



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 11081/1
File Number: DWERVT18863
Duration of Permit: From 7 May 2026 to 7 May 2036

PERMIT HOLDER

Shire of Serpentine Jarrahdale

LAND ON WHICH CLEARING IS TO BE DONE

Mundijong Road reserve (PIN 11460696), Mundijong

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.052 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 7 May 2028.

2. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of *native vegetation*;
- (b) minimise the amount of *native vegetation* to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

3. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

4. Directional clearing

The permit holder must:

- (a) conduct *clearing* under this permit in one direction from east to west towards adjacent *native vegetation* and away from existing cleared areas;
- (b) allow reasonable time for fauna present within the area being cleared to move into adjacent *native vegetation* ahead of the clearing activity.

5. Offset – Revegetation and rehabilitation

- (a) Within 18 months of the commencement of clearing authorised under this permit and no later than 30 June 2029, the permit holder must undertake *revegetation* and *rehabilitation* within the area cross-hatched red in Figure 2 of Schedule 1 by;
 - (i) removing infrastructure and ripping the ground to remove soil compaction prior to *planting* and/or *direct seeding*;
 - (ii) undertaking *weed* control activities prior to *planting* and/or *direct seeding*;
 - (iii) at an *optimal time*, undertaking the deliberate *planting* and/or *direct seeding* of *native vegetation* species within the area cross-hatched red in Figure 2 of Schedule 1, of which:
 - A. 0.13 hectares is to provide suitable *black cockatoo foraging habitat*; and
 - B. at least 0.03 hectares is to be representative of the *Guildford vegetation complex*;
 - (iv) ensuring only *local provenance* propagating material is used to *revegetate* and *rehabilitate*;
 - (v) establishing at least two fixed 10 x 10 metre quadrats within the area cross-hatched red in Figure 2 of Schedule 1, at least one of which must be present within the 0.03 hectare area subject to condition 5(a)(iii)B.
- (b) The permit holder must undertake *weed* control activities and watering within the area cross-hatched red in Figure 2 of Schedule 1 to achieve the minimum completion criteria specified in Table 3 of Schedule 2.
- (c) The permit holder must implement hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the area cross-hatched red in Figure 2 of Schedule 1.
- (d) Within 24 months of undertaking *planting* and/or *direct seeding* in accordance with condition 5(a)(iii) of this permit, the permit holder must engage an

environmental specialist to monitor the area cross-hatched red in Figure 2 of Schedule 1 annually until the completion criteria, outlined in Table 3 of Schedule 2, have been met and maintained for a minimum of two years.

- (e) If the monitoring required under condition 5(d) indicates that the completion criteria outlined in Table 3 of Schedule 2 have not been met, the permit holder must undertake remedial actions for *revegetation* and *rehabilitation* including:
 - (i) deliberately *planting native vegetation* within the area cross-hatched red in Figure 2 of Schedule 1 that will result in the completion criteria specified in Table 3 of Schedule 2 being met, ensuring only *local provenance* seeds and propagating material are used;
 - (ii) additional *weed* control activities;
 - (iii) continue the annual monitoring of the area cross-hatched red in Figure 2 of Schedule 1 by an *environmental specialist* until the completion criteria, outlined in Table 3 of Schedule 2, are met.
- (f) Where remedial actions have been undertaken in accordance with condition 5(e) of this permit, the permit holder must repeat activities required by condition 5(d) and conditions 5(e) of this permit.
- (g) Where an *environmental specialist* has determined that the completion criteria outlined in Table 3 of Schedule 2 have been met, that report is to be provided to the *CEO*.
- (h) If the *CEO* does not agree with the determinations made by an *environmental specialist* under condition 5(g) of this permit, the *CEO* may require the permit holder to repeat the required actions under conditions 5(d) and 5(e) of this permit.

6. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 2;

No.	Relevant matter	Specifications
		<p>(f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 3; and</p> <p>(g) actions taken in accordance with condition 4.</p>
2.	In relation to <i>revegetation</i> and <i>rehabilitation</i> pursuant to condition 5	<p>(a) the date(s) that <i>planting</i> and/or direct seeding undertaken in accordance with condition 5(a)(iii) was undertaken;</p> <p>(b) the boundaries of the area <i>revegetated</i> and <i>rehabilitated</i> (recorded digitally as a shapefile);</p> <p>(c) description of the <i>revegetation</i> and <i>rehabilitation</i> activities undertaken, including actions taken to implement watering and weed control;</p> <p>(d) a list of the <i>native vegetation</i> species planted;</p> <p>(e) a description of any remediation works undertaken pursuant to condition 5(e);</p> <p>(f) the date that completion criteria were considered to be met; and</p> <p>(g) a copy of the <i>environmental specialist's</i> monitoring report and determination, pursuant to condition 5(g).</p>

7. Reporting

- (a) The permit holder must provide to the *CEO*, on or before 30 June of each calendar year, a written report containing:
- (i) the records required to be kept under condition 6; and
 - (ii) records of activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.
- (b) If no *clearing* authorised under this permit has been undertaken, a written report confirming that no *clearing* under this permit has been undertaken must be provided to the *CEO* on or before 30 June of each calendar year.
- (c) The permit holder must provide to the *CEO*, no later than 90 calendar days prior to the expiry date of the permit, a written report of records required under condition 6, where these records have not already been provided under condition 7(a).

DEFINITIONS

In this permit, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
black cockatoo foraging habitat	means <i>native vegetation</i> that provides primary foraging habitat for all three <i>black cockatoo species</i> , including marri (<i>Corymbia calophylla</i>) and jarrah (<i>Eucalyptus marginata</i>).
black cockatoo species	means one or more of the following species: (a) <i>Calyptorhynchus lateriosis</i> (Carnaby's cockatoo); (b) <i>Calyptorhynchus baudinii</i> (Baudin's cockatoo); and/or (c) <i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo).
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 2.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
Guildford vegetation complex	is described as a mixture of open forest to tall open forest of <i>Corymbia calophylla</i> (Marri) - <i>Eucalyptus wandoo</i> (Wandoo) - <i>Eucalyptus marginata</i> (Jarrah) and woodland of <i>Eucalyptus wandoo</i> (Wandoo) (with rare occurrences of <i>Eucalyptus lane-poolei</i> (Salmon White Gum)). Minor components include <i>Eucalyptus rudis</i> (Flooded Gum) - <i>Melaleuca raphiophylla</i> (Swamp Paperbark).
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
optimal time	means the period from May to June for undertaking planting and seeding.
plant/ing	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.

Term	Definition
rehabilitate/ed/ion	means actively managing an area containing native vegetation in order to improve the ecological function of that area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
revegetate/ed/ion	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
weeds	<p>means any plant –</p> <ul style="list-style-type: none"> (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS



Mathew Gannaway
 SENIOR MANAGER
 NATIVE VEGETATION REGULATION

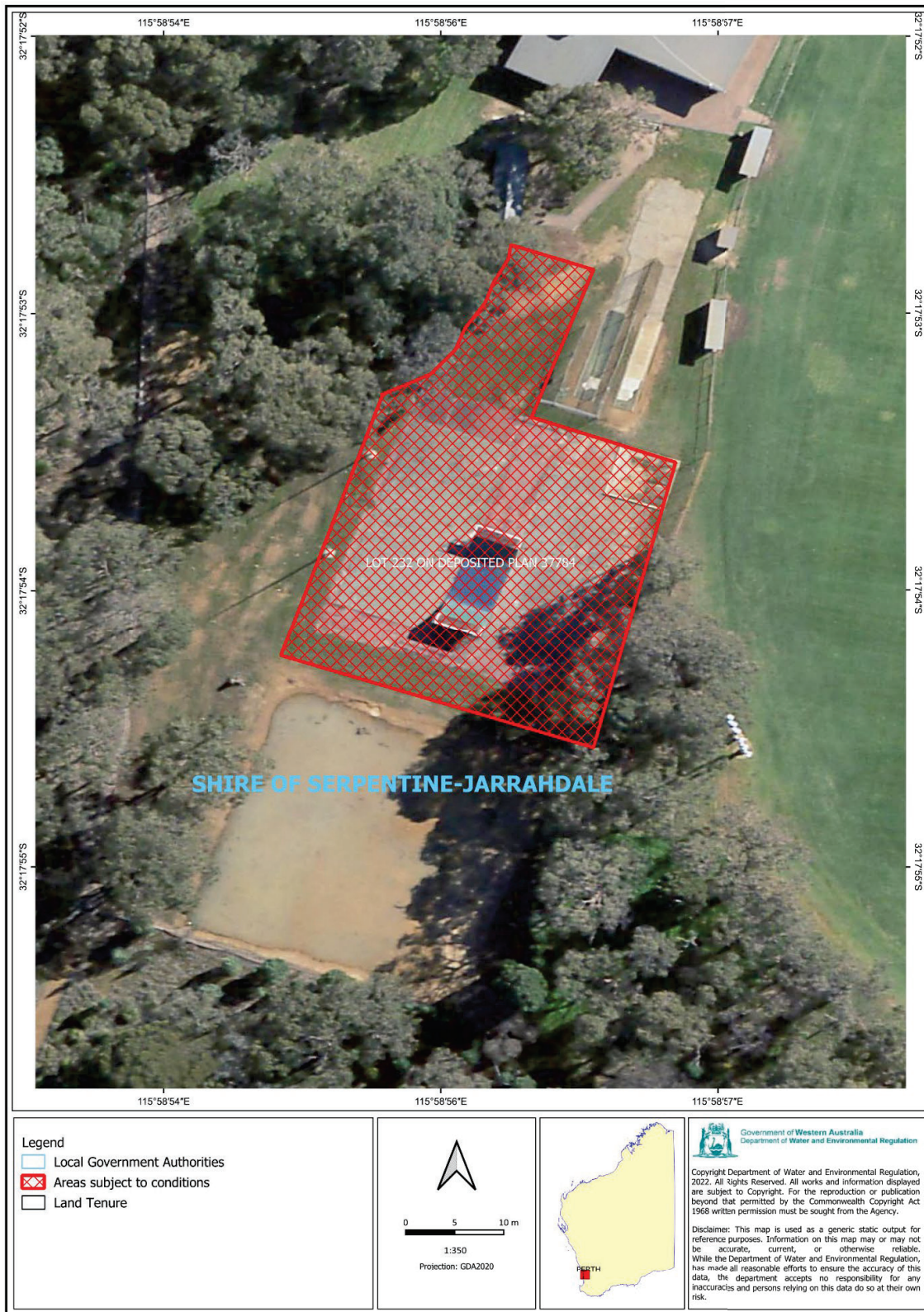
*Officer delegated under Section 20
 of the Environmental Protection Act 1986*

13 April 2026

SCHEDULE 1



Figure 1: Map of the boundary of the area within which clearing may occur



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Figure 2: Map of the boundary of the area to which condition 5 apply.

SCHEDULE 2

Table 3: Completion criteria for the *revegetation* and *rehabilitation* within the areas cross-hatched red in Figure 2 of Schedule 1.

Characteristic	Completion criteria	Monitoring
Species richness – within the 0.03 hectare area subject to condition 5(a)(iii)B	Species richness of eight or more species of <i>native vegetation</i> per 100m ² , which must include a minimum of two tree species that are representative of the <i>Guildford vegetation complex</i> , for the 0.03 hectare area subject to condition 5(a)(iii)B.	Annual monitoring by an <i>environmental specialist</i> , of species richness within the monitoring quadrat(s) present in the 0.03 hectare area subject to condition 5(a)(iii)B. Completion criteria must be met and maintained for two years.
Vegetation condition - within the 0.03 hectare area subject to condition 5(a)(iii)B	Targeted vegetation condition in Good (Keighery, 1994), or better condition for the 0.03 hectare area subject to condition 5(a)(iii)B.	Annual monitoring by an <i>environmental specialist</i> , of vegetation condition within the monitoring quadrat(s) present in the 0.03 hectare area subject to condition 5(a)(iii)B. Completion criteria must be met and maintained for two years.
Species density - within the 0.03 hectare area subject to condition 5(a)(iii)B	Density of one stem per two square metres in the 0.03 hectare area subject to condition 5(a)(iii)B.	Annual monitoring by an <i>environmental specialist</i> , of species density within the monitoring quadrat(s) present in the 0.03 hectare area required to be representative of the <i>Guildford vegetation complex</i> . Completion criteria must be met and maintained for two years.
Vegetation cover - within the 0.03 hectare area subject to condition 5(a)(iii)B	<20% bare ground assessed as vegetation cover in the 0.03 hectare area subject to condition 5(a)(iii)B.	Annual monitoring by an <i>environmental specialist</i> , of vegetation cover within the monitoring quadrat(s) present in the 0.03 hectare area subject to condition 5(a)(iii)B. Completion criteria must be met and maintained for two years.
<i>Black cockatoo foraging habitat</i> tree density	At least one live tree providing <i>black cockatoo foraging habitat</i> is required to be present per 100m ²	Annual monitoring by an <i>environmental specialist</i> , of black cockatoo foraging habitat tree density across the entire application area. Completion criteria must be met and maintained for two years.
<i>Weeds</i>	No declared <i>weeds</i> within the areas required for <i>revegetation</i> and <i>rehabilitation</i> under condition 5. <i>Weed</i> cover equal to or less than 10% of total species abundance on site in the areas required for <i>revegetation</i> and <i>rehabilitation</i> under condition 5.	Annual, during Autumn and Spring, monitoring by an <i>environmental specialist</i> , of <i>weed</i> cover and presence of declared <i>weeds</i> within the two monitoring quadrats required by condition 5(b)(v). Completion criteria must be met and maintained for two years.



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 11081/1
Permit type:	Area permit
Applicant name:	Shire of Serpentine Jarrahdale
Application received:	16 May 2025
Application area:	0.052 hectares of native vegetation
Purpose of clearing:	Road upgrades
Method of clearing:	Mechanical
Property:	Mundijong Road reserve (PIN 11460696)
Location (LGA area/s):	Shire of Serpentine Jarrahdale
Localities (suburb/s):	Mundijong

1.2. Description of clearing activities

The vegetation proposed to be cleared is a contiguous area of 0.052 hectares adjacent to Mundijong Road (see Figure 1, Section 1.5). The proposed clearing is required to upgrade the Mundijong Road/Paterson Road intersection to a roundabout in order to improve the traffic flow and safety of the intersection.

1.3. Decision on application

Decision:	Granted
Decision date:	13 April 2026
Decision area:	0.052 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix F.1), the findings of a tree survey and habitat assessment (see Appendix E), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3.3). The Delegated Officer also took into consideration that the intersection has a known crash history (Shire of Serpentine Jarrahdale, 2025) and that the proposed clearing will facilitate upgrades to road safety.

The assessment identified that the proposed clearing will result in:

- the loss of 0.052 hectares that provides significant foraging habitat and potential roosting habitat for black cockatoo species.
- the loss of 0.052 hectares of vegetation that is broadly representative of the extensively cleared Guildford Complex.

- the loss of 0.018 hectares of native vegetation within Bush Forever Site 360, and possible indirect impacts to habitat values in Bush Forever Sites 360, 365 and 350 through the spread of weeds and other pathogens.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the impacts of the proposed clearing to adjacent Bush Forever Sites can be minimised and managed through conditions on the permit such that they are unlikely lead to an unacceptable risk to environmental values. The applicant has suitably demonstrated avoidance and minimisation measures. The offset provided adequately counterbalances the impacts to impacts to black cockatoo foraging habitat, the Guildford Complex and Bush Forever Site 360 (see Section 4).

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback;
- undertake slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity, and
- provide a revegetation and rehabilitation offset, requiring the revegetation of at least 0.13 hectares of significant foraging habitat for black cockatoo species, and 0.03 hectares of vegetation representative of the Guildford complex, within Lot 232 on Deposited Plan 37784 (Crown Reserve 4486).

1.5. Site map



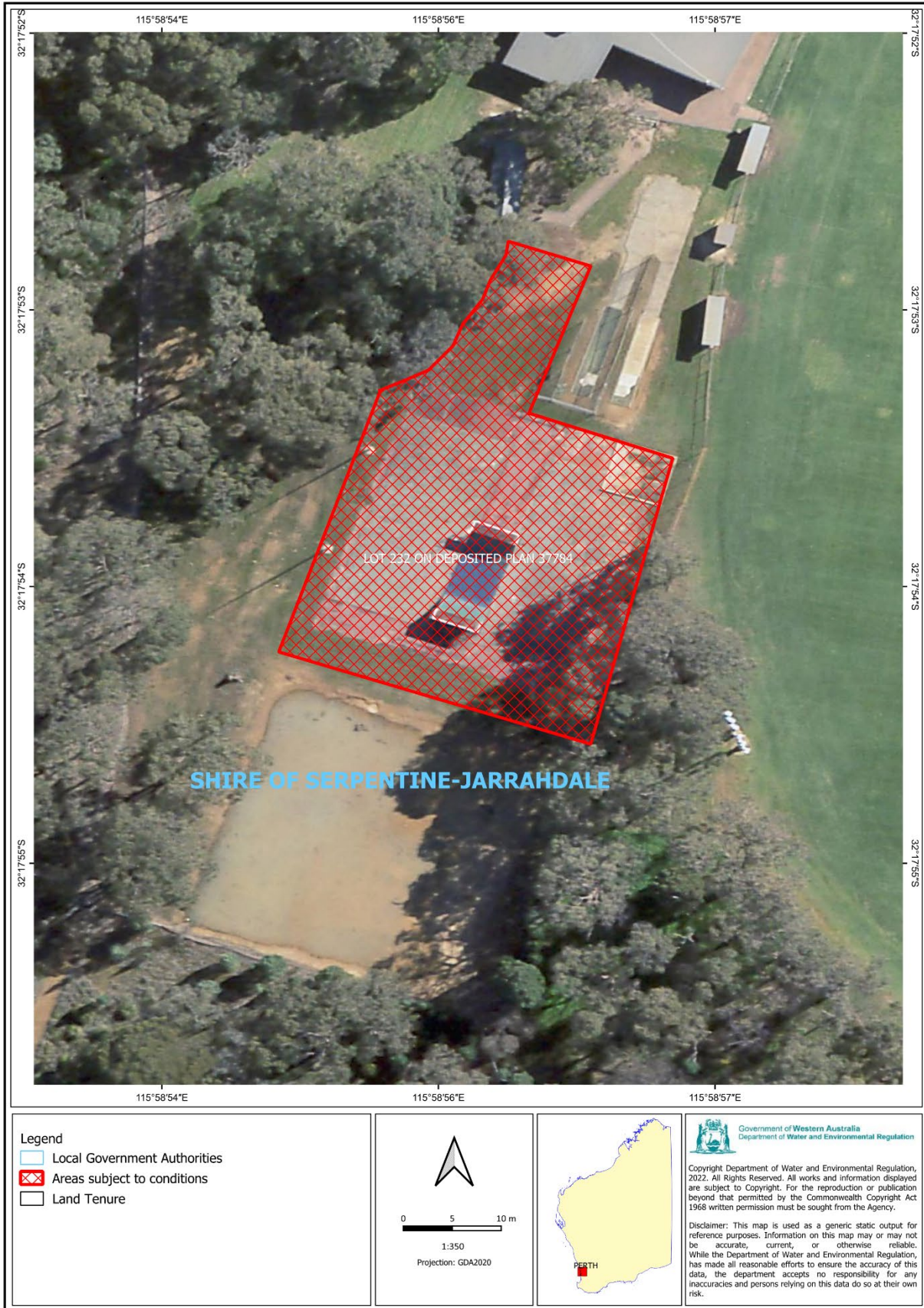
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Figure 1: Context Map of the application area. The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.



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Figure 2: Map of the application area. The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.



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Figure 3: Map of the offset area. The area crosshatched red indicates the area where revegetation and rehabilitation will occur.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)
- *State Planning Policy 2.8 - Bushland policy for the Perth Metropolitan Region* (2010) (SPP 2.8)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- *Environmental Offsets Guidelines* (August 2014)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a)
- Technical guidance – *Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Avoidance and minimisation measures

Supporting information submitted by the applicant (Shire of Serpentine Jarrahdale, 2025) demonstrated that several options to improve the safety of the intersection whilst avoiding the clearing of native vegetation were explored but not viable, including:

- Positioning the eastwards of its proposed position. However, the active railway track to the east side of the road prevented the ability to shift the roundabout in an easterly direction; and
- Relocating the roundabout northwards. However, this was not preferred given this option would require land acquisition and additional service relocations which may require additional clearing.

The current design will likely allow for several marri trees inside the south-western corner of the project area to be retained and protected during construction, including one potential black cockatoo habitat tree (Shire of Serpentine Jarrahdale, 2025). Given the above, the applicant determined that the current location was the most suitable option to minimise clearing to 0.052 hectares as well as reduce disruption to the adjacent critical power and rail services.

Mitigation measures

The applicant proposes to undertake the following mitigation measures as part of the project:

- **Dieback management:** The applicant will implement dieback management during earth works. This will involve working in drier weather where possible, cleaning mud and plant material from machinery and vehicles prior to accessing and leaving the project area, and seeking to utilise dieback-free and weed-free gravel and road material.
- **Seed collection:** The applicant will engage Landcare SJ to collect marri seeds from the cleared trees for use in local revegetation projects.
- **Tree marking:** The applicant will clearly mark the trees proposed to be cleared with flagging tape as well as clearly communicate to its contractors that only the taped trees are to be removed, and the remaining trees are to be retained and protected.
- **Qualified arborist:** The applicant will engage the services of a qualified arborist to perform the clearing works.
- **Habitat logs:** The applicant proposes to retain suitable habitat logs in situ post tree removal for use by small fauna and invertebrates that may be utilising the area.

- Replanting: The applicant will replant the roundabout island with local provenance low growing herbs, groundcovers, shrubs and salvaged grass trees representative of the Guildford complex within 12 months of the clearing.
- Mulching: The applicant will ensure all green waste generated through the proposed clearing is disposed of in an authorised waste facility or left on-site as mulch.

Conclusion

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values to the extent possible. However, after consideration of avoidance and mitigation measures, it was determined that offsets to counterbalance the significant residual impacts to foraging habitat for black cockatoo species, an extensively cleared vegetation complex (Guildford vegetation complex) and a Bush Forever area (site 260) was necessary. In accordance with the Government of Western Australia's *Environmental Offsets Policy* and *Environmental Offsets Guidelines*, these significant residual impacts have been addressed through the conditioning of environmental offset requirements on the permit. The nature and suitability of the offset provided are summarised in Section 4.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix B) identified that the impacts of the proposed clearing present a risk to biological values (fauna), significant remnant vegetation, conservation areas, and land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (fauna) - Clearing Principles (a) and (b)

Assessment

Noting the site characteristics (see Appendix A), the findings of a tree survey and habitat assessment (Natural Area, 2025), and the habitat preferences of the conservation significant fauna species recorded in the local area (10-kilometre radius), the application area is considered to contain suitable habitat for the following fauna species:

- *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) (listed as Vulnerable under the BC Act and EPBC Act),
- *Falco peregrinus* (peregrine falcon) (listed as other specially protected fauna species by DBCA),
- *Zanda baudinii* (Baudin's cockatoo) (listed as Endangered under the BC Act and EPBC Act), and
- *Zanda latirostris* (Carnaby's cockatoo) (listed as Endangered under the BC Act and EPBC Act).

Black cockatoo species

Breeding and roosting habitat

Collectively known as black cockatoo species, the forest red-tailed black-cockatoo, Baudin's cockatoo and Carnaby's cockatoo are known to nest in hollows of live and dead trees, including marri, jarrah (*Eucalyptus marginata*), karri (*Eucalyptus diversicolor*), wandoo (*Eucalyptus wandoo*), tuart (*Eucalyptus gomphocephala*), flooded gum (*Eucalyptus rudis*), and other *Eucalyptus* spp. (Commonwealth of Australia, 2022). 'Breeding habitat' for black cockatoos includes trees of these species that either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow, where suitable DBH for nest hollows is 500 millimetres for most tree species (Commonwealth of Australia, 2022). Habitat trees that provide potential breeding habitat may also represent suitable roosting habitat for black cockatoo species.

A tree survey and habitat assessment identified that the application area contains 19 marri trees, of which three trees are of a suitable DBH to produce nesting hollows and are considered potential breeding trees (Natural Area, 2025). However, no evidence of nesting was observed onsite and only one of the three potential breeding trees contained a hollow (Natural Area, 2025). The single hollow within the application area is not considered suitable for black cockatoo breeding as it is not of sufficient size (less than 50 millimetres entrance diameter and hollow entrance only 1.5 metres above ground) and was occupied by European honeybees at the time of the habitat assessment (Natural Area, 2025). Therefore, the proposed clearing will not result in the loss of suitable breeding trees for black cockatoo species.

The three large trees within the application area may provide suitable roosting habitat for black cockatoos. Roosting is typically noted to occur within suitable trees close to an important water source and within an area of quality foraging habitat (Commonwealth of Australia, 2022). The application area is located in close proximity to various tributaries of the Serpentine River System and contains primary foraging habitat, making it a suitable location for roosting. There is also a confirmed roosting site approximately 900 metres east of the application area, according to available databases. One forest red-tailed black cockatoo feather was found within the application area during the habitat assessment, however as evening surveys were not conducted, the presence of roosting individuals was not confirmed (Natural Area, 2025). In considering the above, black cockatoos have the potential to utilise the site for roosting. However, given the location of the application area on the edge of a linear roadside remnant, the lack of other mature trees, and the extent of clearing in the context of other confirmed roost sites in the local area, it is unlikely to provide significant roosting habitat.

Foraging habitat

Black cockatoo species are noted to forage on a range of plant species, with the primary foraging resources varying between species (Commonwealth of Australia, 2022). Carnaby's cockatoos forage on the seeds, nuts, and flowers of a variety of plants, including Proteaceous species (*Banksia* spp., *Hakea* spp., and *Grevillea* spp.), as well as Eucalyptus species and marri (Valentine and Stock, 2008). Forest red-tailed black cockatoos feed predominantly on the seeds of marri and jarrah, which comprise approximately 90 per cent of their diet (DEC, 2008). Baudin's cockatoos primarily feed on the seeds of marri, but may also forage on the seeds of jarrah and Proteaceous species (DEC, 2008).

Based on the tree survey and habitat assessment (Natural Area, 2025), the application area contains four species that provide foraging habitat for black cockatoos; marri, *Acacia saligna*, *Kingia australis* and *Xanthorrhoea preissii* (BCE, 2013; DEC, 2011). While marri is a primary foraging resource for all three species, *Acacia saligna*, *Kingia australis*, and *Xanthorrhoea preissii* are considered to be of lower foraging value when compared to other species (Stock et al., 2013) and provide only secondary or supplementary foraging habitat for Carnaby's and/or Baudin's cockatoos.

Critical habitat is defined as any habitat that provides for feeding, watering, regular night roosting, and potential for breeding for Carnaby's cockatoo (DPAW, 2013) and all marri, karri and jarrah forests, woodlands and remnants in the south-west of Western Australia receiving more than 600 millimetres of annual average rainfall for Baudin's and forest red-tailed black cockatoo (DEC, 2008). Foraging habitat within 12 kilometres of a nesting site and six kilometres of a roosting site is also of particular importance in supporting populations (Commonwealth of Australia, 2022; Le Roux, 2017; Glossop, et al., 2011; DPAW, 2013; DEC, 2008).

As the application area comprises primary foraging habitat (marri trees) on the Swan Coastal Plain, it meets the definition of critical habitat for all three black cockatoo species. While there are eight potential breeding sites within 12 kilometres of the application area, the closest confirmed breeding site is approximately 18 kilometres away and unlikely to be supported by the foraging habitat with the application area. However, according to available databases, there are five confirmed roost sites within six kilometres of the application area, the closest being 900 metres away. Evidence of foraging by forest red-tailed black cockatoos and potentially Carnaby's cockatoos in the form of chewed marri nuts was also observed within the application area during the habitat assessment, indicating current use by local flocks (Natural Area, 2025). Therefore, the application area is likely to support foraging by birds roosting locally.

While it is acknowledged that the application area represents less of 0.01 per cent of foraging habitat within six kilometres of the confirmed roosting sites, the cumulative loss of critical habitat on the Swan Coastal Plain represents a significant risk to local populations. The clearing of foraging habitat on the Swan Coastal Plain is also identified as a key threatening process for Carnaby's cockatoo, with the main factor limiting population growth of Carnaby's cockatoo and ensuring adult survival related directly to bottlenecks in and the ongoing removal of food resources on the Swan Coastal Plain (EPA, 2019; Williams, et al., 2017; Groom, 2015; DPAW, 2013; Stock, et al., 2013).

Noting the cumulative loss of foraging habitat on the Swan Coastal Plain and ongoing threats such as land clearing and fragmentation, weed invasion, and dieback in the region, the clearing of 0.052 hectares of critical habitat supporting roosting flocks represents a significant residual impact to black cockatoo foraging habitat.

Peregrine falcon

The peregrine falcon typically nests on rocky ledges in tall, vertical cliff faces and gorges, or in tall trees associated with drainage lines, and can hunt in a range of habitat types including timbered watercourses, riverine environments, wetlands, plains, open woodlands, and pylons and spires of buildings (Australian Museum, 2019). Given the application area contains remnant marri woodland, it may provide suitable dispersal and hunting habitat for the peregrine falcon. Noting that the peregrine falcon is a highly mobile species with a large home range that does not rely on specialist niche habitats, the species is likely to be transient in the application area only and it is unlikely that the application area represents significant habitat for the species.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.052 hectares that provides significant foraging habitat and potential roosting habitat for black cockatoo species. For the reasons set out above, it is considered that the impacts of the proposed clearing on black cockatoo foraging habitat represents a significant residual impact and requires counterbalancing through a suitable environmental offset (see Section 4).

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- directional clearing, requiring the permit holder to undertake slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity, and
- offset – revegetation and rehabilitation, requiring the permit holder to revegetate at least 0.13 hectares of significant foraging habitat for black cockatoo species within Lot 232 on Deposited Plan 37784 (Crown Reserve 4486).

3.2.2. Significant remnant vegetation (Guildford complex) - Clearing Principles (a) and (e)

Assessment

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). Further, the Environmental Protection Authority (EPA) recognises the Perth Metropolitan Region to be a constrained area, in which a minimum 10 per cent representation threshold for ecological communities is recommended (EPA, 2008).

While the current vegetation extent for the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the local area is above the 10 per cent threshold, remaining native vegetation within the mapped Swan Coastal Plain vegetation complex (Guildford Complex) is approximately 5.09 per cent (see Appendix C.2). The application area comprises a marri woodland that is typically associated with vegetation within the Guildford Complex.

Vegetation within the Guildford Complex has been extensively cleared and fragmented since 1750, having a median patch size of 0.945 hectares. The majority of remaining remnants mapped within this complex (approximately 73 per cent) are also less than two hectares in size and are likely to have been subject to historical disturbance and ongoing degradation through edge effects. Therefore, while it is acknowledged that the application area is in Degraded (Keighery, 1994) condition and lacks native understorey, it is considered to be broadly representative of the Guildford Complex given the presence of key canopy species and the context of remaining patches.

The further loss of vegetation representative of the Guildford Complex is a significant risk to the ongoing maintenance of the community, noting the extent of historical clearing and that only 0.32 per cent of the extent present pre-1750 (approximately six per cent of remaining remnants) persists in secure conservation estate. Therefore, the proposed clearing represents a significant residual impact to vegetation representative of the Guildford Complex.

Given the high weed load of the application area, it is possible that the proposed clearing will facilitate the spread of weeds and dieback into surrounding native vegetation within the Guildford Complex. A hygiene management condition will sufficiently minimise this risk.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.052 hectares of vegetation that is broadly representative of the extensively cleared Guildford Complex. For the reasons set out above, it is considered that the impacts of the proposed clearing on vegetation representative of the Guildford Complex represents a significant residual impact and requires counterbalancing through a suitable environmental offset (see Section 4).

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- weed and dieback management measures, requiring the permit holder to take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback to adjacent vegetation, and
- offset – revegetation and rehabilitation, requiring the permit holder to revegetate at least 0.03 hectares of native vegetation that is representative of the Guildford Complex within Lot 232 on Deposited Plan 37784 (Crown Reserve 4486).

3.2.3. Conservation areas - Clearing Principle (h)

Assessment

The southernmost portion of the application area (0.018 hectares) is located within Bush Forever Site 360 and has been identified as regionally significant bushland subject to the policy measures of SPP 2.8 (see Section 3.3).

The application area also intersects a mapped Perth Regional Ecological Linkage (PREL), representing broad links between Bush Forever Site 360 and several other Bush Forever areas (Sites 350, 362, 365) in the vicinity of the application area (Del Marco, et al., 2004). Given the fragmented nature of native vegetation in the local area and adjacent properties, the application area is likely to be contributing to linkage values between these conservation areas. However, noting the extent of the application area on the outer edge of Bush Forever Site 360 and that the mapped linkage has already been separated from the other local Bush Forever areas by Mundijong, Patterson, and Watkins Roads, the proposed clearing is unlikely to significantly alter the existing linkage values of the mapped PREL.

Advice received from the Department of Planning, Lands and Heritage (DPLH) (2025) indicates that the proposed clearing can be justified under SPP 2.8, given the applicant has taken reasonable steps to minimise impacts on native vegetation within Bush Forever Site 360 and the proposed clearing is a public work (road upgrades) being undertaken in the public interest (to address road safety issues). DPLH (2025) recommended that the following measures be implemented to ensure the integrity of Bush Forever Site 360 and other nearby sites are not compromised:

- Other than the native vegetation proposed to be cleared, no other disturbance or clearing of any other native vegetation within Bush Forever area 360 and 350 is to occur.
- No construction materials, earth spoil, or other debris to be disposed of within Bush Forever areas 360 and 350.
- Prior to the commencement of works, fencing, or other methods, should be installed between the boundary of Bush Forever areas 360 and 350 and the construction area to minimise impacts during construction and limit access to the Bush Forever areas once operational.
- The construction of the roundabout shall not result in additional drainage into Bush Forever areas 360, 350, and 365 to the south-east, noting the topography falls to the west and south of the proposed roundabout.
- An offset package is prepared and approved in accordance with the *WA Environmental Offsets Policy (2011)* and Appendix 4 of SPP 2.8, prior to the clearing of any native vegetation. It is recommended that there is a net environmental gain for any clearing undertaken within Bush Forever 360.

The Delegated Officer determined that an offset in accordance with Appendix 4 of SPP 2.8 is required to counterbalance the loss of vegetation within Bush Forever Site 360 and ensure there will be an environmental gain for the proposed clearing. The applicant has proposed to revegetate 0.13 hectares of within Lot 232 on Deposited Plan 37784 (Crown Reserve 4486), immediately adjacent to Bush Forever Site 360. This is sufficient to counterbalance the impacts to regionally significant bushland within Bush Forever Site 360 and align with SPP 2.8, noting that 0.036 hectares of suitable rehabilitation is required to counterbalance these impacts (refer to Section 4 for details).

The proposed clearing also has the potential to result in indirect impacts to habitat values in Bush Forever Site 360 and other nearby Bush Forever areas through the spread of weeds and other pathogens. Noting the location and extent of clearing on the edge of the Bush Forever area, a hygiene management condition will sufficiently minimise this risk.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.018 hectares of native vegetation within Bush Forever Site 360. There is potential for the clearing activities to result in the introduction or spread of

weeds and dieback into adjacent vegetation in Bush Forever sites 360, 365 and 350. It is considered that impacts to adjacent vegetation can be appropriately mitigated and managed through hygiene protocols.

For the reasons set out above, it is considered that the impacts of the proposed clearing on significant bushland within Bush Forever Site 360 constitutes a significant residual impact. In accordance with SPP 2.8, this significant residual impact has been addressed through the conditioning of environmental offset requirements, as outlined under Section 4.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- weed and dieback management measures, requiring the permit holder to take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback to adjacent vegetation, and
- offset – revegetation and rehabilitation, requiring the permit holder to revegetate 0.13 hectares of native vegetation.

3.3. Relevant planning instruments and other matters

The application area is within a road reserve, hence road upgrades are consistent with the land tenure.

4 Suitability of offsets

Assessment of impacts

The Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance and mitigation measures:

- Loss of 0.052 ha that provides significant foraging habitat for three black cockatoo species;
- Loss of 0.052 ha of native vegetation representative of an extensively cleared vegetation complex (Guildford vegetation complex);
- Loss of 0.018 ha within a Bush Forever Area site 360.

Offset

The offset proposed by the Shire consists of the revegetation and rehabilitation of 0.13 hectares of native vegetation within Lot 232 on Deposited Plan 37784 (Crown Reserve R 4486).

Rehabilitation and revegetation

The Shire has provided a 0.13-hectare area of land to be rehabilitated. The rehabilitation site is situated approximately 500 metres north west of the application area, within Lot 232, which is vested with the Shire (refer to Figures 3).

Lot 232 is currently zoned for 'recreational use' and contains portions of Bush forever site 360 within its remnant vegetation. Aerial imagery and photographs provided by the applicant indicate that the 0.13 hectares area proposed for rehabilitation, which is outside the Bush Forever boundary, contains no native vegetation as it previously contained redundant infrastructure, and is in a completely degraded (Keighery, 1994) condition (Shire of Serpentine Jarrahdale, 2025). This infrastructure has since been removed and will require ground works, including ripping and soil compaction removal prior to undertaking revegetation activities.

The rehabilitation and revegetation offset works includes:

- the planting 0.13 hectares of native vegetation that will provide suitable foraging habitat for black cockatoos;
- the revegetation of 0.03 hectares of native vegetation from completely degraded to good (Keighery, 1994) condition with species representative of the Guildford vegetation complex.

According to available databases, all three species of black cockatoo have been recorded within one kilometre of the proposed offset area. There are 25 roost sites recorded within 10 kilometres of the offset area, the closest roost site is approximately 250 metres east. The closest confirmed breeding site is approximately 18 kilometres.

The offset area is less than 30 metres from a mapped palusplain wetland which may provide seasonal watering sites for black cockatoos. The offset area is also within five kilometres of the Serpentine River. The offset area is mapped within the Guildford vegetation complex and is part of the mapped PREL. Given the above, the proposed offset area is considered to have a similar site context to the area proposed to be cleared.

In assessing whether the proposed offset is adequately proportionate to the significance of the impacts to an extensively cleared vegetation complex (Guildford vegetation complex) and black cockatoo foraging habitat, calculations using the WA Environmental Offset Metric Calculator were undertaken. The justifications for the values used in the offset calculations are provided under Appendix D.

In accordance with Appendix 4 of State Planning Policy 2.8, if clearing within a Bush Forever is required within vegetation of Very High Conservation significance, a net gain offset of at least two times the calculated loss in habitat hectares is required. As such, for clearing of 0.018 ha of Bush Forever area, rehabilitation of an area of at least 0.036 hectares would be required. Noting that an area of 0.13 hectares will be rehabilitated immediately adjacent to Bush Forever Site 360, which act as buffer from surrounding disturbance to this Bush Forever site, the rehabilitation offset is considered adequate to counterbalance impacts to clearing of the Bush Forever site 260.

The rehabilitation offset is considered to adequately counterbalance the proposed impact to extensively cleared vegetation complex (Guildford vegetation complex), black cockatoos foraging habitat and Bush Forever site 360.

End

Appendix A. Site characteristics

A.1. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix B.

Characteristic	Details
Local context	<p>The application area is part of an approximately six-hectare linear, isolated patch of roadside native vegetation in the intensive land use zone of Western Australia. It is adjacent to the Mundijong Road/Patterson Road intersection to the north, Watkins Road to the east, private freehold land to the south, and remnant native vegetation within Crown Reserve 23793 to the west. The proposed clearing area is on the edge of a roadside linkage.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 31 per cent of the original native vegetation cover (see Appendix A.2).</p>
Ecological linkage	<p>The application area intersects a mapped Perth Regional Ecological Linkage (PREL). The PREL dataset identifies regional ecological linkages mapped to broadly represent a link between patches of remnant vegetation judged to be of regional significance in the Perth Metropolitan Region (PMR) Scheme Area (Del Marco, et al., 2004). The mapped linkage represents broad links between several Bush Forever areas (Sites 350, 360, 362, 365) in the vicinity of the application area.</p> <p>The vegetation is contiguous with a patch of roadside remnant vegetation that provides a linear linkage between areas of native vegetation along Mundijong Road. The conservation values of the remnant were considered as part of the Roadside Conservation Committee (RCC) survey and mapping program for the Shire of Serpentine Jarrahdale in 2005. The patch was afforded a medium to high conservation value (10 and 7) as a biological corridor, indicating generally intact natural structure, high extent of native vegetation, and few to half weed (RCC, 2006).</p> <p>Given the fragmented nature of native vegetation in the local area and adjacent properties, the application area is likely to be contributing to linkage values between the remaining patches of native vegetation.</p>
Conservation areas	<p>The southernmost portion of the application area (0.018 hectares) intersects Bush Forever Site 360.</p>
Vegetation description	<p>A tree survey and habitat assessment (Natural Area, 2025) indicates that the vegetation within the application area consists of <i>Corymbia calophylla</i> woodland, described as a woodland of <i>Corymbia calophylla</i> (marri) over isolated <i>Xanthorrhoea preissii</i> shrubland over introduced herbland understorey. The full survey mapping is available in Appendix E.</p> <p>This is broadly consistent with the mapped Swan Coastal Plain vegetation complex; Guildford complex, described as a mixture of open forest to tall open forest of <i>Corymbia calophylla</i> (marri) - <i>Eucalyptus wandoo</i> (wandoo) - <i>Eucalyptus marginata</i> (jarrah) and woodland of <i>Eucalyptus wandoo</i> (wandoo) (with rare occurrences of <i>Eucalyptus lane-poolei</i> (salmon white gum)). Minor components include <i>Eucalyptus rudis</i> (flooded gum) - <i>Melaleuca raphiophylla</i> (swamp paperbark) (Heddlie et al., 1980).</p> <p>The mapped vegetation type retains approximately five per cent of the original extent (see Appendix A.2).</p>
Vegetation condition	<p>The tree survey and habitat assessment (Natural Area, 2025) indicates that the vegetation within the application area is in Degraded (Keighery, 1994) condition.</p>

Characteristic	Details
	The full Keighery (1994) condition rating scale is provided in Appendix C. The full survey mapping is available in Appendix E.
Climate and landform	<p>The application area is located on relatively flat topography.</p> <p>The region has a mean annual maximum temperature of 22.6°C and a mean annual minimum temperature of 10.7°C (BoM, 2025). The mean annual rainfall recorded at the nearest Bureau of Meteorology weather station (Mundijong) is 911.5 millimetres (BoM, 2025).</p>
Soil description and land degradation risk	<p>The soil within the application area is mapped as the Pinjarra P1b Phase (213Pj__P1b) soil system, described as flat to very gently undulating plain with deep acidic mottled yellow duplex (or effective duplex) soils (DPIRD, 2025). Moderately deep pale sand to loamy sand over clay: imperfectly drained and moderately susceptible to salinity in limited areas (DPIRD, 2025).</p> <p>The 213Pj__P1b soil type is mapped as having a low risk of land degradation resulting from water erosion, salinity, flooding, or phosphorous export, but are highly susceptible to wind erosion, waterlogging and subsurface acidification (DPIRD, 2025).</p>
Waterbodies and hydrogeography	<p>The desktop assessment identified that the southern portion of the application area (approximately 0.022 hectares) intersects a mapped Multiple Use Palusplain within the Geomorphic Wetlands of the Swan Coastal Plain dataset (UFI 16021).</p> <p>The application area does not intersect any mapped watercourses, with the closest natural source of surface water being a non-perennial minor tributary of the Serpentine River system, located approximately 200 metres south.</p> <p>The application area is mapped within the Serpentine Groundwater Area, proclaimed under the RIWI Act. The application area does not transect any proclaimed surface water areas.</p> <p>Groundwater salinity within the application area is mapped at 500-1000 milligrams per litre total dissolved solids.</p>
Flora	<p>The desktop assessment identified that a total of 43 conservation significant flora species have been recorded within the local area, comprising two Priority 1 (P1) flora, four Priority 2 (P2) flora, 20 Priority 3 (P3) flora, six Priority 4 (P4) flora, and 11 threatened flora. None of these existing records occur within the application area, with the closest record being an occurrence of <i>Diuris purdiei</i> (T) approximately 0.06 kilometres from the application area.</p> <p>No threatened or priority flora species were identified within the application area during a reconnaissance flora and vegetation survey undertaken as part of the tree survey and habitat assessment (Natural Area, 2025). Although the reconnaissance flora and vegetation survey was conducted in December 2024 (outside of the optimal season for flora surveys in the Swan Coastal Plain region), this is not considered to be a major limitation noting:</p> <ul style="list-style-type: none"> • most of the conservation significant flora species recorded in the local area (32 out of 43) are perennial species and, although not flowering, are likely to have been observed if present at the time of the summer survey, • the remaining conservation significant annual, tuberous or ephemeral flora species recorded in the local area (11 out of 43) are not typically associated with the habitat present in the application area and typically occur in wetland areas or Banksia woodland, and • the Degraded (Keighery, 1994) condition, high weed load, and distinct lack of native understorey within the application area make it unlikely to comprise a significant habitat for threatened or priority flora.

Characteristic	Details
	With consideration for the above, it is considered highly unlikely that threatened or priority flora species occur within the application area or will be impacted by the proposed clearing.
Ecological communities	<p>The desktop assessment identified that the closest mapped occurrence of a state or federally listed threatened ecological community is the Banksia Woodlands of the Swan Coastal Plain (Banksia Woodlands) ecological community, which is listed as an Endangered Threatened Ecological Community under the Commonwealth EPBC Act and is considered a Priority 3 Priority Ecological Community by DBCA in Western Australia. This mapped occurrence is located approximately 300 metres south-east of the application area, separated by road infrastructure and cleared rural land.</p> <p>Given the vegetation types observed (Natural Area, 2025), the Degraded (Keighery, 1994) condition, high weed load, and distinct lack of native understorey, the application area is considered unlikely to be representative of any threatened or priority ecological community.</p>
Fauna	<p>The desktop assessment identified that a total of 27 conservation significant fauna species have been recorded within the local area, including 10 threatened fauna, 10 priority fauna, five migratory fauna species listed under international agreement, one conservation dependent fauna, and one other specially protected fauna species. None of these records occur within the application area, with the closest record being an occurrence of <i>Zanda latirostris</i> (Carnaby's cockatoo) (T), recorded approximately 50 metres from the application area.</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), the habitat preferences of the aforementioned species, and the tree survey and habitat assessment of the application area (Natural Area, 2025), the application area may provide suitable habitat for four conservation significant fauna species and impacts to these species required further consideration (see Table A.3).</p>

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion**					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
Vegetation complex*					
Guildford Complex	90,513.13	4,607.91	5.09	287.49	0.32
Local area					
10-kilometre radius	31,522.04	9,906.92	31.43	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calyptrorhynchus banksii naso</i> (Forest red-tailed black cockatoo)	VU	Y	Y	0.97	205	Y
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	Y	2.23	6	Y
<i>Zanda baudinii</i> (Baudin's cockatoo)	EN	Y	Y	0.06	161	Y
<i>Zanda latirostris</i> (Carnaby's cockatoo)	EN	Y	Y	0.05	498	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u> The application area contains regionally significant vegetation including significant foraging habitat for black cockatoo species and vegetation that is representative of an extensively cleared vegetation complex within a Bush Forever Site.</p>	At variance	Yes Refer to Sections 3.2.1 and 3.2.2, above.
<p><u>Principle (b):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."</p> <p><u>Assessment:</u> The area proposed to be cleared contains significant foraging habitat for Carnaby's cockatoo, Baudin's cockatoo, and forest red-tailed black cockatoo.</p>	At variance	Yes Refer to Section 3.2.1, above.
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u> The area proposed to be cleared is unlikely to contain significant habitat for Threatened flora species given the site characteristics and available survey information.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."</p> <p><u>Assessment:</u> The area proposed to be cleared is not likely to contain vegetation representative of a threatened ecological community.</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> "Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."</p> <p><u>Assessment:</u> The extent of the mapped vegetation type (Guildford Complex) is inconsistent with the national objectives and targets for biodiversity conservation in Australia. While the application area is part of a significant ecological linkage in the local area, noting the extent and location of the application area the proposed clearing is unlikely to significantly impact this linkage.</p>	At variance	Yes Refer to Section 3.2.2, above.

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u> Given the application area is located within Bush Forever Site 360, the proposed clearing will have an impact on the environmental values of a conservation area.</p>	At variance	Yes <i>Refer to Section 3.2.3, above.</i>
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> A multiple use palusplain (UFI 16021) is mapped within the application area, however the vegetation within the application area is not riparian vegetation. Noting the large size of this mapped wetland and that a large portion of it does not appear to contain water or riparian vegetation, the portion of the application area within this mapped wetland is considered likely to represent the historical extent, and not the current extent.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u> The mapped soils are highly susceptible to wind erosion, waterlogging and subsurface acidification. However noting the extent of the application area and proposed end land use, the proposed clearing is considered unlikely to result in impacts from land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u> A multiple use palusplain (UFI 16021) is mapped within the application area, however the portion of the application area within this mapped wetland is considered likely to represent the historical extent, and not the current extent. Noting the distance to nearest surface waterbodies, no sensitive groundwater sources are present in the application area and the extent of the clearing, the proposed clearing is unlikely to impact upon surface or groundwater quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u> The mapped soils within the application area have a high risk of waterlogging. However, noting the topographic contours of the site and the disturbed nature of the vegetation, it is not considered likely that the proposed clearing will cause, or exacerbate, the incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Offset calculator value justification**Significant residual impact: black cockatoos**

Calculation	Score (Area)	Rationale
Conservation significance		
Description	Black Cockatoo foraging habitat	The application area includes vegetation that provides black cockatoo foraging habitat.
Type of environmental value	Species (flora/fauna)	Suitable habitat for black cockatoos.
Conservation significance of environmental value	Rare/threatened species – endangered	Carnaby's black cockatoo and Baudin's black cockatoo are listed as endangered under the BC Act (state) and EPBC Act (federal); forest red-tailed black cockatoo is listed as vulnerable under the BC Act (state) and EPBC Act (federal). The highest attribute was used for the calculation.
Landscape level value impacted	Yes/No	The impact is to foraging habitat in hectares
Significant impact		
Description	Clearing of native vegetation that comprises significant foraging habitat for all three species of black cockatoo	Marri woodland vegetation that provides significant foraging habitat for Baudin's cockatoo, Carnaby's cockatoo and forest red-tailed black cockatoo is proposed to be cleared for road upgrades.
Significant impact (hectares)	0.05	Based on surveys, the entire 0.052 application area contains primary foraging habitat for all three black cockatoo species on the SCP.
Quality (scale)	5.00	The following was considered in this score: -application area comprises primary foraging habitat (marri trees) on the Swan Coastal Plain -eight potential breeding sites within 12 kilometres of the

Calculation	Score (Area)	Rationale
		<p>application area</p> <p>-closest confirmed breeding site is approximately 18 kilometres away</p> <p>-five confirmed roost sites within six kilometres of the application area, the closest being 900 metres away.</p> <p>-Evidence of foraging by forest red-tailed black cockatoos and potentially Carnaby's cockatoos in the form of chewed marri nuts was also observed within the application area during the habitat assessment</p> <p>-application area represents less than 0.01 per cent of foraging habitat within six kilometres of the confirmed roosting sites</p>
Rehabilitation credit		
N/A		None proposed
Offset		
Description	Planting black cockatoo foraging habitat	The planting of native trees considered preferred foraging species for all three black cockatoos, over bare ground within an extensively cleared landscape
proposed offset (area in hectares)	0.13	The area required to counterbalance 100% of significant residual impact (SRI) of the proposed clearing is 0.13 hectares.
Current quality of offset site	0	Trees will be planted in an area that is currently bare ground (completely degraded)
Future quality WITHOUT offset	0	It is considered unlikely the habitat quality will increase without active revegetation
Future quality WITH offset	5.00	The habitat quality of the offset site is considered to increase to high quality foraging habitat by planting trees that are suitable foraging species for black cockatoos
Time until ecological benefit (years)	17	Average time until planted vegetation can be used as foraging habitat by black cockatoos. An extra two years has been added to account for the delay in commencement of the revegetation (assumed to commence within two years of the permit start date).
Confidence in offset result (%)	80	Moderate to high level of confidence that the quality within the rehabilitated areas will improve with best practice revegetation techniques and appropriate completion criteria.
Duration of offset implementation (maximum 20 years)	20	Maximum value applied noting the vegetation is not to be cleared in the future
Time until offset site secured (years)	1	The offset is proposed within land tenure currently held by the applicant.
Risk of future loss WITHOUT offset (%)	15%	There is a moderate to low risk of loss given the offset area is within a Shire managed reserve for the purpose of recreation.
Risk of future loss WITH offset (%)	15%	<p>The risk of loss is not considered to change with the proposed offset as the bare areas are within a Shire managed reserve and no further security mechanisms are proposed (e.g. changing purpose of reserve to conservation). While a risk of loss of lower than 15% would be preferable, it is considered acceptable in this instance , given:</p> <ul style="list-style-type: none"> the proposed offset will fill a gap in an otherwise intact remnant of native vegetation (being a Bush Forever Site) close to the impact site which is a preferred environmental outcome

Calculation	Score (Area)	Rationale
		• in accordance with appeal determination 018-22, a degree of protection is afforded to the vegetation in the offset area given the vegetation will be planted for conservation purposes and any future clearing would be subject to the requirements of Part V of the EP Act.

Significant residual impact: Guildford complex

Calculation	Score (Area)	Rationale
Conservation significance		
Description	Significant remnant vegetation	The application area includes vegetation representative of the highly cleared Guildford complex
Type of environmental value	Vegetation/habitat	Suitable habitat for black cockatoos.
Conservation significance of environmental value	Terrestrial native vegetation complex - <10% remaining in a constrained area	5.09% of the pre-European extent of the Guildford complex remains.
Landscape level value impacted	Yes/No	The impact to the Guildford complex is in hectares
Significant impact		
Description	Clearing of native vegetation that comprises significant foraging habitat for all three species of black cockatoo	Vegetation type, <i>Corymbia calophylla</i> (marri) over isolated <i>Xanthorrhoea preissii</i> shrubland over introduced hermland understorey, is broadly representative of the Guildford complex.
Significant impact (hectares)	0.05	Based on surveys, the entire 0.052 application area is representative of the Guildford complex.
Quality (scale)	2	Vegetation in Degraded condition.
Rehabilitation credit		
N/A		None proposed
Offset		
Description	The planting of native vegetation with species representative of the Guildford complex, over bare ground	The planting of vegetation representative of the Guildford complex, over bare ground within an extensively cleared landscape within Lot 232 on Deposited Plan 37784.
proposed offset (area in hectares)	0.03	The area required to counterbalance 100% of significant residual impact (SRI) of the proposed clearing is 0.03 hectares.
Current quality of offset site	0	Trees will be planted in an area that is currently bare ground (completely degraded)
Future quality WITHOUT offset	0	It is considered unlikely the vegetation condition will increase without active revegetation

Calculation	Score (Area)	Rationale
Future quality WITH offset	5.00	Revegetation to reach Good condition.
Time until ecological benefit (years)	12	Average time until planted vegetation would reach Good condition plus an extra two years to account for the delay in commencement of the revegetation (assumed to commence within two years of the permit start date).
Confidence in offset result (%)	80	Moderate to high level of confidence that the quality within the rehabilitated areas will improve with best practice revegetation techniques and appropriate completion criteria.
Duration of offset implementation (maximum 20 years)	20	Maximum value applied noting the vegetation is not to be cleared in the future
Time until offset site secured (years)	1	The offset is proposed within land tenure currently held by the applicant.
Risk of future loss WITHOUT offset (%)	15%	There is a moderate to low risk of loss given the offset area is within a Shire managed reserve for the purpose of recreation.
Risk of future loss WITH offset (%)	15%	<p>The risk of loss is not considered to change with the proposed offset as the bare areas are within a Shire managed reserve and no further security mechanisms are proposed (e.g. changing purpose of reserve to conservation). While a risk of loss of lower than 15% would be preferable, it is considered acceptable in this instance only, given:</p> <ul style="list-style-type: none"> • the proposed offset will fill a gap in an otherwise intact remnant of native vegetation (being a Bush Forever Site) close to the impact site which is a preferred environmental outcome • in accordance with appeal determination 018-22, a degree of protection is afforded to the vegetation in the offset area given the vegetation will be planted for conservation purposes and any future clearing would be subject to the requirements of Part V of the EP Act.

Appendix E. Survey data and site photographs

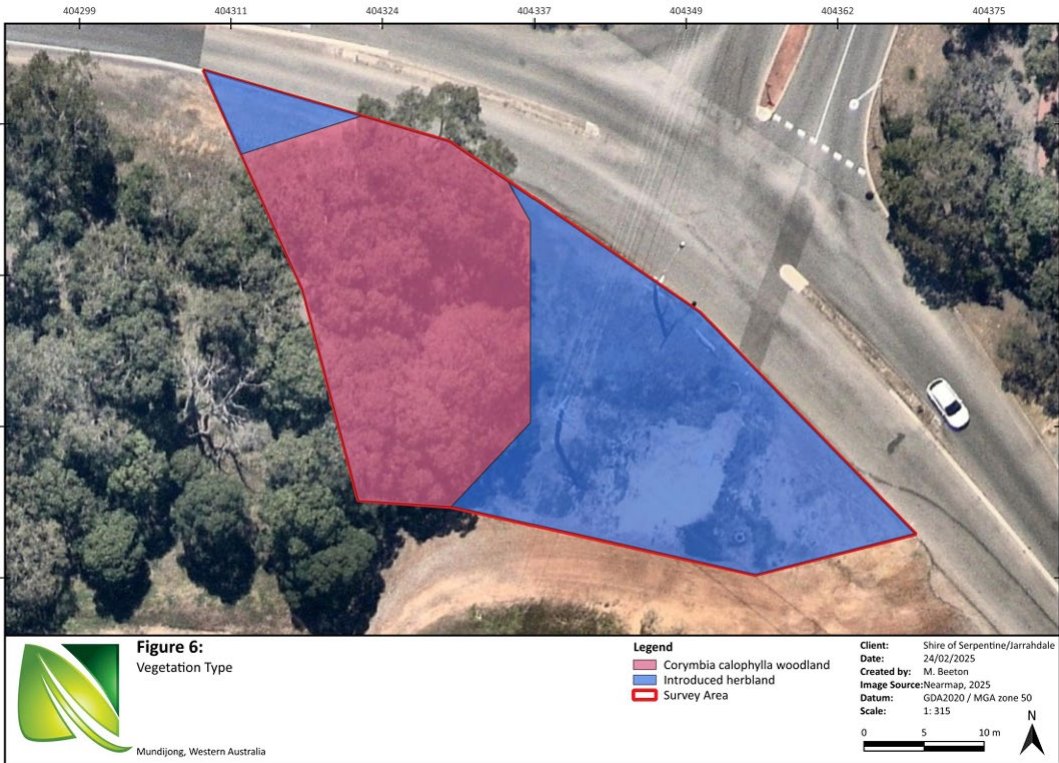


Figure E.1. Vegetation type mapped within the application area (Natural Area, 2025).



Figure E.2. Vegetation condition mapped within the application area (Natural Area, 2025).



Figure E.3. Vegetation within the application area (Natural Area, 2025).



Figure E.4. Examples of black cockatoo foraging evidence within the application area (Natural Area, 2025).

Appendix F. Sources of information

F.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)

- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

F.2. References

- Bamford Consulting Ecologists (BCE) (2013) *Plants known to be used for foraging, roosting and nesting by black cockatoos in south-western Western Australia*. Data compiled from the literature (Davies, 1966; Saunders, 1974, 1979a, b, 1980; Saunders *et al.* 1982; Saunders, 1986; Johnstone and Storr, 1998; Higgins 1999; Johnstone and Kirkby, 1999, 2008; Groom, 2011; Johnstone *et al.* 2011; DSEWPaC, 2012a, b; c, R. Johnstone pers. comm.) in Bamford (2013) Wedgetail Circle, Parkerville Fauna Assessment. Prepared for Coterra Environment. Bamford Consulting Ecologists. Prepared by Jeff Turpin, Simon Cherriman and Mike Bamford. 14th August 2013.
- Bureau of Meteorology (BoM) (2025). *Climate Data Online*. Commonwealth of Australia, Canberra, ACT. Available from: <http://www.bom.gov.au/climate/data/> (accessed August 2025).
- Commonwealth of Australia (2001). *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.
- Commonwealth of Australia (2022). *Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black cockatoo*. Department of Agriculture, Water and the Environment, Canberra.
- Del Marco, A., Western Australian Local Government Association, and Perth Biodiversity Project (W.A.) (2004). *Local government biodiversity planning guidelines for the Perth Metropolitan Region*. Western Australian Local Government Association, West Perth, Western Australia.

- Department of Environment and Conservation (DEC) (2008). *Forest black cockatoo (Baudin's cockatoo, Calyptorhynchus baudinii, and forest red-tailed black cockatoo, Calyptorhynchus banksii naso) Recovery Plan*. Department of Environment and Conservation, Canberra.
- Department of Environment and Conservation (DEC) (2011). *Plants Used by Carnaby's Black Cockatoo*. List prepared by Christine Groom, Department of Environment and Conservation, Canberra.
- Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.
- Department of Parks and Wildlife (2013). *Carnaby's cockatoo (Calyptorhynchus latirostris) Recovery Plan*. Department of Parks and Wildlife, Perth, Western Australia
- Department of Primary Industries and Regional Development (DPIRD) (2025). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development*. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed August 2025).
- Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.
- Environmental Protection Authority (EPA) (2008). *Environmental Guidance for Planning and Development Guidance Statement No 33*. Environmental Protection Authority, Western Australia.
- Environmental Protection Authority (EPA) (2016). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf.
- Environmental Protection Authority (EPA) (2019) *EPA Technical Report: Carnaby's Cockatoo in Environmental Impact Assessment in the Perth and Peel Region. Advice of the Environmental Protection Authority under Section 16(j) of the Environmental Protection Act 1986*. Environmental Protection Authority, Western Australia.
- Environmental Protection Authority (EPA) (2020). *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/2020.09.17%20-%20EPA%20Technical%20Guidance%20-%20Vertebrate%20Fauna%20Surveys%20-%20Final.pdf.
- Glossop, B., Clarke, K., Mitchell, D. and Barrett, G. (2011). *Methods for mapping of Carnaby's cockatoo habitat*. Department of Environment and Conservation, Bentley.
- Government of Western Australia (2019a). *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth. Available from: <https://catalogue.data.wa.gov.au/dataset/dbca>.
- Government of Western Australia (2019b). *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth. Available from: <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>.
- Groom, C. (2015). *Roost site fidelity and resource use by Carnaby's Cockatoo (Calyptorhynchus latirostris), on the Swan Coastal Plain, Western Australia*. Thesis submitted for the degree of Doctor of Philosophy, University of Western Australia, Crawley.
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980). *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

- Keighery, B.J. (1994). *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Le Roux, C. (2011). *Nocturnal roost tree, roost site and landscape characteristics of Carnaby's Black-Cockatoo (Calyptorhynchus latirostris) on the Swan Coastal Plain*. Thesis submitted for Degree Master of Science, Edith Cowan University, Joondalup.
- Natural Area Holdings Pty Ltd (Natural Area) (2025). *Shire of Serpentine Jarrahdale Paterson Mundijong Roundabout Tree Survey and Habitat Assessment*, received 16 May 2025 (DWER Ref: DWERDT1120948).
- Roadside Conservation Committee (RCC) (2006). *Roadside Vegetation and Conservation Values in the Shire of Serpentine-Jarrahdale*. WA Roadside Conservation Committee, Perth Western Australia. Available from: [065669.pdf](#).
- Stock, W., Finn, H., Parker, J. and Dodds, K. (2013). *Pine as fast food: foraging ecology of an endangered cockatoo in a forestry landscape*, PlosOne 2013, 8(4), pp. 1-12.
- Shire of Serpentine Jarrahdale (2025). *Clearing permit application CPS 11081/1*, received 16 May 2025 (DWER Ref: DWERDT1120948).
- Valentine, L.E. and Stock, W. (2008). *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnangara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.
- Williams, M.R., Yates, C.J., Saunders, D., Dawson, R., and Barrett, G.W. (2017). *Combined demographic and resource models quantify the effects of potential land-use change on the endangered Carnaby's Cockatoo (Calyptorhynchus latirostris)*, Biological Conservation 2017, 210, pp. 8-15.