



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9045/1
File Number: DWERVT6480
Duration of Permit: From 15 January 2021 to 15 January 2023

PERMIT HOLDER

Myalup Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 4 on Diagram 30278, Myalup

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.37 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

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 (GDA94), 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 1; and (f) actions taken to minimise the risk of the introduction and spread of weeds and dieback 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.
fill	means material used to increase the ground level, or to fill a depression.
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)
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
A/MANAGER
NATIVE VEGETATION REGULATION

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

22 December 2020

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 areas within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9045/1
Permit type:	Area permit
Applicant name:	Myalup Pty Ltd
Application received:	9 September 2020
Application area:	0.37 hectares of native vegetation
Purpose of clearing:	Dam construction or maintenance
Method of clearing:	Mechanical
Property:	Lot 4 on Diagram 30278, Myalup
Location (LGA area/s):	Shire of Harvey
Localities (suburb/s):	Myalup

1.2. Description of clearing activities

The vegetation proposed to be cleared is distributed across five separate areas within a span of 160 metres by 80 metres (see Figure 1, Section 1.5) to allow the expansion of an existing irrigation soak.

1.3. Decision on application

Decision:	Granted
Decision date:	22 December 2020
Decision area:	0.37 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 E), photographs of the vegetation (see Appendix D), 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).

The assessment identified that the proposed clearing will result in:

- the loss of 0.37 hectares of native vegetation that is suitable foraging habitat for *Calyptorhynchus banksii naso* (Forest red-tailed black cockatoo) and *Calyptorhynchus latirostris* (Carnaby's cockatoo); and
- the loss of 0.37 hectares of a patch of the Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain ecological community.

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 significant impacts to black cockatoos or the Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain ecological community, and impacts can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values. The applicant has suitably demonstrated avoidance and minimisation measures.

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

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

1.5. Site map



Figure 1: Map of the application area. The areas cross-hatched yellow indicate the areas 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; and
- 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)

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

Given the extent of the proposed clearing, 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 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 on fauna and flora required further consideration. 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: *Calyptorhynchus banksii naso* (Forest red-tailed black cockatoo) and *Calyptorhynchus latirostris* (Carnaby's cockatoo) (hereafter collectively referred to as black cockatoo species) have been mapped within the local area, and may utilise vegetation within the application area as habitat. Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees, including *Eucalyptus gomphocephala* (tuart) trees with trunk diameter of greater than 50 centimetres at a height of 150 centimetres (Commonwealth of Australia, 2012), of which 14 are present within the application area (Myalup Pty Ltd, 2020b). Detailed photographs taken of tuart trees within the application area (refer Appendix D), including photos of tree canopies from multiple angles and zoomed in photos of areas potentially resembling hollows, indicate hollows of suitable size for black cockatoo species are unlikely to be present (Myalup Pty Ltd, 2020b). As such, it is considered that the application area is unlikely to provide significant breeding habitat for black cockatoo species.

Black cockatoo species may also utilise tuart trees within the application area as roosting and foraging habitat. However, given the presence of suitable vegetation within the surrounding area, the tuart trees within the application area are not considered to comprise significant roosting or foraging habitat for black cockatoo species.

Although tuart forests can provide suitable habitat for *Pseudocheirus occidentalis* (Western ring-tailed possum), as the trees within the application area are within small isolated stands in an open area, it is considered that the vegetation proposed to be cleared does not create a dense enough canopy to provide suitable habitat for the Western ring-tailed possum (Department of Parks and Wildlife, 2014). Given the lack of hollows present within trees within the application area and the isolated nature of the vegetation, it is also considered unlikely that the application area would provide suitable habitat for *Phascogale tapoatafa wambenger* (South-western brush-tailed phascogale, wambenger), which are observed in dry sclerophyll forests and open woodlands containing hollow-bearing trees (Department of Parks and Wildlife, 2012). While the application area may provide suitable habitat for *Falco peregrinus* (Peregrine falcon), given the large range of this species, the proposed clearing is not likely to have a significant impact upon this species.

Conclusion: Based on the above assessment, the proposed clearing is unlikely to result in significant impacts to conservation significant fauna species.

Conditions: No fauna management conditions required.

3.2.2. Biological values (flora) - Clearing Principle (a)

Assessment : The application area is mapped within the known distribution of the Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain ecological community, which has been listed as Priority 3 under the Biodiversity Conservation Act (BC Act) and Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Department of the Environment and Energy 2019).

To be considered the federally listed threatened ecological community (TEC) the vegetation patch must meet key diagnostic characteristics, the primary defining feature of which is the presence of at least two living established tuart trees in the uppermost canopy layer (Department of the Environment and Energy, 2019). The distance between the tuart trees must be no more than 60 metres between the outer edges of the canopies of the adjacent tuart trees. The trees within the application area are tuart trees that occur within 60 metres of one another and also within 60 metres of other remnant tuart trees the remnant vegetation containing mature tuart trees extending northwards from the application area. Therefore, the estimated patch of the TEC would incorporate all the trees in the application area and the trees in the vegetation to the north, and would cover an area larger than five hectares. Five hectare patches or greater, in any condition, are part of the TEC (Department of the Environment and Energy, 2019).

As such, the application area is considered likely to contain a portion of a patch of the tuart TEC, and in the absence of a vegetation survey, it is also considered to contain a portion of a patch of the state listed priority ecological community (Tuart PEC). Whilst the application involves the clearing of this TEC/PEC, the removal of these isolated trees that are a part of a much larger patch will not significantly impact the local occurrence of this TEC or impact on the conservation status of the TEC. Weed and dieback management practices will aid in mitigating impacts to the remaining occurrence of this TEC.

Conclusion: Based on the above assessment, the proposed clearing may impact a patch of the Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain ecological community, however impacts are not considered likely to be significant.

The applicant may have notification responsibilities under the EPBC Act for impacts to the tuart TEC. The applicant has been advised to contact the federal Department of Water, Agriculture and the Environment (DAWE) to discuss EPBC Act referral requirements.

Conditions: No management conditions required.

3.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

- Development Approval under the *Planning and Development Act 2005* (issued by the Shire of Harvey); and
- Licence to construct or alter a well under the *Rights in Water and Irrigation Act 1914*.

The Shire of Harvey advised DWER that a Development Approval has been granted for the construction to extend the irrigation soak (Shire of Harvey, 2020). The Shire noted that the subject of the clearing permit application appears to form part of a patch of the Tuart Woodland TEC protected under the EPBC Act and requested that the referred to the Department of Agriculture, Water and the Environment for assessment to determine whether the proposed clearing is a controlled action (Shire of Harvey, 2020). The applicant has been informed that a referral under the EPBC Act may be required, and to contact the Department of Agriculture, Water and the Environment for further information.

Advice received from DWER Water Licensing is that a licence under Section 26D of the *Rights in Water and Irrigation Act 1914* is required to undertake the excavations for the extended irrigation soak, and that this license is able to be issued subject to the clearing permit being issued (DWER, 2020a).

In relation to the proposed clearing, DWER's Contaminated Sites branch advised that:

- this site has not been reported as a known or suspected contaminated site under the Contaminated Sites Act 2003 (the Act) and CS holds no contaminated sites related records for the site;
- the western portion of Lot 4 transects an area mapped as representing a high to moderate and a moderate to low risks of encountering acid sulfate soils, however the larger eastern portion of the Lot (the portion

containing the application area) is located in an area mapped as representing no known risk of encountering acid sulfate soils within three metres of the natural ground surface;

- the proposed limited land clearing for the construction of a dam at the site is unlikely to represent a significant risk of disturbing acid sulfate soils beneath the site (DWER, 2020a).

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

A.1 Site characteristics

Characteristic	Details
Local context	<p>The areas proposed to be cleared lie within a strip of parkland cleared land approximately 170 m wide by 675 m long, which is flanked on both the western and eastern sides by a row of trees. This strip of land is surrounded by agricultural land to the west and east. The southernmost portion proposed to be cleared is adjacent to a dam. The proposed clearing areas are small isolated remnants in a highly cleared landscape.</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.</p>
Ecological linkage	The application area does not appear to be part of an ecological linkage. The application area is approximately 2.3 km west on a mapped ecological linkage (South West Regional Ecological Linkage).
Conservation areas	The closest conservation area is Yalgorup National park, located approximately 700 m west of the application area. Myalup State Forest is approximately 1.8 km south-east of the application area.
Vegetation description	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of <i>Eucalyptus gomphocephala</i> (tuart) trees and an understorey of exotic grasses. Representative photos are available in Appendix D.</p> <p>This is consistent with the mapped vegetation type(s):</p> <ul style="list-style-type: none"> • Yoongarillup Complex (56), described as woodland to tall woodland of <i>Eucalyptus gomphocephala</i> (Tuart) with <i>Agonis flexuosa</i> in the second storey. Less consistently an open forest of <i>Eucalyptus gomphocephala</i> (Tuart) - <i>Eucalyptus marginata</i> (Jarrah) - <i>Corymbia calophylla</i> (Marri). (Hedde et al, 1980). <p>The mapped vegetation type retains approximately 36 per cent of its original extent (Government of Western Australia, 2019b).</p>
Vegetation condition	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Completely Degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> • 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. <p>The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photos are available in 0.</p>
Climate	<p>Rainfall: 900 mm</p> <p>Evapotranspiration: 800 mm</p>
Topography	Topographic contours indicate the application area is relatively flat, at approximately 5 m AHD.
Soil description	The soil is mapped as Spearwood S4b Phase (211Sp_S4b), described as Flat to gently undulating sandplain with shallow to moderately deep siliceous yellow-brown and grey-brown sands with minor limestone outcrop (DPIRD, 2019).
Land degradation risk	<ul style="list-style-type: none"> • Flood risk: <3% of map unit has a moderate to high flood risk • Salinity risk: <3% of map unit has a moderate to high salinity risk or is presently saline • Phosphorus export risk: <3% of map unit has a high to extreme phosphorus export risk • Subsurface acidification risk: <3% of map unit has a high subsurface acidification risk or is presently acid • Water erosion risk: 3% of map unit has a high to extreme water erosion risk

Characteristic	Details
	<ul style="list-style-type: none"> Waterlogging risk: <3% of map unit has a moderate to very high waterlogging risk Wind erosion risk: >70% of map unit has a high to extreme wind erosion risk (Schoknecht et al, 2004).
Waterbodies	<p>No wetlands or watercourses are mapped within the application area.</p> <p>The closest mapped wetland to the application area, located approximately 650 m northwest of the application area, is a Multiple Use dampland. The Ramsar listed Peel Yalgorup system is located approximately 740 m west of the application area. This wetland is also listed in the Directory of Important Wetlands in Australia (as the Yalgorup Lakes system) and is considered a Conservation category wetland within the Swan Coastal Plain.</p> <p>The closest mapped watercourse to the application area is the Harvey River, approximately 2 km southeast of the application area.</p>
Hydrogeography	<p>The application area is within the South West Coastal Groundwater Area.</p> <p>Hydrogeology within the application area is described as surficial sediments – shallow aquifers.</p> <p>Mapped groundwater salinity within the application area is 500-1000 mg/L TDS.</p>
Flora	<p>There are records of five threatened and 17 priority flora within a 10 kilometre radius, four of which is found on the same or similar soil type to the application area. However, given that the application area only contains tuart trees with an understorey of native grasses, it is considered that none of these flora species are likely to be present within the application area.</p>
Ecological communities	<p>The application area is within an area mapped as the federally listed threatened ecological community and state listed priority ecological community 'Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain ecological community'.</p>
Fauna	<p>There are records of 16 threatened fauna species, seven priority fauna species, two conservation dependent fauna species, five fauna species under international agreement and one specially protected fauna species within a 10 kilometre radius of the application area.</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 *	850,785.09	276,461.42	32.49	17.99	17.99
Vegetation complex					
Hedde vegetation complex 56 **	27,977.93	10,018.14	35.8	5,151.57	18.41
Local area					
10km radius	-	-	31.4	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3 Fauna analysis table

Species name	BC Act Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify? [Y, N, N/A]
<i>Calyptorhynchus banksii naso</i> (Forest red-tailed black cockatoo)	VU	Y	Y	2.0	8	N/A
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	Y	Y	0.9	79*	N/A
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	Y	3.3	1	N/A
<i>Phascogale tapoatafa wambenger</i> (South-western brush-tailed phascogale, wambenger)	CD	N	Y	2.6	20	N/A
<i>Pseudocheirus occidentalis</i> (Western ringtail possum, ngwayir)	CR	N	Y	2.4	140	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, CD: conservation dependent, OS: other specially listed

* Note this includes five records of '*Calyptorhynchus* sp. 'white-tailed black cockatoo' (White-tailed black cockatoo)' which are considered to be Carnaby's cockatoos given that no Baudin's cockatoos have been recorded within the local area

A.4 Ecological community analysis table

Community name	BC Act 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)	Are surveys adequate to identify? [Y, N, N/A]
Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain ecological community	P3	Y	Y	Y	Within application area	N/A

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> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u> The application area is likely to contain a portion of a patch of vegetation meeting the criteria for the BC Act priority ecological community ‘Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain ecological community’ and may contain habitat for conservation significant fauna species.</p>	May be at variance	Yes: Refer to Section 3.2.1 and Section 3.2.2 above.
<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 area proposed to be cleared is unlikely to contain significant foraging, roosting or breeding habitat for conservation significant fauna.</p>	Not likely to be at variance	No: Refer to Section 3.2.1 above.
<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> Given that vegetation within the application area consists only of tuart trees and no native understorey species, the area proposed to be cleared is unlikely to contain flora species listed under the BC Act.</p>	Not likely to be 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 can indicate a state listed threatened ecological community.</p>	Not likely to be 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> Extents of the mapped vegetation type and native vegetation in the local area are 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	No
<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> No natural wetlands or watercourses are present within the application area.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (g):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."</p> <p><u>Assessment:</u> The surveyed soils are highly susceptible to wind erosion, however noting the extent of the application area the proposed land use (irrigation soak), 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> "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."</p> <p><u>Assessment:</u> Given the distance to the nearest wetlands and extent of the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."</p> <p><u>Assessment:</u> The mapped soils and topographic contours in the surrounding area, distance to nearby wetlands and extent of the vegetation to be cleared do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding or waterlogging.</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 (1994).

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.



Figure D-1 – Immature tuart trees with understorey of exotic grasses adjacent to existing irrigation soak in southern portion of application area



Figure D-2 – Tuart trees with understorey of exotic grasses within application area



Figure D-3 – Larger tuart trees with understorey of exotic grasses within application area

Appendix E 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)
- Geomorphic wetlands of the Swan Coastal Plain (DBCA-019)
- 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

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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