Habitat Tree Assessment

&

Western Ringtail Possum Survey

of

Proposed Clearing Areas

Collier Street Recreation Ground

Shire of Manjimup

September 2024

Version 1

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SHIRE OF MANJIMUP
Manjimup • Northcliffe • Pemberton • Walpole

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SUMMARY

This report details the results of a habitat tree assessment and targeted fauna survey of proposed clearing areas in and around the Collier Street Recreation Ground within Lot 501 Collier Street (subject site) carried out on behalf of the Shire of Manjimup (the Shire).

The Shire previously applied for a permit to clear vegetation from within the subject site (CPS 10159/1). Upon review, the Department of Water and Environmental Regulation (DWER) have advised the Shire that in order to determine the impacts to conservation significant fauna, a black cockatoo habitat tree assessment is required of the proposed clearing area (DWER 2024).

DWER have not requested that a specific survey for western ringtail possums (WRP) be carried out but one has been included in the scope of works to assist in identifying any potential impacts on this species.,

Day and nocturnal surveys were carried out on the 12 September 2024. All survey work was carried out by Greg Harewood.

KEY FINDINGS

The Shire have documented all the trees and shrubs within the proposed clearing areas that may require removal in addition to specifically identifying some that will not. This listing is provided in Appendix A. Over 157 plants are listed. About 100 of these plants are native endemic species, ~29 are native non endemic species with the balance being exotic species. About 50 of these plants are listed for removal, 18 are listed for retention with the fate of the balance of tree/shrubs (~89) not being specified.

The majority of the vegetation within the subject site appears to have been planted during original development of the recreational grounds. As can be seen in the plant listing held in Appendix A, the plants present include native endemic species (mainly marri and blackbutt), native non-endemic species (several species of eucalyptus and shrubs) and exotic species (pine trees and various small deciduous tree species).

The black cockatoo habitat tree assessment identified 75 trees with a diameter at breast height (DBH) of 30cm. Thirty seven of these trees had a DBH of >50cm. The vast majority of the trees with the permit application area appear to be relatively young and as a consequence do not contain hollows of any size.

The only tree observed to contain a hollow was a flooded gum. The relatively low, side entry hollow was examined using a drone and found to be too shallow/small for use by black cockatoos.

Foraging activity was found at several locations and was associated with marri and pine trees. No evidence of roosting was detected.

Habitat for WRPs within most of the subject site appears only marginally suitable for the species to utilise given that canopy connectivity is generally discontinuous and many of the trees are not species that would be favoured as habitat on a continuous basis e.g. large, isolated eucalypts.

No evidence (dreys, scats or individuals) was found during the day or night surveys. The survey results support the conclusion that WRPs were not utilising the subject site at the time of the survey.

Based on the generally degraded nature of the vegetation present and it's the limited extent of proposed clearing it is considered unlikely that the subject site represents habitat of significance to any species of fauna known to frequent the general area.

This report should be forwarded to DWER for their consideration.

1. INTRODUCTION

This report details the results of a habitat tree assessment and targeted fauna survey of proposed clearing areas in and around the Collier Street Recreation Ground within Lot 501 Collier Street (subject site) carried out on behalf of the Shire of Manjimup (the Shire).

The Shire previously applied for a permit to clear vegetation from within the subject site (CPS 10159/1). Upon review, the Department of Water and Environmental Regulation (DWER) have advised the Shire that in order to determine the impacts to conservation significant fauna, a black cockatoo habitat tree assessment is required of the proposed clearing area (DWER 2024).

Besides black cockatoos, the preliminary assessment by DWER (2024) also "…identified that the area proposed to be cleared comprises suitable habitat which may be significant for threatened fauna, specifically western ringtail possums…"

DWER have not requested that a specific survey for western ringtail possums (WRP) be carried out but one has been included in the scope of works to assist in identifying any potential impacts on this species.,

It is understood that after the previous application was submitted the proposed area of clearing was changed and an amendment of the original application will be made by the Shire. The area surveyed as part of this assessment includes these additional areas.

2. SCOPE OF WORKS

The scope of works is based on specifications provided in DWER's request for additional information (DWER 2024) which states:

Information Requirements

Specifications

Black Cockatoo Habitat Tree Assessment

- The assessment is required to identify all trees that have a diameter at breast height (DBH) of 50 centimetres or greater, measured at 1.3 metres from the base of the tree, that contain a hollow(s) that may be suitable for breeding by Carnaby's cockatoo, Baudin's cockatoo, and/or forest red-tailed black cockatoo.
- The survey must document:
    - the date(s) of the survey;
    - the GPS locations (i.e. eastings and northings or decimal degrees) of all trees identified as having a DBH of 50 centimetres or greater;
    - the GPS locations (i.e. eastings and northings or decimal degrees) of all trees containing hollows which may be suitable for black cockatoos;

- the methodology for determining the evidence of use of each hollow
- a description/photo of the evidence;
- a description/photo of the evidence of use; and
- species of each tree with suitable DBH.

Western Ringtail Possum Survey

As previously mentioned DWER didn't specifically request a WRP survey, however one has been carried out to specifications previously accepted by DWER, which includes a habitat assessment in addition to a day and night survey aimed at detecting evidence of this species presence.

Note: For the purposes of this report the term black cockatoo is in reference to Baudin's cockatoo *Zanda baudinii,* Carnaby's cockatoo *Zanda latirostris* and the forest red-tailed black cockatoo *Calyptorhynchus banksii naso.*

3. METHODS

The day and nocturnal surveys were carried out on the 12 September 2024. All survey work was carried out by Greg Harewood (Zoologist - 21 years' experience in fauna surveys).

The Shire have documented all the trees and shrubs within the proposed clearing areas that may require removal in addition to specifically identifying some that will not. This listing is provided in Appendix A. Over 157 plants are listed. About 100 of these plants are native endemic species, ~29 are native non endemic species with the balance being exotic species. About 50 of these plants are listed for removal, 18 are listed for retention with the fate of the balance of tree/shrubs (~89) not being specified.

3.1 BLACK COCKATOO HABITAT ASSESSMENT

3.1.1 Breeding Habitat Assessment

The assessment has involved the inspection of all suitable tree species with a DBH >30 cm within the subject site as listed by the Shire in Appendix A (including trees marked for retention). The shaded rows in the table held in Appendix A represent trees/groups of trees assessed during this survey and corresponds to all the eucalypts that have a diameter at breast height (DBH) of equal to or over 30cm. Where not provided by the Shire, the DBH of each tree was estimated using a pre-made 30 cm "caliper".

Note: DWER only requested trees with a DBH of 50cm need to be assessed however for completeness this was expanded to include trees with a DBH of greater than 30cm.

Target tree species included marri, jarrah blackbutt and any other *Corymbia/Eucalyptus* species of a suitable size that are present (including non-endemic species). Peppermints,

banksia, sheoak and melaleuca tree species (for example) were not assessed as they typically do not develop hollows that are used by black cockatoos.

The location of each tree fitting the required criteria (i.e. DBH ≥30cm) were recorded with a GPS and details on tree species, number and size of hollows (if any) noted.

Possible hollows were placed into one of four categories, based on the size of the apparent hollow entrance, these being:

- Small = ~<5cm diametre (i.e. entrance appears too small for a black cockatoo);
- Medium = ~5cm-10cm diametre (i.e. entrance appears too small for a black cockatoo);
- Large = ~>10cm diametre (entrance appears large enough for a black cockatoo, but possible hollow appears to be unsuitable for nesting i.e. wrong orientation, too small, too low or too shallow); or
- Large (cockatoo) = ~>10cm diametre (entrance appears big enough to provide access to a possible hollow that maybe suitable for a black cockatoo to use for nesting).

Based on this assessment, trees present within the subject site were placed into one of five categories these being:

- **Not a potential or suitable nesting tree** - Tree <30cm DBH or an unsuitable species (these were not recorded);
- **Potential nesting tree** - Tree ≥30cm DBH, no hollows seen;
- **Potential nesting tree** - Tree ≥30cm DBH, one or more hollows seen, none of which were considered suitable for black cockatoos to use for nesting; or
- **Suitable nesting tree** -Tree ≥30cm DBH, one or more hollows seen, with at least one considered suitable for black cockatoos to use for nesting, but with no evidence of use.
- **Known nesting tree** - Tree ≥30cm DBH, one or more hollows seen, where black cockatoo breeding has been recorded or which demonstrates evidence of breeding (i.e. showing evidence of use through scratches, chew marks or feathers).

For the purposes of this assessment a tree containing a potential cockatoo nest hollow has been defined as:

Generally, any tree which is alive or dead that contains one or more visible hollows (cavities within the trunk or branches) or possible hollows considered potentially suitable for occupation by a black cockatoo for the purpose of nesting/breeding. Hollows that had an entrance greater than about 10cm in diameter and would allow the entry of a black cockatoo into a suitably orientated and sized branch/trunk were recorded as a "potential black cockatoo nest hollow".

Identified hollows were examined using binoculars for evidence of actual use by black cockatoos (e.g. chewing around hollow entrance, scarring and scratch marks on trunks and branches).

Where the ground based assessment of possible large hollows was inconclusive a drone was available for use (if considered warranted and feasible) to examine and photograph potential hollows in more detail.

3.1.2 Foraging Habitat Assessment

Foraging habitat is represented by plant species that are known to provide a food source for black cockatoos. This can be in the form of seeds, flowers and also boring grubs that are extracted from some plant species.

The location and nature of black cockatoo foraging evidence (e.g. chewed fruits around base of trees) observed during the field survey was recorded. The nature and extent of potential foraging habitat present was also documented irrespective of the presence of any actual foraging evidence.

3.1.3 Night Roosting Habitat Assessment

Direct and indirect evidence of black cockatoos roosting within trees on site was noted where observed (e.g. branch clippings, droppings or moulted feathers).

3.2 WESTERN RINGTAIL POSSUM SURVEY

A detailed western ringtail possum survey was be carried out over the subject site. The survey included:

- Diurnal Survey
  A daytime survey was carried out to locate and record dreys, obvious tree hollows, scats and individual WRPs along with habitat characteristics. This was carried out concurrent with the black cockatoo habitat survey.

- Nocturnal Survey
  A single nocturnal survey for WRPs was carried out. The nocturnal survey involved the systematic searching of potential WRP habitats the subject site on foot using a head torch with the aim of detecting WRPs by eye shine.

3.3 OTHER FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

Evidence of the presence or likely presence of fauna species of conservation significance (or suitable habitat) was searched for and recorded concurrent with other site surveys. Opportunistic observations of all fauna species were made during all field survey work and recorded where positive species identifications were made.

This aspect of the assessment included but was not limited to:

- Undertaking a series of transects across the survey area.

- Searching for evidence (i.e. individuals, tracks, scats, calls) of potential conservation significant species under logs, rocks and leaf litter.
- Observing bird species with binoculars.

4. SURVEY CONSTRAINTS

No seasonal sampling has been carried out as part of this fauna assessment. The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. It should also be recognised that site conditions can change with time.

During the black cockatoo habitat survey trees with hollows were searched for. It should be noted that identifying hollows suitable for fauna species from ground level has limitations. Generally, the full characteristics of any hollow seen are not fully evident (e.g. internal dimensions). It is also difficult to locate all hollows within all trees as some are not observable from ground level, though to a certain extent some of these limitations can be overcome by using a drone or pole camera to examine possible hollows in more detail (where considered warranted and feasible).

5. RESULTS

5.1 BLACK COCKATOO HABITAT ASSESSMENT

5.2 Breeding Habitat Assessment

The majority of the vegetation within the subject site appears to have been planted during original development of the recreational grounds. As can be seen in the plant listing held in Appendix A, the plants present include native endemic species (mainly marri and blackbutt), native non-endemic species (several species of eucalyptus and shrubs) and exotic species (pine trees and various small deciduous tree species).

A summary of the black cockatoo “habitat trees” observed within the subject site is provided in Table 1 below. The location of the trees recorded are shown in Figure 2.

Table 1: Summary of Habitat Trees (DBH ≥30cm) recorded

Total Number of Habitat Trees DBH >30cm	Number of Habitat Trees DBH >50cm	Number of Habitat Trees DBH 30 to 50cm	Number of Habitat Trees with Possible Hollows considered Unsuitable for Black Cockatoos	Number of Habitat Trees with Possible Hollows considered Potentially suitable for Black Cockatoos	Tree Species			
					Marri	Non-Endemic	Blackbutt	Flooded Gum
75	37	38	1	0	44	18	9	4

The vast majority of the trees with the permit application area appear to be relatively young and as a consequence do not contain hollows of any size.

The only tree observed to contain a hollow was a flooded gum (see Figure 2). The relatively low, side entry hollow was examined using a drone and found to be too shallow/small for use by black cockatoos. This hollow is pictured below.

Plate 1: Hollow in Flooded Gum (wpt 008)

Additional details of each habitat tree can be found in Appendix B.

As previously mentioned not all the identified habitat trees listed will need clearing. In some cases, the Shire have indicated which trees/shrubs they listed will be removed however in some cases this is not defined.

5.2.1 Foraging Habitat Assessment

The following flora species, known to be or potentially used as a direct food source (e.g. seeds, flowers, nectar, bark or grubs) by one or more species of black cockatoo were recorded within the survey area:

- Marri – C*orymbia calophylla*.
- Blackbutt – *Eucalyptus patens.*
- Non-Endemic Eucalypts – *Eucalyptus* spp. (planted - several species).
- Peppermint – *Agonis flexuosa*.
- Pine – *Pinus radiata.*

It should be noted that some peppermint trees are infrequently foraged upon by Carnaby's and Baudin's cockatoo while seeking out boring beetle larvae. This activity is relatively rare and would only make up a very small proportion of any single bird's food intake. All the non-endemic trees present are small fruited species which are also not particularly favoured by black cockatoos given the effort for return ratio being low. Some tree species are also only represented by a small number of individuals and therefore their total contribution to the foraging resource is low.

A small amount of foraging debris was located within the subject site. This activity was attributed to either the forest red-tailed black cockatoo or Carnaby's/Baudin's cockatoo depending on the nature of the debris found (see Table 2). A small flock of forest red-tailed black cockatoos were also observed during the survey period in the adjoining forest area.

Table 2: Foraging Evidence Examples

Foraging Evidence Description	Example Image
Marri fruits – foraging activity attributed to the Forest Red-tailed Black Cockatoo.	
Pine Cones – foraging activity attributed to the Carnaby's or Baudin's Cockatoo.	

Quality foraging habitat within the survey area can mainly be defined as the areas containing marri. It is not possible to define the area of this resource as the trees are generally scattered amongst other unsuitable vegetation, but the total area is likely to be very small (i.e. less than 0.1 ha based on canopy extent).

5.2.2 Night Roosting Habitat Assessment

No evidence of black cockatoos roosting within trees located within the survey area was observed during the survey period. It is difficult to determine if trees or groves of trees within the survey area represent potential roosting habitat as a range of factors, not all of which can be observed, determine suitability. Some of the larger trees (including non-endemics) may be suitable for roosting but as indicated no actual evidence of use was seen.

5.3 WESTERN RINGTAIL POSSUM SURVEY

Habitat for WRPs within most of the subject site appears only marginally suitable for the species to utilise given that canopy connectivity is generally discontinuous and many of the trees are not species that would be favoured as habitat on a continuous basis e.g. large, isolated eucalypts. There are some peppermints, a species often favoured by WRP, but none showed any evidence of use by the species.

No evidence of western ringtail possums (dreys, scats or individuals) was found during the day or night surveys. The survey results support the conclusion that WRPs were not utilising the subject site at the time of the survey.

5.4 OTHER FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

A relatively small number of fauna species were observed or heard during the survey period, most being common bird species often found in farmland environments.

As detailed above, evidence of three fauna species of conservation significance were recorded, this being the forest red-tailed black cockatoo (Vulnerable) and Carnaby's/Baudin's black cockatoo (Endangered) (exact species not differentiated)

Despite evidence of these species' presence being found and based on the generally degraded nature of the vegetation present and it's the limited extent of proposed clearing it is considered unlikely that the subject site represents habitat of significance to any species of fauna known to frequent the general area.

6. CONCLUSION

The assessment reported on here was primarily undertaken to identify trees within the subject site that contain hollows suitable for use by black cockatoos for nesting purposes and to determine if western ringtail possums were present.

No trees were recorded as having hollows suitable for black cockatoos. Foraging activity was found at several locations and was associated with marri and pine trees. No evidence of roosting was detected.

Habitat for WRPs within most of the subject site appears only marginally suitable for the species to utilise given that canopy connectivity is generally discontinuous and many of the trees are not species that would be favoured as habitat on a continuous basis e.g. large, isolated eucalypts. No evidence (dreys, scats or individuals) was found during the day or night surveys. The survey results support the conclusion that WRPs were not utilising the subject site at the time of the survey.

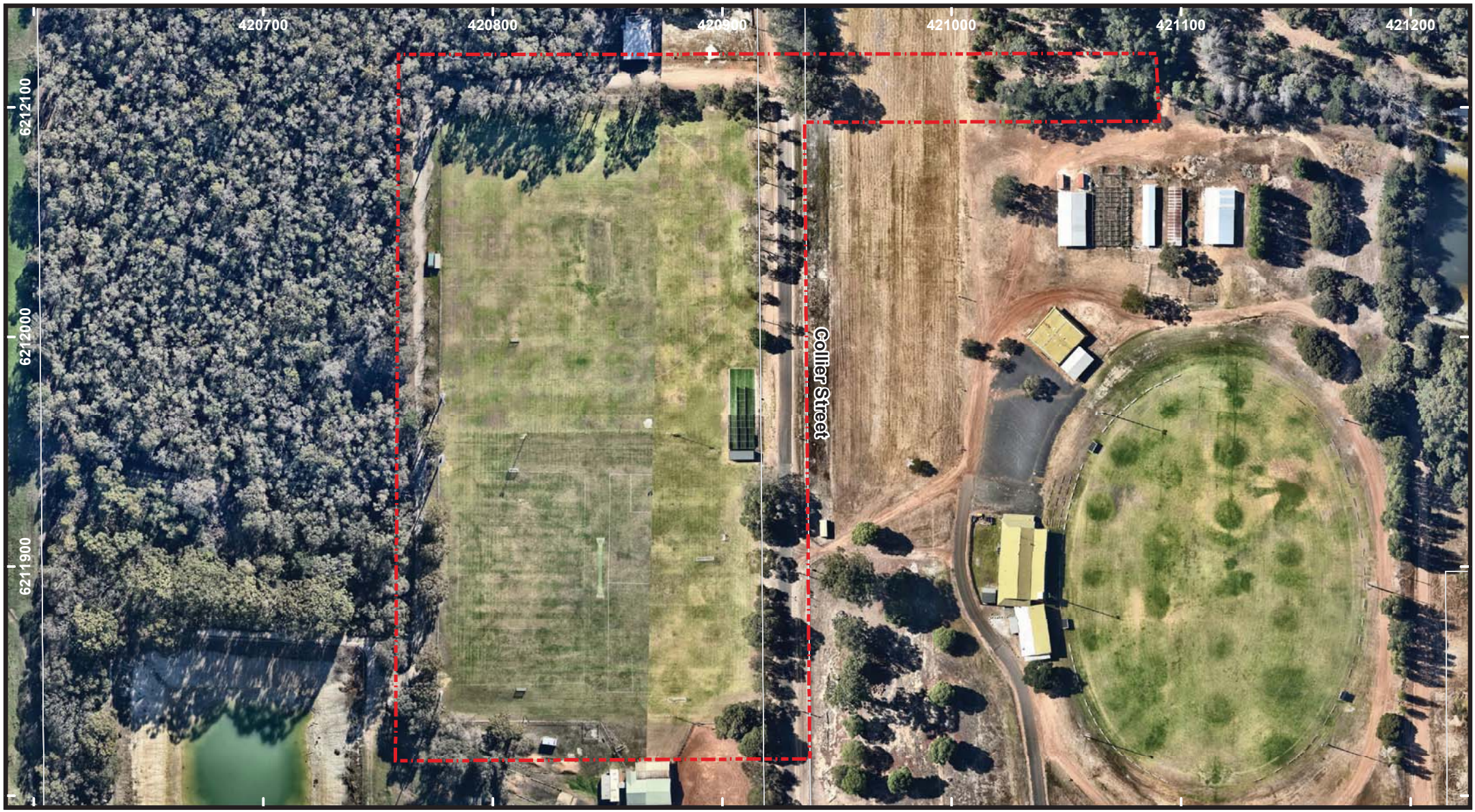
Based on the generally degraded nature of the vegetation present and it's the limited extent of proposed clearing it is considered unlikely that the subject site represents habitat of significance to any species of fauna known to frequent the general area.

This report should be forwarded to DWER for their review.

7. REFERENCES

Department of Water and Environmental Regulation (DWER) (2024). Request for further information - CPS 1059/1. Letter dated 10 May 2024.

FIGURES



Legend

Survey Area

0 50 100

Metres

Note: Not all vegetation within the survey area will be removed.

Fauna Survey

Drawn: G Harewood

Date: 29-Sep-24

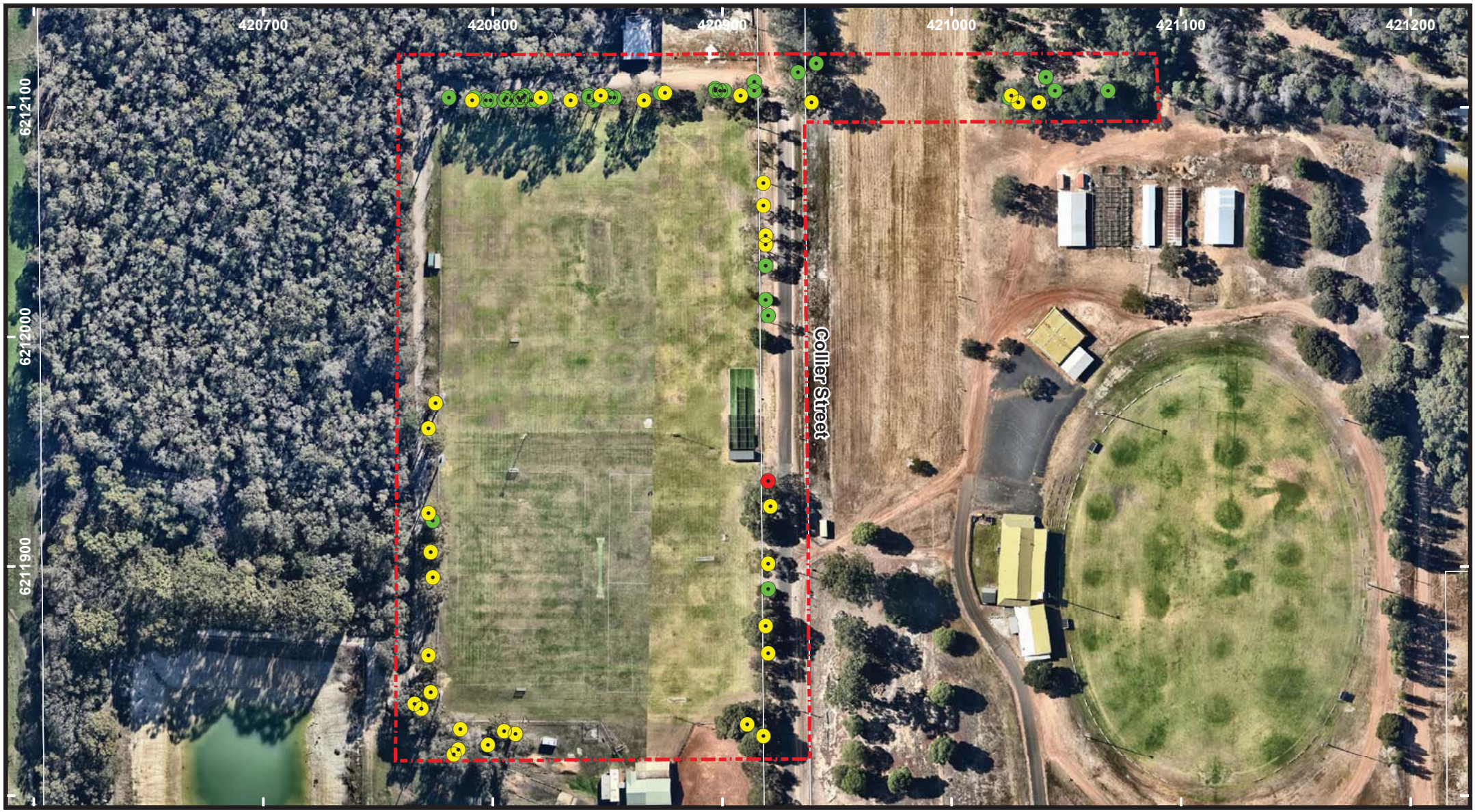
Scale: 1:2,250

Projection/Coordinate System: UTM/MGA Zone 50

Lot 501 Collier Street
Shire of Manjimup

Subject Site
Aerial Photograph

Figure: 1



Legend

- Survey Area
- DBH 30 to 50cm - No Hollows Observed (38)
- DBH >50cm - No Hollows Observed (36)
- DBH >50cm - One or More Hollows Observed None Suitable for Black Cockatoos (1)

Note: Not all trees shown will necessarily be removed

N

0 50 100

Metres

Fauna Survey

Drawn: G Harewood
Date: 29-Sep-24
Scale: 1:2,250
Projection/Coordinate System: UTM/MGA Zone 50

Lot 501 Collier Street
Shire of Manjimup

Subject Site Habitat Trees (DBH >30cm)

Figure: 2

APPENDIX A

SHIRE OF MANJIMUP TREE DATA BASE

Manjimup Shire database of proposed clearing

Shaded rows represent trees/groups of trees assessed during this survey (Criteria = Eucalypt with a DBH >30cm)

Area	Ref #	Abundance	Species	Native/Non Native	Height (m)	DBH (mm)	Remove / Retain
Eastern Side-Collier Street	1	1	Eucalyptus botryoides	NN	25	890	Remove
Eastern Side-Collier Street	2	1	Eucalyptus botryoides	NN	28	840	Remove
Eastern Side-Collier Street	4	1	Agonis flexuosa (Peppermint)	N	5-6	350	Retain
Eastern Side-Collier Street	5	1	Eucalyptus sideroxylon (Ironbark)	NN	4	200	Remove
Eastern Side-Collier Street	6	1	Agonis flexuosa	N	6	320	Retain
Eastern Side-Collier Street	7	1	Eucalyptus sideroxylon	NN	15	510	Remove
Eastern Side-Collier Street	8	1	Agonis flexuosa	N	8	380	Retain
Eastern Side-Collier Street	9	1	Corymbia calophylla (Marri)	N	25	1200	Remove
Eastern Side-Collier Street	10	1	Agonis flexuosa	N	6	450	Retain
Eastern Side-Collier Street	11	1	Eucalyptus leucoxylon	NN	5	420	Remove
Eastern Side-Collier Street	12	1	Eucalyptus leucoxylon	NN	12	500	Remove
Eastern Side-Collier Street	13	1	Eucalyptus leucoxylon	NN	3	200	Remove
Eastern Side-Collier Street	14	1	Agonis flexuosa	N	15	890	Remove
Eastern Side-Collier Street	15	1	Eucalyptus robusta	NN	28	820	Remove
Eastern Side-Collier Street	16	1	Acacia myrtifolia	N	2	100	Remove
Eastern Side-Collier Street	17	1	Corymbia ficifolia	NN	4	200	Remove
Eastern Side-Collier Street	18	1	Eucalyptus rudis	N	15	1080	Remove
Eastern Side-Collier Street	19	1	Platanus x acerifolia	NN	11	350	Remove
Eastern Side-Collier Street	20	1	Eucalyptus sideroxylon	NN	17	300	Remove
Eastern Side-Collier Street	21	1	Eucalyptus sideroxylon	NN	5	400	Remove
Eastern Side-Collier Street	22	1	Eucalyptus sideroxylon	NN	14	430	Remove
Eastern Side-Collier Street	23	1	Eucalyptus sideroxylon (braced)	NN	12	620	Remove
Eastern Side-Collier Street	24	1	Eucalyptus sideroxylon	NN	18	640	Remove
Eastern Side-Collier Street	25	1	Eucalyptus tricarpa	NN	3	100	Remove
Eastern Side-Collier Street	26	1	Eucalyptus sideroxylon	NN	14	540	Remove
Eastern Side-Collier Street	27	1	Eucalyptus sideroxylon	NN	10	520	Remove
Eastern Side-Collier Street	28	1	Eucalyptus leucoxylon	NN	8	280	Remove
Eastern Side-Collier Street	29	1	Eucalyptus sideroxylon	NN	5	200	Remove
Fire Access Track	3	1	Eucalyptus globulus	NN	25+	1000	

Area	Ref #	Abundance	Species	Native/Non Native	Height (m)	DBH (mm)	Remove / Retain
Fire Access Track	4	4	Pinus radiata	NN	20	350 or less	
Fire Access Track	5	7	Pinus radiata	NN	6-12	less than 250	
Fire Access Track	6	1	Eucalyptus globulus	NN	20	400	
Fire Access Track	7	1	Acacia longifolia	NN	small	–	
Fire Access Track	8	1	Acacia iteaphylla	NN	small	–	
Fire Access Track	11	2	Corymbia calophylla (Marri)	N			Retain
Fire Access Track	12	numerous	Acacia melanoxylon	NN			
Fire Access Track	13	5	Persoonia longifolia	N	up to 2	less than 100	Retain
Northern End	2	44	Corymbia calophylla (Marri)	N	10 - 12	80-350	
Northern End	3	1	Melaleuca incana	N		–	
Northern End	4	numerous	Pteridium esculentum (Bracken)	N		–	
Northern End	5	4	Leucopogon verticillatus	N		–	
Northern End	6	19	Acacia myrtifolia	N		–	
Northern End	7	4	Eucalyptus leucoxylon	NN	10 - 12	80-350/400	
Northern End	8	1	Eucalyptus camaldulensis	NN	10 - 12	450	
Southern End	1	1	Eucalyptus rudis	N	15+	1170	Retain
Southern End	2	1	Eucalyptus rudis	N	8	800	Remove
Southern End	3	1	Pinus radiata	NN			
Southern End	4	1	Eucalyptus rudis	N	12	1000	Remove
Southern End	5	1	Corymbia calophylla (Marri)	N	18	820	Retain if possible
Southern End	6	1	Eucalyptus patens (Blackbutt)	N	18	890	Remove
Southern End	7	1	Eucalyptus patens (Blackbutt)	N	14	640	Retain if possible
Southern End	8	1	Ulmus Parvifolia	NN	4	200	Retain
Western Side	1	1	Acer rubrum	NN	5	150	Remove
Western Side	2	1	Acer rubrum	NN	6	200	Remove
Western Side	3	1	Robinia	NN	4	150	Remove
Western Side	4	1	Acer rubrum	NN	3	150	Remove
Western Side	5	1	Acer rubrum	NN	4	120	Remove
Western Side	6	1	Robinia	NN	6	250	Remove
Western Side	7	1	Acer rubrum	NN	5	150	Remove
Western Side	8	1	Robinia	NN	6	250	Remove

Area	Ref #	Abundance	Species	Native/Non Native	Height (m)	DBH (mm)	Remove / Retain
Western Side	9	1	Acer rubrum	NN	6	250	Remove
Western Side	10	1	Eucalyptus patens (Blackbutt)	N	15+	1000+	Remove
Western Side	11	1	Acer rubrum	NN	7	100	Remove
Western Side	12	1	Eucalyptus patens (Blackbutt)	N	15+	1000+	Remove
Western Side	13	1	Acer rubrum	NN	5	120	Remove
Western Side	14	1	Robinia	NN	3	50	Remove
Western Side	15	1	Eucalyptus patens (Blackbutt)	N	15+	940	Retain
Western Side	16	1	Eucalyptus sideroxylon (Ironbark)	NN	12	360 each	Remove
Western Side	17	1	Acer rubrum	NN	2	100	Remove
Western Side	18	1	Eucalyptus patens (Blackbutt)	N	15+	1000	Potential to keep
Western Side	19	1	Small dead	–	–	–	Remove
Western Side	20	1	Eucalyptus patens (Blackbutt)	N	18/20	1250	Remove
Western Side	21	1	Acer rubrum	NN	2	50	Remove
Western Side	22	1	Robinia	NN	4	100	Remove
Western Side	23	1	Eucalyptus patens (Blackbutt)	N	12	860	Remove
Western Side	24	1	Eucalyptus patens (Blackbutt)	N	15	1000	Retain if possible
Western Side	25	1	Corymbia calophylla (Marri)	N	8/10	640	Remove
Western Side	26	1	Corymbia calophylla (Marri)	N	10	1070	Remove

APPENDIX B

HABITAT TREE DETAILS

Habitat Trees
DBH >30cm
Datum - GDA94
Entrance Size Ranges - Small = >5cm, Medium = 5 to 10cm, Large = >10cm

Waypoint Number	Zone	mE	mN	Area	SoM Code	Tree Species	Tree Height (m)	DBH (mm)	Number of Hollows	Estimated Hollow Entrance Size	Remove/Retain	Comments	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow
wpt001	50H	420911	6211831	Eastern Side Collier Street	1	Non-endemic Eulcaypt	25	890	0		Remove				
wpt002	50H	420918	6211826	Eastern Side Collier Street	2	Non-endemic Eulcaypt	28	840	0		Remove				
wpt003	50H	420920	6211862	Eastern Side Collier Street	7	Non-endemic Eulcaypt	15-20	510	0		Remove				
wpt004	50H	420919	6211874	Eastern Side Collier Street	9	Marri	25	1200	0		Remove	Dieing			
wpt005	50H	420920	6211890	Eastern Side Collier Street	11	Marri	5	420	0		Remove				
wpt006	50H	420920	6211901	Eastern Side Collier Street	12	Non-endemic Eulcaypt	12	500	0		Remove				
wpt007	50H	420921	6211926	Eastern Side Collier Street	15	Non-endemic Eulcaypt	28	820	0		Remove				
wpt008	50H	420920	6211937	Eastern Side Collier Street	18	Flooded Gum	15	1080	1	Small	Remove	Examine with drone - shallow unoccupied.	No Signs	No Signs	No
wpt009	50H	420920	6212009	Eastern Side Collier Street	20	Non-endemic Eulcaypt	17	300	0		Remove				
wpt010	50H	420919	6212016	Eastern Side Collier Street	21	Non-endemic Eulcaypt	5	300	0		Remove				
wpt011	50H	420919	6212031	Eastern Side Collier Street	22	Non-endemic Eulcaypt	14	430	0		Remove				
wpt012	50H	420919	6212040	Eastern Side Collier Street	23	Non-endemic Eulcaypt	12	620	0		Remove				
wpt013	50H	420919	6212044	Eastern Side Collier Street	24	Non-endemic Eulcaypt	18	640	0		Remove				
wpt014	50H	420918	6212057	Eastern Side Collier Street	26	Non-endemic Eulcaypt	14	540	0		Remove				
wpt015	50H	420918	6212067	Eastern Side Collier Street	27	Non-endemic Eulcaypt	10	520	0		Remove				
wpt016	50H	421068	6212107	Fire Access Track - Area 1	N/A	Marri	15-20	300-500	0		Retain	Outside of clearing Area ?			
wpt017	50H	421045	6212107	Fire Access Track - Area 1	N/A	Marri	10-15	300-500	0		Retain	Outside of clearing Area ?			
wpt018	50H	421041	6212113	Fire Access Track - Area 1	N/A	Marri	15-20	300-500	0		Retain	Outside of clearing Area ?			
wpt019	50H	421038	6212102	Fire Access Track - Area 1	N/A	Marri	15-20	>500	0		Retain	Outside of clearing Area ?			
wpt020	50H	421029	6212102	Fire Access Track - Area 1	N/A	Marri	15-20	>500	0		Retain	Outside of clearing Area ?			
wpt021	50H	421026	6212105	Fire Access Track - Area 1	N/A	Marri	15-20	>500	0		Retain	Outside of clearing Area ?			
wpt022	50H	421025	6212104	Fire Access Track - Area 1	N/A	Marri	10-15	300-500	0		Retain	Outside of clearing Area ?			
wpt023	50H	420939	6212102	Fire Access Track - Area 2	3	Non-endemic Eulcaypt	25+	1000	0		?				
wpt024	50H	420941	6212119	Fire Access Track - Area 2	N/A	Marri	5-10	300-500	0		?				
wpt025	50H	420933	6212115	Fire Access Track - Area 2	6	Non-endemic Eulcaypt	20	400	0		?				
wpt026	50H	420914	6212111	Northern End	N/A	Marri	10-15	300-500	0		?				
wpt027	50H	420914	6212107	Northern End	N/A	Marri	10-15	300-500	0		?				
wpt028	50H	420908	6212105	Northern End	N/A	Marri	15-20	>500	0		?				
wpt029	50H	420901	6212107	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt030	50H	420899	6212107	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt031	50H	420897	6212107	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt032	50H	420897	6212108	Northern End	N/A	Non-endemic Eulcaypt	5-10	300-500	0		?				
wpt033	50H	420875	6212106	Northern End	N/A	Marri	15-20	>500	0		?				
wpt034	50H	420873	6212106	Northern End	N/A	Non-endemic Eulcaypt	10-15	300-500	0		?				
wpt035	50H	420866	6212103	Northern End	N/A	Marri	15-20	>500	0		?				
wpt036	50H	420853	6212104	Northern End	N/A	Marri	10-15	300-500	0		?				
wpt037	50H	420851	6212104	Northern End	N/A	Marri	10-15	300-500	0		?				
wpt038	50H	420850	6212105	Northern End	N/A	Marri	10-15	300-500	0		?				
wpt039	50H	420847	6212105	Northern End	N/A	Marri	15-20	>500	0		?				
wpt040	50H	420844	6212103	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt041	50H	420842	6212104	Northern End	N/A	Dead Marri	0-5	300-500	0		?				
wpt042	50H	420842	6212105	Northern End	N/A	Non-endemic Eulcaypt	10-12	450	0		?				
wpt043	50H	420834	6212103	Northern End	N/A	Marri	15-20	>500	0		?				
wpt044	50H	420823	6212104	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt045	50H	420821	6212104	Northern End	N/A	Marri	15-20	>500	0		?				
wpt046	50H	420819	6212103	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt047	50H	420817	6212103	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt048	50H	420814	6212105	Northern End	N/A	Dead Marri	0-5	300-500	0		?				
wpt049	50H	420813	6212104	Northern End	N/A	Marri	15-20	300-500	0		?				

Waypoint Number	Zone	mE	mN	Area	SoM Code	Tree Species	Tree Height (m)	DBH (mm)	Number of Hollows	Estimated Hollow Entrance Size	Remove/Retain	Comments	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow
wpt050	50H	420812	6212103	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt051	50H	420811	6212104	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt052	50H	420808	6212103	Northern End	N/A	Marri	10-15	300-500	0		?				
wpt053	50H	420806	6212104	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt054	50H	420805	6212103	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt055	50H	420799	6212103	Northern End	N/A	Marri	10-15	300-500	0		?				
wpt056	50H	420797	6212103	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt057	50H	420792	6212104	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt058	50H	420791	6212103	Northern End	N/A	Marri	15-20	>500	0		?				
wpt059	50H	420781	6212104	Northern End	N/A	Marri	15-20	300-500	0		?				
wpt060	50H	420775	6211971	Western Side	10	Blackbutt	15+	1000+	0		Remove				
wpt061	50H	420772	6211960	Western Side	12	Blackbutt	15+	1000+	0		Remove				
wpt062	50H	420772	6211923	Western Side	15	Blackbutt	15+	940	0		Retain				
wpt063	50H	420773	6211906	Western Side	18	Blackbutt	15+	1000+	0		Potential to keep				
wpt064	50H	420774	6211920	Western Side	16	Non-endemic Eulcaypt	12	360	0		Remove				
wpt065	50H	420774	6211895	Western Side	20	Blackbutt	18/20	1250	0		Remove				
wpt066	50H	420772	6211861	Western Side	23	Blackbutt	12	860	0		Remove				
wpt067	50H	420773	6211845	Western Side	24	Blackbutt	15	1000	0		Retain if possible				
wpt068	50H	420766	6211840	Western Side	25	Flooded Gum	8/10	640	0		Remove				
wpt069	50H	420769	6211838	Western Side	26	Marri	10-15	1070	0		Remove				
wpt070	50H	420786	6211829	Southern End	5	Marri	18	820	0		Retain if possible				
wpt071	50H	420805	6211828	Southern End	6	Blackbutt	18	890	0		Remove				
wpt072	50H	420810	6211827	Southern End	7	Blackbutt	14	640	0		Retain if possible				
wpt073	50H	420785	6211820	Southern End	1	Flooded Gum	15+	1170	0		Retain				
wpt074	50H	420783	6211818	Southern End	2	Flooded Gum	8	800	0		Remove				
wpt075	50H	420798	6211822	Southern End	4	Marri	12	1000	0		Remove				

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