



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9134/1
File Number: DWERVT7092
Duration of Permit: From 19 December 2022 19 December 2024

PERMIT HOLDER

Nigel Lea Rowe on behalf of Douglas Rowe

LAND ON WHICH CLEARING IS TO BE DONE

Lot 24 on Plan 71716, Frankland River

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.21 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. 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.

2. 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.

3. 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 Geocentric Datum Australia 1994/2020 (GDA94/2020), 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); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; and (f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 2.

4. Reporting

The permit holder must provide to the *CEO* the records required under condition 3 of this permit when requested by the *CEO*.


DEFINITIONS

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

Table 2: Definitions

Term	Definition
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.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
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 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression
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.
weeds	means any plant – (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



Meenu Vitarana
Manager

NATIVE VEGETATION REGULATION

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

25 November 2022

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).



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



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9134/1
Permit type:	Area permit
Applicant name:	Mr Nigel Lea Rowe on behalf of Douglas Rowe
Application received:	3 December 2020
Application area:	100 hectares of native vegetation
Purpose of clearing:	Truck access
Method of clearing:	Mechanical
Property:	Lot 24 on Deposited Plan 71716
Location (LGA area/s):	Shire of Cranbrook
Localities (suburb/s):	Frankland River

1.2. Description of clearing activities

The original application was approximately 100 hectares over two areas (see Figure 1, and Figure 2, Section 1.5) to selectively clear trees and shrubs to allow for pasture, cropping and a dam. As noted within Section 3.1, the application area was reduced to an area of 0.21 hectares for the purpose of truck access.

1.3. Decision on application

Decision:	Granted
Decision date:	25 November 2022
Decision area:	0.21 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 five submissions were received. Consideration of matters raised in the public submissions is summarised in Appendix A.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix C), relevant datasets (see Appendix F.1), photographs provided by the applicant, the clearing principles set out in Schedule 5 of the EP Act (see Appendix D), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the revised application area (from 100 hectares to 0.21 hectares) and purpose of the clearing is to improve vehicle safety by voiding a sharp corner and incline.

The assessment identified that the proposed clearing will result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values

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 proposed clearing is unlikely to lead to have long-term adverse impacts on environmental values.

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

1.5. Site maps

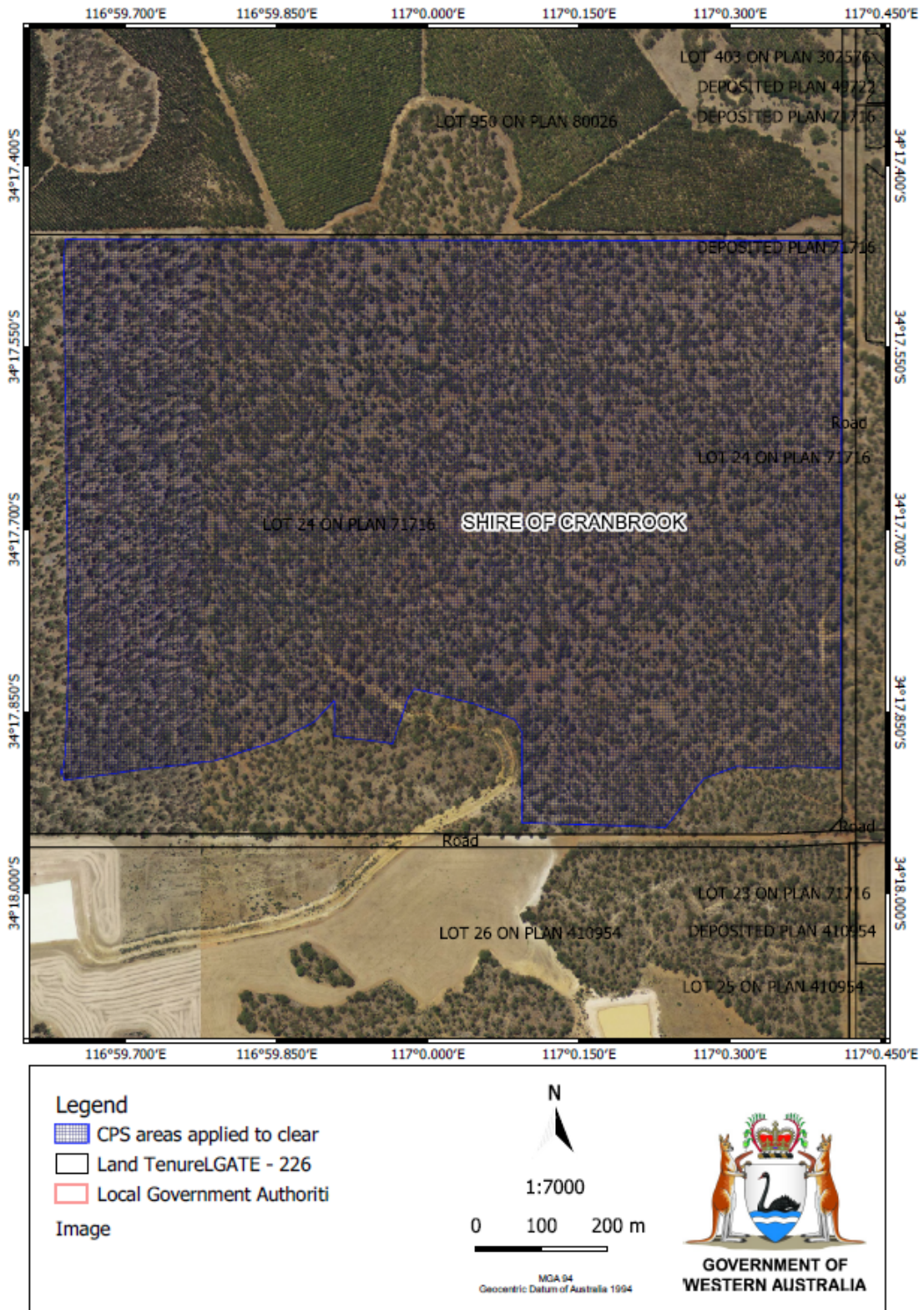


Figure 1 Map of the original application area (western section)

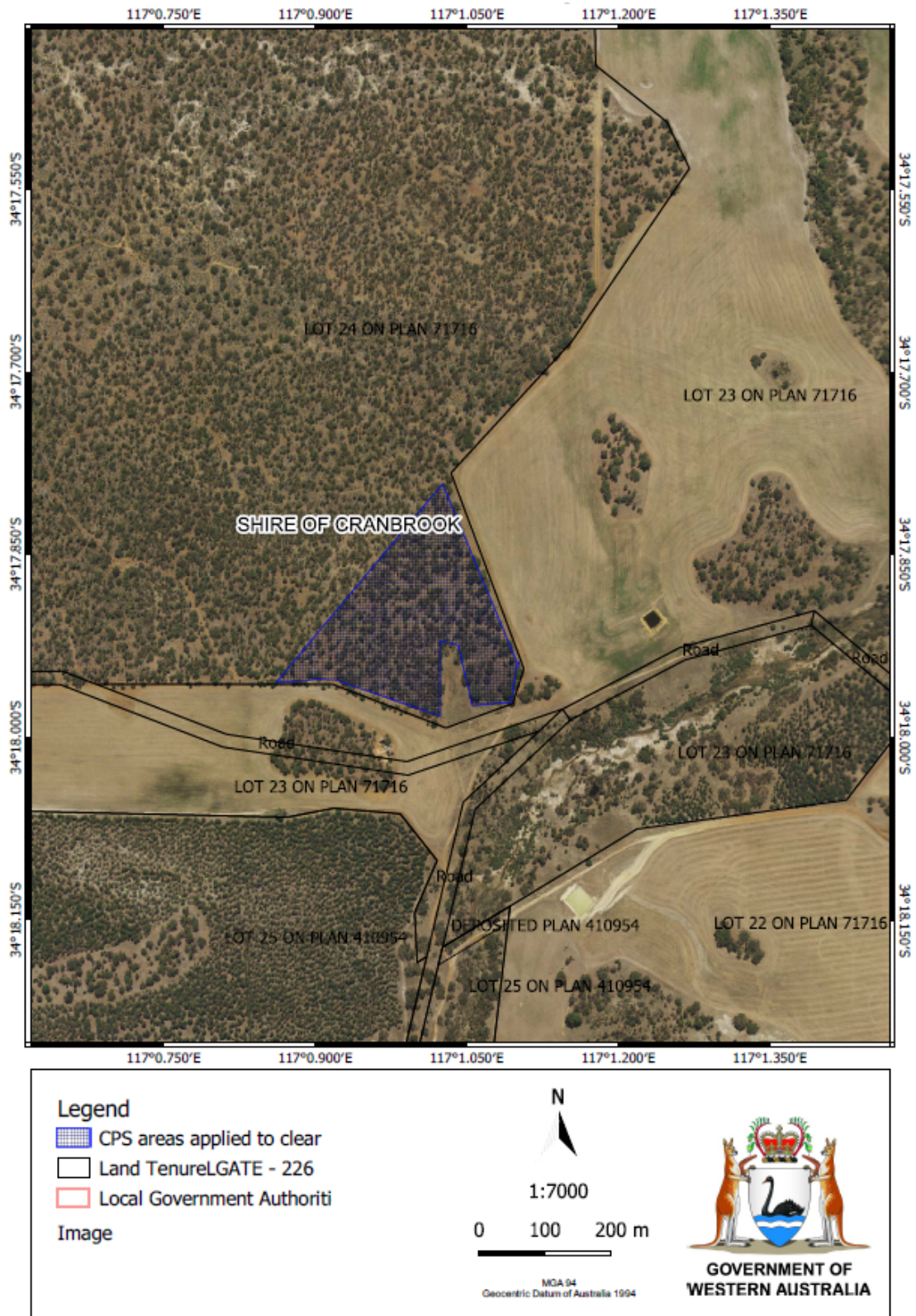


Figure 2 Map of the original application area (eastern section)



Figure 3 Map of the revised application area

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 polluter pays principle
- 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)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)

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)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

During the assessment process, the application area was reduced by the applicant from 100 hectares, then to 50 hectares, then to 30.2 hectares with a final reduction to 0.21 hectares. The reduction was a result of a response to discussions, information and advice received from the Commissioner of Soil and Land Conservation (CSLC, 2021) noting the proposed clearing was at variance to principle (g) due to the likelihood of increased salinity in the area.

The initial application area of 100 hectares is shown in Figures 1 and 2 and the final area approved under this application is in Figure 3. The revised area of 0.21 hectares follows an informal track through the vegetation and avoids significant impacts to flora, fauna and the land degradation issues that were identified under the previous versions of application areas.

The applicant provided rationale for the track which is mostly for vehicle safety reasons. The applicant advised that currently trucks go around the vegetation at the south-eastern corner which has a steep area and a hard left-hand turn going up the hill which causes trucks to break traction when empty. The applicant also advised when trucks are full, they still must navigate a hard turn which is dangerous and that if drivers miss a gear or lose momentum, they can become stuck.

The applicant acknowledged that tracks are already within the remnant vegetation but noted these were from previous owners and were winding and too narrow which also makes it difficult for trucks and other agricultural machinery.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix C) 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 **Error! Reference source not found.**) identified that the impacts of the proposed clearing present a risk to adjacent vegetation. 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 Principle (b)

Assessment

Five avian species have been recorded in the local area including Muir's Corella (*Cacatua pastinator pastinator*), Baudin's cockatoo (*Zanda baudinii*), Carnaby's cockatoo (*Zanda latirostris*), forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) and Western rosella (*Platycercus icterotis*).

Muir's Corella has a limited distribution, with the western extent of Manjimup, eastern extent of Kojonup, northern extent of Boyup Brook and the south-eastern extent between Rocky Gully and Mount Barker. Known breeding locations occur on private properties near Rocky Gully, Lake Muir, and Tonebridge/Mordalup. The species feeds on a wide variety of corms, tubers and seeds from both introduced and native plant species, and insect larvae (DPAW, 2015) but predominantly eating the corms of introduced 'Guildford grass' (*Romulea rosea*). Native species that form the diet for the species include *Drosera* spp. and the seeds of marri (*Corymbia calophylla*). Threats to the species include introduced corella species, feral honeybees, loss of habitat through clearing, lack of recruitment of future habitat trees and salinity (DPAW, 2015).

Baudin's cockatoo breed in woodland or forest and isolated trees that were part of a former forest/woodland and nest in hollows of live or dead karri (*Eucalyptus diversicolor*), marri (*Corymbia calophylla*), wandoo (*Eucalyptus wandoo*), and tuart (*Eucalyptus gomphocephala*). Foraging habitat for the species includes Eucalypt woodlands and forest and proteaceous heath. Common foraging items for the species include parts of marri trees including the seeds, nectar, flowers and proteaceous trees and shrubs. Night roosting habitat for the species occurs in or near riparian environments or other permanent water sources. A variety of trees can comprise night roosting habitat including jarrah, marri, flooded gum, blackbutt, tuart and introduced eucalypt species (DCCEEW, 2022). The application area is within the mapped distribution for the species.

Carnaby's cockatoo breed in woodland or forest and isolated trees that were part of a former forest/woodland and breed in hollows of live or dead salmon gums (*Eucalyptus salmonophloia*), wandoo, tuart, jarrah (*Eucalyptus marginata*), flooded gum (*Eucalyptus rudis*), York gum (*Eucalyptus loxophleba subsp. loxophleba*), powder bark (*Eucalyptus accedens*), karri and marri. Foraging habitat for the species includes parts of proteaceous species (seeds, flowers, nectar) of species which include *Banksia* spp., *Hakea* spp, *Dryandra* spp, *Eucalyptus* and *Callistemon*. Carnaby's will also forage on seeds of introduced species including *Pinus* spp., *Erodium* spp, and nut and fruit trees. Night roosting habitat for the species includes areas in or near riparian environments or natural/artificial permanent water sources. Species that may form night roosting habitat include flat-topped yate (*Eucalyptus occidentalis*), salmon gum, wandoo, marri, karri, blackbutt, tuart and introduced species (DCCEEW, 2022). The application area is within the mapped breeding distribution of the species.

Forest red-tailed black cockatoo breed in woodland or forest and isolated trees that were part of a former forest/woodland. The cockatoo species nest in hollows of live or dead marri, karri, wandoo, bullich (*Eucalyptus megacarpa*), blackbutt, tuart and jarrah trees. Night roosting habitat for the species includes trees on edges or within forests including tall jarrah, marri, blackbutt, tuart and introduced Eucalypts. Foraging habitat for the species includes marri and jarrah woodlands and forest, edges of karri forest including wandoo and blackbutt within the range to the species. The species is known to forage in seeds of marri, jarrah, *Eucalyptus caesia*, *Eucalyptus erythrocorys* and some introduced Eucalypts (DCCEEW, 2022). The application area is within the core habitat for this species.

The Western rosella is known from one record within the local area. Western Rosellas eat the seeds of grasses and other plants, as well as fruits, flowers, insects, and their larvae. They feed on the ground, in the foliage of trees and shrubs, in open areas of pasture, on roadsides, golf courses, stubble paddocks and on spilt grain. Western Rosellas choose a nest hollow in a limb or tree trunk, usually one metre or more deep, with wood dust in the bottom (BirdLife, 2022)

South-western brush-tailed phascogale is known to occur between Perth and Albany in low densities in the northern Jarrah forest. Observations of the species have occurred within dry sclerophyll forests and open woodlands that contain hollow-bearing trees with records being less common in high rainfall areas. The species is arboreal, foraging almost exclusively among the tree canopies. Nest sites can vary but include hollow tree limbs, rotten stumps and even bird nests. Threatening processes for the species include clearing, fragmentation and alteration by logging and mining. The reduced availability of tree hollows increases the susceptibility of the species to predation by foxes and cats. (DEC 2012).

The western brush wallaby, southwestern brown bandicoot and Western quoll may use the application area as they move across the landscape and the species may reside within the larger remnant noting its extent of 229 hectares.

Mallee fowl are found in arid and semi-arid areas dominated by mallee eucalypts on sandy soils. They are known to also occur in Mulga (*Acacia aneura*), Broombush (*Melaleuca uncinata*), Scrub Pine (*Callitris verrucosa*), *Eucalyptus* woodlands and coastal heathlands. Mallee fowl require abundant leaf litter and a sandy substrate for the successful construction of nest mounds (DPAW, 2016).

Bilby (*Macrotis lagotis*) have not been recorded within the local area for more than 40 years. Given this and considering the small extent of the application area and the considerable extent remaining adjacent, it is considered the application area is not likely to provide significant habitat for this species.

Conclusion:

Considering the reduction of the application area to 0.21 hectares, the remaining remnant of approximately 229 hectares at the property and the photographs provided by the applicant within Appendix B, the proposed clearing is not likely to have a significant impact on habitat for the species above. The application area does not appear to contain trees with large hollows suitable for breeding for cockatoos or significant habitat for the south-western brush-tailed phascogale and provides only minor foraging habitat for black cockatoo species in the form of eucalypt species, *Corymbia* species and *Banksia sessilis*, as identified by the photographs of the revised application area. Additionally, the revised area is toward the furthest extent of the large remnant, closest to the disturbances of agriculture, it is not likely to be preferred habitat for the species listed above.

Conditions:

No conditions

3.2.2. Biological values (flora) - Clearing Principles (a) and (c)

Assessment

Within the local area there are records of four threatened flora species. The closest record and most frequently occurring (recorded three times in local area) is *Gastrolobium lehmannii*. This species is known from 20 records (WA Herbarium) from six isolated populations near Tunney, northwest of Albany. The estimated combined total number of mature plants from these six populations is 1600, and the species' extent of occurrence is 300 km² (south west and South Coast Regions) (DCCEEW, 2006) The species has been recorded within loamy gravel soils within various vegetation types which have similarities to the vegetation types mapped within the application area. Considering the application area is 18 kilometres from a record of this species and the photographs provided do not indicate the presence of any large shrubs, the species is considered unlikely to be present within the 0.21-hectare application area.

The other three species of threatened flora within the local area are associated with watercourses and therefore not considered as likely to occur within the application area.

Additionally, four priority listed flora have been recorded within the local area including.

- *Acacia parkerae* (P3)
- *Tetratheca exasperata* (P3)
- *Synaphea otio stigma* (P3)
- *Caladenia integra* (P4)

The species listed above have been recorded in similar vegetation types to those mapped within the application area but only the species *Synaphea otio stigma*, *Tetratheca exasperata* and *Caladenia integra* have been recorded within similar soil types.

Priority 3 species are poorly known species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat.

Priority 4 species are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Conclusion

Noting the low potential for the species listed above to occur within the application area, the conservation status of those species and the extent of the proposed clearing under the revised application area, the proposed clearing is not considered to impact on conservation significant flora species.

Conditions:

Noting the conclusion above, no conditions are proposed.

3.2.3. Environmental value – significant remnant vegetation and conservation areas - Clearing Principles (e and h)

Assessment:

The application area is within the Jarrah Forest IBRA region and is within a mapped vegetation complex, Jingalup 4. The vegetation complex retains 27 per cent of its pre-European extent and the local area retains approximately 28 per cent of its pre-European extent. The National Objectives and Targets for Biodiversity Conservation include a target to prevent the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement (Commonwealth of Australia, 2001), noting this, the proposed clearing is not aligned with this objective. It is noted under sections 3.2.1 and 3.2.2, that the proposed clearing of 0.21 hectares is not considered to have a significant residual impact on conservation significant flora, fauna and biological.

The application is located approximately 400 meters south of a mapped ecological linkage (south coast linkage). Given the linkage runs east west within this area and is not intersected by the proposed clearing it is considered that the proposed clearing will not impact the linkage values of the mapped linkage or any other local linkages. Additionally, the proposed clearing area is toward the furthest extent of the larger remnant and therefore has limited impacts on the fragmentation of the larger remnant.

On this basis, and noting the extent of the proposed clearing, the application area is unlikely to be significant as a remnant of native vegetation in an area that has been extensively cleared.

The proposed clearing area abuts other large patches of remnants. It is anticipated that the proposed clearing presents risk of degradation to neighbouring remnants in the form of weeds and dieback.

Conclusion:

The proposed clearing on 0.21 hectares of native vegetation is not considered significant as a remnant of native vegetation in an area that has been extensively cleared.

Conditions:

Noting the above, a permit to clear is conditioned with a weed and dieback management condition.

3.3. Relevant planning instruments and other matters

In response to the original application area of 100 hectares, the Shire of Cranbrook advised DWER that local government approvals are required, as the proposed clearing was significant. The Shire noted the subject lot is zoned as 'Rural' under Local Planning Scheme No 4 (Shire of Cranbrook, 2021).

Noting the reduction of the proposed clearing to 0.21 hectares from 100 hectares and the revised purpose, the proposed clearing does not require local government approvals. The minimisation measures applied by the applicant are aligned with the Shires objective of this zoning which includes; minimising clearing of remnant vegetation and encouraging retention and protection of remnant vegetation.

No Aboriginal sites of significance have been mapped within the application area. The application area is within the Yeriminup / Frankland Hunting and Camping Areas. This site is not registered as a heritage site at the time of writing. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Details of public submissions

During the advertising period (17 December 2020 – 07 January 2021), five submissions were received in relation to the original application. The comments are summarised below. It is noted that the submissions were received in relation to the original application area of 100 hectares so are not as relevant to the revised area of 0.21 hectares.

Summary of comments	Consideration of comment
An offset cannot include planted non-native vegetation	Non-native planted vegetation cannot be considered as an offset. An offset is not required for the revised area of 0.21 hectares.
Clearing will impact environmental values of adjacent/nearby areas of native vegetation	This is considered under Principle e and h; impacts are considered minimal for the revised area of 0.21 hectares.
The clearing is likely to cause appreciable land degradation	This is considered under Principle g. Land degradation impacts are considered unlikely for the revised area of 0.21 hectares.
Cumulative impact	Cumulative impacts are considered minimal for the revised area of 0.21 hectares.
The clearing is likely to cause deterioration to quality of surface and underground water	Considered under Principle i. No impacts to water quality are considered likely for the revised area of 0.21 hectares.
No surveys have been completed to show the age and size of trees within the application area	No surveys were required for the revised area of 0.21 hectares, noting minimal impacts to environmental values.
The clearing will impact on current and future habitat for three species of black cockatoo	This is considered under principle b
The clearing will release significant amounts of carbon into the atmosphere	This is outside of the scope of the principles of this clearing assessment
No surveys have been undertaken for priority or threatened flora	This is considered under principle a and c. No surveys were required for the revised area of 0.21 hectares, noting minimal impacts to environmental values.
No avoidance and minimisation have been detailed	This has been considered under 'avoidance and minimisation'

Appendix B. Additional information provided by the applicant

The photographs below were provided by the applicant for the revised application area. The photographs have been mapped (Figure 16) to show their approximate location and orientation.



Figure 4: Photographs provided by the applicant (Photo 1)



Figure 5: Photographs provided by the applicant (Photo 2)



Figure 6: Photographs provided by the applicant (Photo 3)



Figure 7: Photographs provided by the applicant (Photo 4)



Figure 8: Photographs provided by the applicant (Photo 5)



Figure 9: Photographs provided by the applicant (Photo 9)



Figure 10: Photographs provided by the applicant (photo 16)



Figure 11: Photographs provided by the applicant (Photo 19)



Figure 12: Photographs provided by the applicant (Photo 20)



Figure 13: Photographs provided by the applicant (Photo 21)

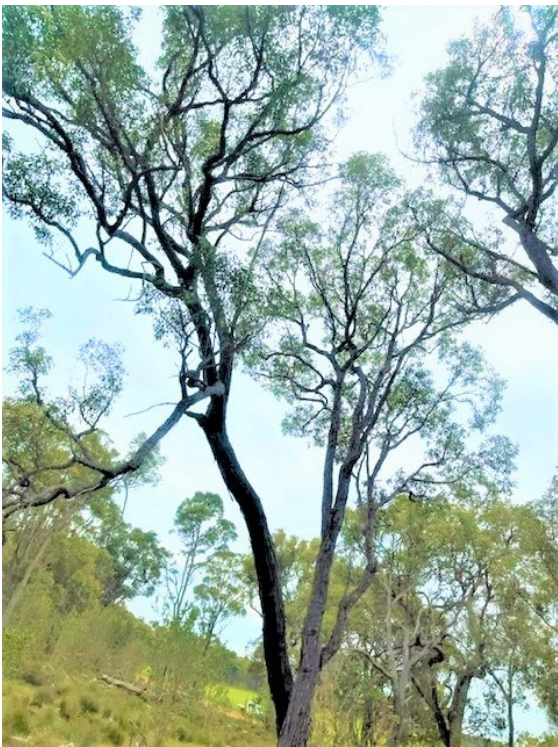


Figure 14: Photographs provided by the applicant (Photo 22)



Figure 15: Photographs provided by the applicant (Photo 27)

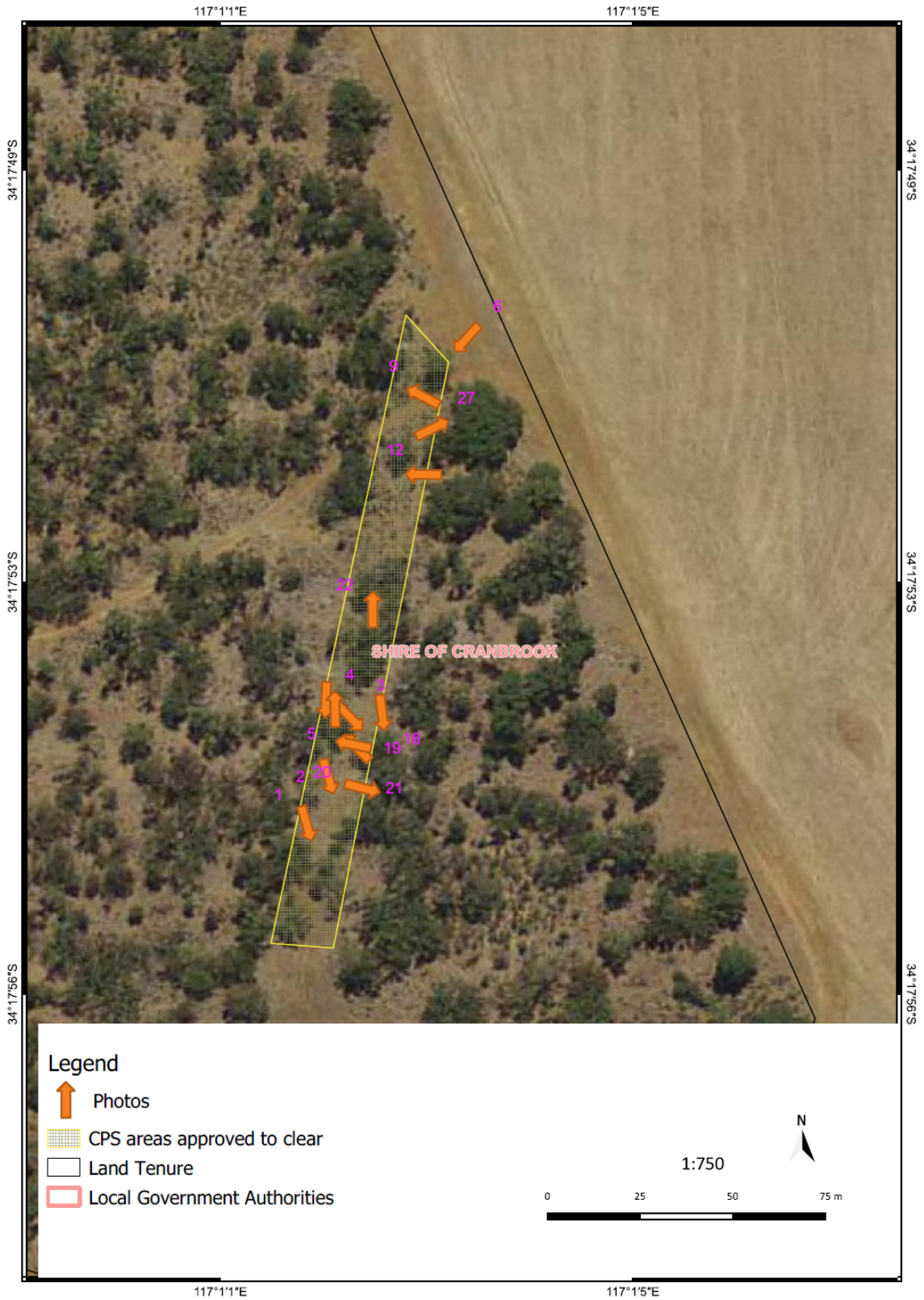


Figure 16: Map of approximate locations of photographs provided by the applicant

Appendix C. Site characteristics

C.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of a >230-hectare patch of native vegetation in the intensive land use zone of Western Australia. It is surrounded by private properties which contain varying amounts of native vegetation. The proposed clearing area contributes to an important linkage across the landscape.</p> <p>Spatial data indicates the local area (20-kilometre radius from the centre of the area proposed to be cleared) retains approximately 28 per cent of the original native vegetation cover, of which, only a small amount is within secure tenure.</p>
Ecological linkage	A mapped ecological linkage is located approximately 400 meters north of the application area.
Conservation areas	The closest conservation area to the application area is an unnamed timber reserve located approximately 4.4 kilometres to the north-west of the application area.
Vegetation description	<p>Photographs provided by the applicant and by Department of Primary Industry and Regional Development indicate the vegetation within the proposed clearing area consists of a woodland of jarrah, marri, and wandoo with limited understory. Representative photos are available in Error! Reference source not found..</p> <p>This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> Jingalup_4 which is described as; Jarrah, marri, and wandoo Eucalyptus marginata, Corymbia calophylla, E. wandoo. <p>The mapped vegetation type retains approximately 27 per cent of its original extent (Government of Western Australia, 2019)</p>
Vegetation condition	<p>Photographs provided by the applicant and by DPIRD indicate the vegetation within the proposed clearing area is in good to degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> Good:Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. <p>The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photos are available in Error! Reference source not found..</p>
Climate and landform	The annual average rainfall for the Frankland River area is 593 millimetres per year (DPIRD, 2021). The slopes within the application area are variable and range between 3-10 per cent.
Soil description	<p>The soil is mapped as Frankland Hills 1 Subsystem which is described below.</p> <ul style="list-style-type: none"> Frankland Hills 1 Subsystem described as: Lateritic crests, upper slopes, and isolated low gravelly rises with widespread lateritic duricrust. Loamy and duplex sandy gravels are common.
Land degradation risk	The mapped soil type has high wind erosion risk and elevated risk of subsurface acidification.
Waterbodies	The desktop assessment and aerial imagery indicated that there are no wetlands mapped within the application area. The application area lies between various minor non-perennial watercourses which are tributaries to the Frankland River.
Hydrogeography	The mapped groundwater salinity within the application area is 3000-7000 milligrams per litre which is described as saline.

Characteristic	Details
	The application area is not within any proclaimed areas under the CAWS Act or the RIWI Act.
Flora	Within the local area there are records of 18 Priority flora species and four threatened flora species. Twelve of these species have been recorded within similar vegetation types to the application area of which six have been found in similar soil types as those present in the application area.
Ecological communities	The application area is not within any mapped occurrences of priority or threatened ecological communities. The nearest occurrences are the Critically Endangered 'Eucalyptus Woodlands of the Western Australian wheatbelt.' The closest mapped occurrence is approximately five kilometres to the northeast of the application area.
Fauna	According to available databases, seven species of conservation significant fauna have been recorded within the local area. The most frequently occurring species within the local area is Muir's corella with records as close as one kilometre from the application area.

C.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*					
Jarrah Forest	4,506,660.25	2,399,838.15	53.25	1,673,614.25	37.14
Vegetation complex					
Beard vegetation association Jingalup 4 *	1,054,279.89	284,102.41	26.95	67,764.67	6.43
Local area					
20km radius			28.9	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

C.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil 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>Gastrolobium lehmannii</i>	T	Y	Y	Y	18.1	3	N
<i>Acacia parkerae</i>	P3	Y	Y	Y	4.1	3	N
<i>Tetradlea exasperata</i>	P3	Y	Y	Y	4.6	2	N
<i>Synaphea otio stigma</i>	P3	Y	Y	Y	16.6	2	N
<i>Caladenia integra</i>	P4	Y	Y	Y	7.5	1	N

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

C.4. 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]
Baudin's cockatoo (<i>Zanda baudinii</i>)	EN	Y	Y	2.5	14	N
Carnaby's cockatoo (<i>Zanda latirostris</i>)	EN	Y	Y	9.6	11	N
Forest red-tailed black cockatoo (<i>Calyptorhynchus banksii naso</i>)	VU	Y	Y	5.3	19	N
Muir's corella (<i>Cacatua pastinator pastinator</i>)	CD	Y	Y	1.6	61	N
South-western brush-tailed phascogale (<i>Phascogale tapoatafa wambenger</i>)	CD	Y	Y	6	9	N
Western brush wallaby (<i>Notamacropus irma</i>)	P4	Y	Y	6.4	4	N
Australasian bittern (<i>Botaurus poiciloptilus</i>)	EN	N	N	19.4	49	N/A
Australian little bittern (<i>Ixobrychus dubius</i>)	P4	N	N	14.5	14	N/A
Blue-billed duck (<i>Oxyura australis</i>)	P4	N	N	15.3	9	N/A
Western dwarf galaxias (<i>Galaxiella munda</i>)	VU	N	N	15.1	1	N/A
Southwestern brown bandicoot (<i>Isoodon fusciventer</i>)	P4	Y	Y	17.5	2	N
Malleefowl (<i>Leipoa ocellata</i>)	VU	Y	N	14.4	1	N
Bilby (<i>Macrotis lagotis</i>)	VU	Y	Y	14.4	2	N
Balstons pygmy perch (<i>Nannatherina balstoni</i>)	VU	N	N	15.6	2	N/A
Western quoll (<i>Dasyurus geoffroii</i>)	VU	Y	Y	17.5	1	N
Western rosella (<i>Platycercus icterotis xanthogenys</i>)	P4	Y	N	15.2	1	N

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

C.5. Land degradation risk table

Risk categories	Frankland Hills 1 Subsystem
Wind erosion	>70% of map unit has a high to extreme wind erosion risk
Water erosion	<3% of map unit has a high to extreme water erosion risk
Salinity	<3% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	>70% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	<3% of the map unit has a moderate to high flood risk
Water logging	<3% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	3-10% of map unit has a high to extreme phosphorus export risk

Appendix D. 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 area proposed to be cleared is not likely to contain locally or regionally significant flora, fauna, habitats, assemblages of plants.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<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 is not likely to contain foraging, roosting, and breeding, critical habitat for conservation significant fauna.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<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 not likely to contain habitat for flora species listed under the BC Act.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<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 does not contains species that can indicate 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 and the native vegetation in the local area is inconsistent with the national objectives and targets for biodiversity conservation in Australia.</p>	May be at variance	Yes <i>Refer to Section 3.2.3, above.</i>

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 distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not likely to be at variance	No
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></p> <p>Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on-site water quality.</p>	Not 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></p> <p>Advice was received from the Commissioner of Soil and Land Conservation (CSLC, 2021) in relation to the original application area of 100 hectares that the proposed clearing was at variance to principle (g) due to the likelihood of increased salinity in the area, which resulted in the applicant revising the application area to 0.21 hectares and the purpose of the clearing to create a truck access route.</p> <p>The mapped soil type within the revised application area is highly susceptible to wind erosion and subsoil acidification. However, noting that a substantial portion of native vegetation remains adjacent to the proposed clearing, the proposed clearing is not likely to cause appreciable 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> No water courses, wetlands or Public Drinking Water Sources Areas are recorded within the application area, the proposed clearing is not considered likely to impact surface or ground water 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></p> <p>The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix E. 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 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

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)

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