



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9680/1
Permit type:	Area permit
Applicant name:	Beverley Jane Giudici
Application received:	30 March 2022
Application area:	0.2 hectares of native vegetation (20 native trees)
Purpose of clearing:	Construction of dam
Method of clearing:	Mechanic removal
Property:	Lot 1186 on Deposited Plan 253845
Location (LGA area/s):	Shire of Donnybrook-Balingup
Localities (suburb/s):	Glen Mervyn

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area (see Figure 1, Section 1.5).

The application is to selectively clear 20 native trees that are within the gully area in order to minimise erosion and be accessible to cattle to facilitate the construction of a dam.

1.3. Decision on application

Decision:	Granted
Decision date:	11 July 2022
Decision area:	0.2 hectares (20 trees)

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 14 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), the clearing principles set out in Schedule 5 of the EP Act (see Appendix CC), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identifies that the proposed clearing will result in:

- The potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.
- Loss of 0.2 hectares of possible foraging black cockatoos.
- The potential introduction of contaminants into the watercourse.

After consideration of the available information as well as the minimisation and avoidance strategy implemented by the applicant (Section 3.1), the Delegated Officer determined the proposed clearing can be managed to unlikely lead

to an unacceptable risk to environmental values. The Delegated Officer decided to grant a clearing permit subject to conditions to

- avoid, minimise and reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback into adjacent remnants.

1.5. Site map



Figure 1 Map of the application area

The area crosshatched yellow indicate the area authorised to be cleared under the granted clearing permit.

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)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Rights in Water and Irrigation Act 1914* (RIWI Act)

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

The applicant has selected an area which will result in the least amount of erosion to the land after the construction of the dam due to it being in a gully. The applicant also selected an area where there is no native understorey (Giudici, 2022a).

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.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix BB) 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.C**) identified that the impacts of the proposed clearing present a risk to biological values (fauna, adjacent flora and vegetation), significant remnant vegetation and conservation areas, 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 Principle (b)

Assessment: Vegetation over the application area consists of 20 scattered trees (Giudici, 2022a) and majority are identified as *Corymbia calophylla* (Marri) with some *Eucalyptus marginata* (Jarrah) over a degraded to completely degraded understorey consisting predominately of pasture grass species (Appendix A).

A desktop assessment of the application area identified 12 conservational significant fauna species within the ten-kilometre local area which included four bird species and eight mammal species.

Class: Birds

Based on known distribution and habitat preference, the bird species most likely to occur over the application area are the four vagile species of black cockatoo known from the south west; namely the Endangered *Calyptorhynchus latirostris* (Carnaby's black cockatoo), vulnerable *Calyptorhynchus banksii naso* (Forest red-tailed black cockatoo) and endangered *Calyptorhynchus baudinii* (Baudin's cockatoo). These birds may utilise the tree canopy present within the application area.

There are three key components of black cockatoo habitat: foraging habitat; roosting habitat; and breeding habitat (DSEWPAC, 2012). Four confirmed black cockatoo roost sites are located approximately 7.6 kilometres south of the

area applied to clear, and the application area falls within broadly mapped black cockatoo breeding areas (GIS databases). For a black cockatoo breeding site to be viable, there must be sufficient foraging habitat available within 6 to 12 kilometres of a nesting site. The loss of breeding habitat with suitable breeding hollows is a major contributor towards the declining black cockatoo numbers (DSEWPAC, 2012). A tree considered suitable to develop a hollow for black cockatoo breeding is defined as a tree with a diameter of 50 centimetres or greater at a height of 1.5 metres above the ground (Strategen 2020). The trees within the application area do not represent a suitable size to contain hollows large enough to provide for black cockatoo breeding habitat (Appendix D).

The application area falls within broadly mapped potential black cockatoo feeding area. The quality of black cockatoo foraging habitat to support populations at breeding sites or night roosting sites varies depending upon how black cockatoos utilise the habitat in that particular location. The figure below represents the extent of black cockatoo roosting and feeding vegetation within the local area.

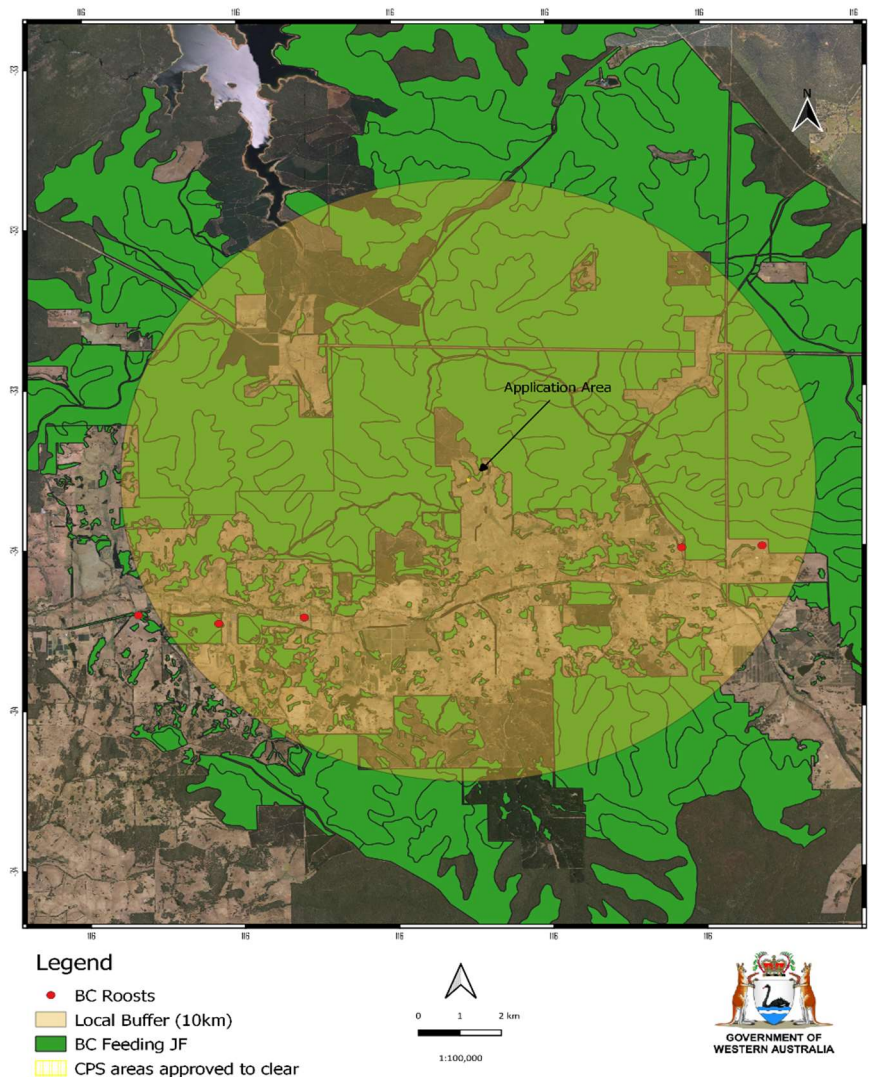


Figure 2. Mapped black cockatoo roosting and feeding within ten kilometres of the application area.

Marri fruit is a known food resource for black cockatoos (Bamford 2013; Groom 2011; Valentine and Stock 2008). However due to the location of the trees within the landscape (being located adjacent to state forest) it is unlikely that the trees within the application area will provide significant foraging for roosting and breeding populations. Black cockatoos are most likely to utilise the surrounding northern landscape where extensive tracts of native vegetation occur (Figure 2) and the possibility of black cockatoos using the trees application area is minimal.

Class: Mammals

The degraded nature of the native vegetation, and in particular the lack of an understorey, combined with the isolation of the application area from areas of native vegetation in good or better condition excludes the likelihood of the majority of terrestrial mammals of conservation significant occurring over the application area (Appendix B.4.). The

Critically Endangered, *Pseudocheirus occidentalis* (Western Ringtail Possums (WRP)) were identified approximately 4.3 kilometres from the application area. WRP typically require high canopy cover and connectivity and is associated with marri and jarrah within the south forest and utilises ground nests, logs and balga (Department of Parks and Wildlife, 2017). Application area is not mapped within a Western Ringtail Possum habitat suitability zone. Noting this description, the absence of a coherent midstory element and the lack of flora diversity, the application area does not provide suitable habitat for WRP and therefore, clearing of the proposed trees are unlikely to cause a significant impact to these species.

Endangered *Myrmecobius fasciatus* (numbat) were identified approximately 6.5 kilometres from the application area. Numbats typically require eucalypt forest and woodland, *Acacia* woodland, *Triodia* grassland with the presence of termites in sufficient abundance; associated with habitats comprising high ground cover and hollow logs for refuge (Department of Parks and Wildlife, 2017). The application area has the absence of ground cover and lack of flora diversity required for this species. The application area does not provide suitable habitat for the numbat and therefore, clearing of the proposed trees are unlikely to cause significant impacts to these species.

Vulnerable *Setonix brachyurus* (Quokka) and *Dasyurus geoffroyi* (Chuditch) were identified approximately 8.3 kilometres (Quokka) and 3.3 kilometres (Chuditch) from the application area. These species are associated with eucalypt and jarrah forests, riparian vegetation dominated by high understorey for den resources such as tree hollows. The application area provides minimal den locations and an absence of coherent understorey. The application area provides moderately suitable habitat, although the clearing of the proposed trees are unlikely to cause a significant impact to these species.

Conclusion

A fauna survey was not requested from the applicant as the photographs were sufficient to inform the assessment and none of the species identified within the local area were recorded within the application area during the desktop assessment.

Given the size of the clearing and the degraded condition of the vegetation in relation to its position in the landscape, and the location of known roost sites and mapped foraging habitat, it is unlikely that the individual marri and jarrah trees within the application area represent an important foraging resource to support black cockatoo populations. For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna habitats does not constitute a significant residual impact. It is also considered appropriate that hygiene measures should be implemented during clearing to help protect adjacent remnant vegetation from weed and dieback spread and the resultant degradation in habitat that can occur.

Conditions:

For the reason set out above, weed and dieback management measures will be conditioned on the clearing permit.

3.2.2. Environmental value: Significant remnant vegetation (e)

Assessment: The national objectives and targets for biodiversity conservation in Australia has a target to prevent the clearance of ecological communities with an extent below 30 per cent of that present prior to the year 1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001).

The application area is located within the Jarrah Forest IBRA bioregion, and the Balingup subsystem. The Jarrah Forest bioregion has approximately 2,399,838.15 hectares of native vegetation remaining, equating to approximately 53.25 per cent of its original extent (Government of Western Australia 2019b) (Appendix B.2).

Jarrah Forest vegetation complex descriptions of Mattiske and Havel (1998) as updated by Webb et al. (2016), have been mapped over the application area, with one complex occurring, being the Balingup Complex (ID 24); described as an open forest of *Eucalyptus marginata* subsp. *marginata*-*Corymbia calophylla* on slopes and woodland of *Eucalyptus rudis* on the valley floor in the humid zone.

The vegetation in the application area consists of marri and jarrah trees and is considered to be a degraded representation of this complex.

Approximately 29.38 per cent of the former extent of the Balingup Complex has been retained (Government of Western Australia 2019a) (Appendix B.2.). That is, just below the 30 per cent retention threshold of the Commonwealth of Australia (2001). Remnant vegetation has been mapped regionally. Within the local area of a ten-kilometre radius of the application area, approximately 20,358.47 hectares of mapped native vegetation remains, or approximately 60.63 per cent of its original extent (Appendix B.2.) remains.

Conclusion:

The extent of vegetation remaining within the Jarrah Forest and within the local area exceed the 30 per cent threshold as outlined above. Within the Balingup vegetation complex, the percentage of remaining vegetation is just below 30 percent. However, given the scale and condition of the vegetation within the application area, and vegetation remaining in the local area, the proposed clearing is not considered to be a significant remnant.

Conditions:

No conditions in regard to significant remnant vegetation is required.

3.2.3. Environmental value: Watercourses and wetlands – Clearing Principal (f)

Assessment: The application area is located within the Western Darling Range hydrological zone of Western Australia. A non-perennial minor river line is evident on aerial images and photographs provided by the applicant, that runs north to south through the application area and appears to flow away from Lake Preston. This is not a permanent watercourse.

The proposed clearing is minimal, and vegetation is currently in a degraded condition. The proposed dam would be developed at a lower elevation to the existing dam, introducing a risk of inflow from the existing dam approximately 80 metres away, which may alter the water regime or introduce contamination of the watercourse. Given the small scale of clearing, the purpose of clearing and standard methodologies implemented for a dam construction, it is unlikely the proposed clearing would contribute, or cause appreciable impacts to vegetation growing in association with a watercourse or introduce contamination.

Conclusion:

Based on the above assessment, the Delegated officer has determined that the proposed clearing is not likely to be significant in relation to this environmental value.

Condition:

No riparian vegetation, watercourse or wetland management conditions required.

3.2.4. Environmental value: Surface and underground water – Clearing Principal (i)

Assessment: The proposed clearing may increase sedimentation and runoff into the watercourse that traverses the application area. However the impacts are likely to be minimal and short term. Noting Water Quality Protection Notice #53, Appendix C, Environmental Impacts of dams in rural areas, attention should be paid towards the risk of degrading water quality downstream. Further, noting that the purpose of the proposed clearing is for dam construction it is considered that surface water flow will be managed, and the final design of the dam will prevent deterioration in the quality of surface water. The applicant has obtained a 'Bed and Banks' Permit under the RIWI act and has no downstream flow into a catchment area.

Groundwater salinity is mapped between 500-1,000 milligrams per litres total dissolved solids, which is considered to be marginal. Noting the low salinity levels and the size and narrow, linear shape of the application area, it is considered that the proposed clearing is not likely to impact upon the quality of underground water.

Conclusion:

Based on the above assessment, the Delegated officer has determined that the proposed clearing is not likely to be significant in relation to this environmental value.

Condition:

No surface water or underground water management conditions required.

3.3. Relevant planning instruments and other matters

The Shire of Donnybrook-Balingup advised the department that local government approvals are not required as the position of the dam is 20 metres from all lot boundaries, and that the proposed clearing is consistent with the Shire's Local Planning Scheme. The applicant has applied for and is to obtain a permit to interfere with bed and banks under the *Rights in Water and Irrigation Act 1914* for the construction of the dam.

No Aboriginal sites of significance have been mapped within the application area. 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. Additional information provided by applicant

Information	Description
Photographs of native vegetation to be cleared	Supporting photographs representing the proposed dam location from various directions (Giudici, 2022b)

CPS 9680/1 – Supporting Information – Photographs of Clearing Area Native Vegetation.



Figure 1: Dam Location (Looking Northwest).



Figure 2: Dam Location (Looking Northwest).



Figure 3: Dam Location (Looking North).



Figure 4: Dam Location (Looking North).

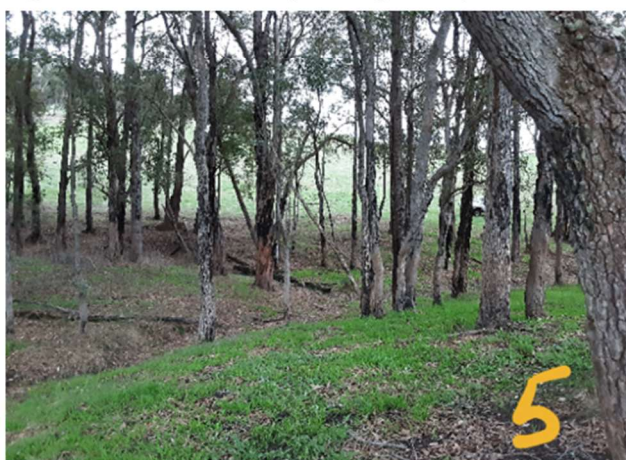


Figure 5: Dam Location (Looking East).



Figure 6: Dam Location (Looking South).

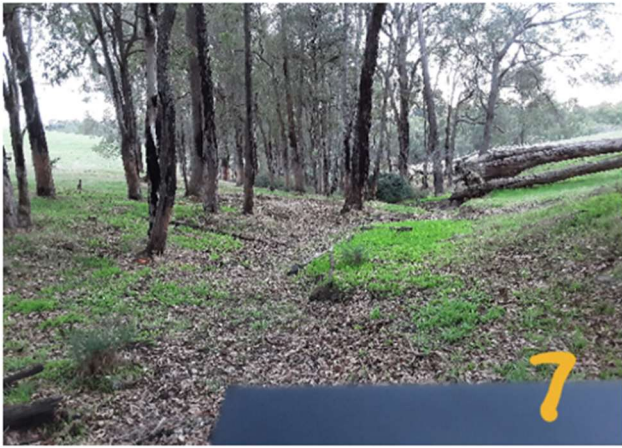


Figure 7: Dam Location (Central).



Figure 8: Dam Location (Looking West).



Figure 9: Dam Location (Looking Southwest).

Appendix B. Site characteristics

B.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 C.

Characteristic	Details
Local context	<p>The area proposed to be cleared is a 0.2-hectare isolated patch of native vegetation in the intensive land use zone of Western Australia. It is located within the Jarrah Forest bioregion and is surrounded by Mumballup state forest to the North, West and Eastern sides. The south of the clearing area is predominantly cleared agricultural land. The proposed clearing area is a small, isolated remnant in a relatively vegetated landscape.</p> <p>Aerial imagery and Spatial data indicate the local area (10-kilometre radius from the centre of the application area) retains approximately 60.63 per cent of the original native vegetation cover (Appendix B.2.).</p>
Ecological linkage	<p>Three known ecological linkages (part of the Southwest Regional Ecological Linkage) are mapped within the local area and the closest Southwest Regional Ecological Linkage identified is approximately 2.73 kilometres to the south of application area. No ecological linkages are mapped or considered to exist within the application area.</p>
Conservation areas	<p>There are DBCA – Legislated Land (state forest) located to the north, east and west of the application area, the closest approximately 0.37 kilometres from the application area. No conservation covenants, regional parks and DBCA areas of interest are mapped within the ten-kilometre buffer around the application area (DBCA-026, DBCA-012).</p>
Vegetation description	<p>The vegetation within the application area is mapped as Balingup complex described as 'Open Forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> - <i>Corymbia calophylla</i> slopes and woodland of <i>Eucalyptus rudis</i> on the valley floor in the humid zone" on the broader scale mapping (Webb et al.2016).</p> <p>Photographs provided by the applicant (Giudici, B., 2022b) indicate the vegetation within the application area consists of <i>Eucalyptus marginata</i> and <i>Corymbia calophylla</i> over pasture grass species in a valley floor. Not all species could be identified from the available photography. Representative photos are available in Error! Reference source not found.</p> <p>The mapped vegetation complex retains approximately 29.38 per cent of the original extent (Government of Western Australia, 2019a) while native vegetation extent remaining within the local area is 60.63 per cent.</p>
Vegetation condition	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in degraded to completely degraded (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix DD. Representative photos are available in Appendix A.</p>
Climate and landform	<p>Application area is within moderate valley slopes described as Balingup moderate slopes phase and comprises slopes with gradients of 15-35 per cent and relief 60-120 meters (DPIRD, 2019).</p> <p>Geology within application area is Gneiss and granite and some laterite colluvium. The current land use within the soil landscape system (255LVBL4) is grazing, some remnant vegetation, state forest and pine plantation. This area receives 800-1200 millimetres of rainfall (DPIRD, 2019). Most of the land has well drained loamy soil with good moisture and nutrient retention.</p>
Soil description	<p>The soil is mapped as Balingup moderate slopes Phase (255LvBL4) and within the Lowden Valleys System (Zone 255) and is summarised by deep gneissic valleys, in the</p>

Characteristic	Details
	south of the Western Darling Range. Loamy earth, loamy duplex, gravel and stony soils. Jarrah-marri Forest (DPIRD, 2022).
Land degradation risk	The Department of Primary Industries and Regional Development (DPIRD), provides a series of soil degradation risk mapping at the systems level. The land degradation table B.5. below summaries the soil degradation risk within the application area. The application area is mapped as having high subsurface acidification and phosphorus export, and medium to high water erosion.
Waterbodies	<p>Preston River hydrographic catchment and tributaries, Collie River Irrigation District and Preston Valley Irrigation District and falls within the Western Darling Range Hydrological Zone (DPIRD-069).</p> <p>The desktop assessment and aerial imagery indicated that a minor river (creek line), non-perennial watercourse transect the centre of the application area. There are number of earth dam waterbodies surrounding the application area. No conservation significant wetlands and Ramsar sites were identified within the ten-kilometre local buffer area (DBCA-045).</p>
Hydrogeography	<p>The application area does not occur within a Public Drinking Water Source Area or a groundwater area under the RIWI Act nor does it occur within an area subject to the CAWS Act (DWER-034). Application Area is surrounded by Preston River tributaries protected under the RIWI Act and has the Collie River Irrigation System and Preston Valley within a 10km local buffer the RIWI surface water area (DWER-037).</p> <p>Groundwater salinity level (Total Dissolved Solids) is mapped as 500-1000 milligrams per litre (Fresh water) (DWER-026).</p>
Flora	Three conservation significant flora taxa have been recorded within the local area. Nearest record is 5.13 kilometres from the application area which is a priority three species (<i>Stylidium acuminatum</i> subsp. <i>acuminatum</i>) and another species (<i>Acacia semitrullata</i>), a priority four species at 9.1 kilometres. One species (<i>Grevillea prominens</i>) was recorded within the same soil landscape system as the application area but does not comprise of a suitable habitat for its existence. The application area is devoid of native understorey and is not likely to contain conservation significant flora.
Ecological communities	No Threatened or Priority Ecological Communities were recorded within the application area nor within the ten-kilometre local area (DWER 2021).
Fauna	Twelve conservation significant fauna species were identified within the local area and four known black cockatoo roosting sites are identified approximately 7.6 kilometres to the south and east of the application area. The nearest record identified is <i>Phascogale tapoatafa wambenger</i> 'south-western brush-tailed phascogale' which was 4 kilometres from application area (GIS databases). The fauna table B.4. below provides an analysis of the fauna species identified within the local area.

B.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					
Mattiske/Havel (1998) vegetation complex BL24 ** (Balingup)	59,446.57	17,466.47	29.38	9,120.37	15.30
Local Area					
Ten Kilometre Radius	31,609.30	20,358.47	60.63		

**Government of Western Australia (2019)

B.3. Flora analysis table

With consideration for the site characteristics set out above, 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>Acacia semitrullata</i>	P4	N	Y	N	9.31	4	N/A
<i>Grevillea prominens</i>	P3	N	Y	Y	9.52	1	N/A
<i>Stylidium acuminatum</i> subsp. <i>acuminatum</i>	P3	N	N	N	5.13	1	N/A

B.4. Fauna analysis table

With consideration for the site characteristics set out above, impacts to the following conservation significant flora required further consideration.

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>Calyptorhynchus banksii naso</i>	VU	N	Y	6.54	6	N/A
<i>Calyptorhynchus baudinii</i>	EN	N	Y	4.75	10	N/A
<i>Calyptorhynchus latirostris</i>	EN	N	Y	5.82	8	N/A
<i>Calyptorhynchus</i> sp. 'white-tailed black cockatoo'	EN	N	Y	6.53	8	N/A
<i>Dasyurus geoffroii</i>	VU	Y	Y	3.32	14	N/A
<i>Hydromys chrysogaster</i>	P4	N	N	4.83	5	N/A

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>Isoodon fusciventer</i>	P4	N	Y	5.20	9	N/A
<i>Myrmecobius fasciatus</i>	EN	N	N	6.55	3	N/A
<i>Notamacropus irma</i>	P4	Y	N	9.47	2	N/A
<i>Phascogale tapoatafa wambenger</i>	P4	Y	Y	4.01	11	N/A
<i>Pseudocheirus occidentalis</i>	CR	Y	Y	4.31	6	N/A
<i>Setonix brachyurus</i>	VU	N	N	8.30	4	N/A

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

B.5. Land degradation risk table

Risk categories	Land Unit 1
Water Erosion	H1- 50-70% of map unit has a high to extreme water erosion risk
Wind Erosion	L2- 3-10% of map unit has a high to extreme wind erosion risk
Salinity	L1-<3% of map unit has a moderate to high salinity risk or is presently saline
Flood	L1-<3% of the map unit has a moderate to high flood risk
Waterlogging	L1-<3% of map unit has a moderate to very high waterlogging risk
Subsurface Acidification	H2- >70% of map unit has a high subsurface acidification risk or is presently acid
Phosphorus Export	H2- >70% of map unit has a high to extreme phosphorus export risk

Appendix C. 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> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u> Native vegetation over the application area consists of scattered marri, jarrah over an understorey of pasture grasses. Native vegetation is in a completely degraded condition (Keighery, 1994). The native vegetation within the application area does not represent any conservation significant ecological communities, does not support Threatened or Priority flora taxa, and does not comprise of a high level of biodiversity.</p>	Not at variance	No
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u> The application area contains suitable habitat for conservation significant fauna.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> Native vegetation identified within the application area is in a degraded to completely degraded condition (Keighery 1994) (Appendix D). No native flora species are represented in the understorey and the application area is unlikely to include, or be necessary for, the continued existence of Threatened flora.</p>	Not at variance	No
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared does not contain species that indicate a threatened ecological community.</p>	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The extent of the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<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> The application area does not fall within any conservation areas. Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of adjacent conservation areas.</p>	Not 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>	At variance	Yes <i>Refer to Section 3.2.3</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Assessment:</u> The application area is located within a non-perennial minor river (Appendix B). The application area is growing in association with an environment associated with a watercourse.</p>		
<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> Land degradation risks for the mapped soil type is high for subsurface acidification and phosphorus export. Eutrophication (phosphorus export) is not likely to be a risk as final land use is not for planting crops. As the final land use is for construction of a dam which would be few metres deep, subsurface acidification will not be an impacting factor. Water erosion is mapped as medium to high. Short term water erosion is likely but standard water erosion and drainage control methodologies will be implemented during the dam construction to mitigate any potential impacts from water erosion. Following the completion of the dam, water drainage will accumulate into the dam and no water erosion will remain.</p> <p>Noting the extent of the application area and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on 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> Given no major water courses, wetlands and Public Drinking Water Sources Areas are recorded within or in close proximity to the application area, the proposed clearing is unlikely to impact surface or ground water quality. Impacts to the surface water of the minor watercourse is likely to be minimal and short term.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.4, above.</i>
<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 land degradation risk for flooding potential over the application area is rated at low. The extent of the proposed clearing is not likely to exacerbate the incidence or intensity of flooding.</p>	Not at variance	No

Appendix D. 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 Southwest 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 E. Sources of information

E.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)

E.2. References

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