339	69	50	
4416	Karri	116.268	-34.64676599	137.69223	74	50	
4417	Karri	116.268026	-34.64690102	137.56189	63	50	
4418	Karri	116.268168	-34.64691301	138.732269	68	50	
4419	Karri	116.268274	-34.64680497	138.928894	84	80	
4420	Karri	116.267887	-34.64677999	137.263687	81	80	
4421	Allocasuarina	116.267876	-34.64681704	136.250809	73	50	
4422	Karri	116.267937	-34.64702499	136.092392	67	50	
4423	Karri	116.267717	-34.646997	135.15062	56	50	
4424	Karri	116.267748	-34.647069	134.279388	90	80	
4425	Marri	116.268053	-34.64713404	137.196777	68	50	
4426	Karri	116.268111	-34.64705902	137.831757	64	50	
4427	Karri	116.268187	-34.64695098	139.338303	69	50	
4428	Karri	116.267693	-34.64662098	138.550446	53	50	
4429	Karri	116.267644	-34.646524	139.6642	56	50	
4430	Karri	116.267616	-34.64637699	140.527527	108	100	
4431	Karri	116.267545	-34.64628797	141.179047	79	50	
4432	Karri	116.267557	-34.64615797	141.651062	88	80	
4433	Karri	116.267547	-34.64601899	143.254852	62	50	
4434	Karri	116.267385	-34.64587399	142.270767	78	50	
4435	Karri	116.267454	-34.64567601	144.468689	91	80	
4436	Karri	116.267714	-34.645602	144.413803	59	50	
4437	Allocasuarina	116.267794	-34.64556796	145.033707	64	50	
4438	Marri	116.267795	-34.64545799	145.25531	50	50	
4439	Karri	116.267721	-34.64545003	143.437775	88	80	
4440	Karri	116.267606	-34.645344	143.59758	78	50	H
4441	Marri	116.269621	-34.64592403	152.455673	111	100	
4442	Karri	116.269732	-34.64593702	151.575546	63	50	
4443	Karri	116.269676	-34.64582303	151.516159	53	50	
4444	Karri	116.26955	-34.64584096	151.437241	77	50	
4445	Karri	116.269585	-34.64592202	150.618195	89	80	
4446	Karri	116.269513	-34.64584901	151.149414	76	50	
4447	Marri	116.269459	-34.64588103	150.311081	60	50	
4448	Karri	116.269465	-34.64591799	150.804947	66	50	
4449	Marri	116.269719	-34.64598698	149.285675	77	50	
4450	Marri	116.269455	-34.646163	147.760727	63	50	
4451	Allocasuarina	116.269497	-34.646178	148.326309	57	50	
4452	Karri	116.269637	-34.64631001	147.15596	89	80	
4453	Karri	116.269687	-34.64616803	147.373901	86	80	
4454	Karri	116.269725	-34.64621597	147.552963	50	50	
4455	Marri	116.269776	-34.64614296	147.202271	53	50	
4456	Marri	116.269632	-34.64622402	146.915131	58	50	
4457	Karri	116.269536	-34.64634798	146.923264	80	80	
4458	Marri	116.269597	-34.64639098	146.266159	53	50	
4459	Karri	116.26953	-34.64641797	146.118896	62	50	
4460	Karri	116.269684	-34.64658704	145.587051	68	50	
4461	Karri	116.269673	-34.64657304	144.939514	63	50	
4462	Karri	116.269767	-34.64668603	145.092499	54	50	
4463	Karri	116.269655	-34.64692298	144.026718	76	50	
4464	Karri	116.269749	-34.64691703	144.110336	81	80	
4465	Karri	116.269809	-34.64693698	144.077118	62	50	
4466	Karri	116.269972	-34.64712398	143.891312	66	50	
4467	Marri	116.270029	-34.64704997	144.303604	89	80	
4468	Stump	116.270055	-34.64690798	146.257812			
4469	Marri	116.270015	-34.64688996	145.891113	70	50	
4470	Marri	116.270095	-34.64680203	147.747162	98	80	
4471	Karri	116.270122	-34.64688996	147.208725	57	50	
4472	Karri	116.270192	-34.64691997	147.33606	54	50	
4473	Karri	116.270247	-34.64688401	147.806015	70	50	
4474	Marri	116.270174	-34.64678301	148.302628	53	50	
4475	Karri	116.270036	-34.64672299	147.971695	83	80	

4476	Marri	116.270094	-34.64660497	148.864426	54	50	
4477	Marri	116.270049	-34.64657304	149.299515	56	50	
4478	Marri	116.269952	-34.64658402	148.487244	54	50	
4479	Karri	116.269882	-34.64653901	148.892776	54	50	
4480	Karri	116.269817	-34.64650196	149.534531	63	50	
4481	Karri	116.269894	-34.64640699	149.091797	51	50	
4482	Karri	116.269847	-34.64633097	150.399017	59	50	
4483	Karri	116.270009	-34.64637003	150.823471	97	80	
4484	Marri	-116.270012	34.646308	150.915985	68	50	
4485	Marri	116.269979	-34.64626098	151.062531	59	50	
4486	Marri	116.269944	-34.64621798	150.837967	57	50	
4487	Marri	116.270001	-34.64619803	150.78389	57	50	
4488	Marri	116.270084	-34.64617901	150.519577	68	50	
4489	Marri	116.270248	-34.64624799	151.803558	70	50	
4490	Stump	116.270233	-34.64622603	151.18425			
4491	Marri	116.270336	-34.64622402	151.109253	57	50	
4492	Karri	116.27034	-34.64617196	151.427567	65	50	
4493	Karri	116.270228	-34.64609896	151.558517	73	50	
4494	Karri	116.270153	-34.64611396	151.892929	58	50	
4495	Marri	116.270129	-34.64609804	151.881958	70	50	
4496	Karri	116.27014	-34.64610902	151.837051	62	50	
4497	Karri	116.270126	-34.64600399	152.291855	60	50	
4498	Karri	116.270155	-34.64594699	151.965302	74	50	
4499	Karri	116.270106	-34.64594498	151.786057	66	50	
4500	Karri	116.269935	-34.64596904	151.934448	67	50	
4501	Karri	116.269924	-34.64595999	152.101608	54	50	
4502	Marri	116.270463	-34.64621102	152.81778	52	50	
4503	Marri	116.270544	-34.64624799	152.732773	60	50	
4504	Karri	116.270478	-34.64642501	153.098984	57	50	M
4505	Jarrah	116.270547	-34.64646801	153.064453	51	50	
4506	Jarrah	116.270385	-34.646567	151.432007	70	50	
4507	Marri	116.270262	-34.64671302	149.728226	52	50	
4508	Marri	116.270243	-34.64676297	148.982437	63	50	
4509	Marri	116.270361	-34.64680497	150.435898	66	50	
4510	Allocasuarina	116.270299	-34.64691603	150.106796	62	50	
4511	Marri	116.270489	-34.64685802	151.570633	98	80	N
4512	Marri	116.270433	-34.64694402	151.066391	74	50	
4513	Marri	116.270291	-34.647026	150.863266	61	50	
4514	Marri	116.270698	-34.64701099	154.1716	63	50	
4515	Marri	116.270714	-34.64704896	153.913834	62	50	
4516	Marri	116.27073	-34.64693204	153.531845	64	50	
4517	Marri	116.270726	-34.64683698	152.924057	71	50	
4518	Karri	116.270734	-34.64677596	152.882263	62	50	
4519	Karri	116.270713	-34.64669801	151.770416	79	50	
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4521	Marri	116.270856	-34.64660296	152.866165	69	50	
4522	Marri	116.270743	-34.64655401	151.774628	76	50	
4523	Jarrah	116.270625	-34.64651101	151.268158	63	50	
4524	Marri	116.270599	-34.646451	150.895752	74	50	
4525	Jarrah	116.270717	-34.64639903	150.795181	65	50	
4526	Marri	116.270785	-34.64632703	151.042862	57	50	
4527	Marri	116.270873	-34.64629199	150.739685	56	50	
4528	Marri	116.270873	-34.646279	150.92807	59	50	
4529	Karri	116.270606	-34.64627003	150.096527	120	100	
4530	Karri	116.270569	-34.64631404	149.648178	58	50	
4531	Marri	116.271043	-34.64648796	151.034103	69	50	
4532	Marri	116.271099	-34.64637497	150.404053	62	50	
4533	Karri	116.271171	-34.64630096	150.512268	60	50	
4534	Marri	116.271021	-34.64637598	150.942352	58	50	
4535	Marri	116.271073	-34.64654203	150.959961	61	50	
4536	Marri	116.271166	-34.64644404	150.840363	54	50	

4537	Karri	116.270977	-34.64650498	150.960876	53	50	M
4538	Marri	116.270935	-34.64656801	150.60437	51	50	
4539	Karri	116.271094	-34.646667	150.930206	70	50	
4540	Jarrah	116.271186	-34.64659701	151.141968	76	50	
4541	Marri	116.270969	-34.64670296	150.410324	78	50	
4542	Marri	116.270969	-34.64670799	148.983887	63	50	
4543	Jarrah	116.270917	-34.64672098	148.233597	76	50	N
4544	Marri	116.270915	-34.64684897	148.742432	59	50	
4545	Marri	116.271017	-34.64686196	148.82135	59	50	
4546	Marri	116.271111	-34.64690899	149.732086	72	50	
4547	Karri	116.271039	-34.64692198	149.020584	78	50	
4548	Marri	116.27086	-34.64693396	147.836044	76	50	
4549	Karri	116.270807	-34.64698199	147.353485	60	50	
4550	Karri	116.270883	-34.64701703	147.906357	68	50	
4551	Marri	116.270903	-34.64707696	147.889572	73	50	
4552	Marri	116.270964	-34.64702901	148.583725	80	80	
4553	Karri	116.271069	-34.64707998	148.712479	64	50	
4554	Marri	116.270654	-34.64715701	144.517426	61	50	
4555	Karri	116.271235	-34.64714401	148.152069	70	50	
4556	Karri	116.271363	-34.64716103	149.487671	67	50	
4557	Marri	116.271327	-34.64701803	149.229172	55	50	
4558	Marri	116.271406	-34.64706598	149.294998	67	50	
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4560	Marri	116.271422	-34.64684998	148.017639	56	50	
4561	Marri	116.271346	-34.64685098	147.705994	63	50	
4562	Marri	116.271244	-34.64688702	147.387207	63	50	
4563	Marri	116.271242	-34.64697202	147.231201	54	50	
4564	Marri	116.27115	-34.64695098	147.20694	63	50	
4565	Karri	116.271161	-34.64692198	146.380112	67	50	
4566	Karri	116.271252	-34.64673498	145.889954	70	50	
4567	Jarrah	116.271174	-34.64673498	145.657257	59	50	
4568	Marri	116.271254	-34.646695	145.745895	69	50	
4569	Karri	116.271455	-34.64655502	145.590271	76	50	
4570	Marri	116.271247	-34.64651202	144.511978	56	50	
4571	Jarrah	116.271197	-34.64650196	144.284454	58	50	
4572	Jarrah	116.271371	-34.64644798	144.881577	76	50	
4573	Marri	116.271285	-34.64643901	144.719925	77	50	
4574	Marri	116.271204	-34.64644899	144.104034	70	50	
4575	Marri	116.271793	-34.64615604	143.518158	63	50	
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4577	Karri	116.271819	-34.64619803	143.894608	62	50	
4578	Karri	116.271768	-34.64627104	144.170334	59	50	
4579	Karri	116.271809	-34.64618403	143.246078	51	50	
4580	Marri	116.271695	-34.64626601	143.485977	56	50	
4581	Karri	116.271654	-34.64628302	143.10527	52	50	
4582	Marri	116.271712	-34.64644102	144.096817	70	50	
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4587	Marri	116.271586	-34.64639098	143.154007	61	50	
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4593	Marri	116.271672	-34.64679499	145.994644	52	50	
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4668	Karri	116.272781	-34.64625503	152.066544	75	50	
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4689	Karri	116.272972	-34.646725	161.407486	85	80	
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4722	Karri	116.273232	-34.64653297	165.558746	80	80	
4723	Karri	116.273369	-34.64649098	167.053818	74	50	
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4730	Karri	116.273288	-34.64623298	168.223236	79	50	
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4732	Karri	116.273467	-34.64619501	169.30542	70	50	
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4745	Karri	116.273698	-34.64566302	170.449646	51	50	
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4748	Stump	116.273673	-34.645848	170.664566			
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4759	Karri	116.273495	-34.64701602	172.066803	76	50	
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