



# Clearing Permit Decision Report

## 1. Application details and outcome

### 1.1. Permit application details

Permit number:	CPS 9038/1
Permit type:	Area permit
Applicant name:	Vilmaggiore Pty Ltd
Application received:	08/09/2020
Application area:	8.34 (ha) of native vegetation
Purpose of clearing:	Dam construction
Method of clearing:	Mechanical
Property:	Lot 102 on Deposited Plan 401885
Location (LGA area/s):	Manjimup
Localities (suburb/s):	Channybearup

### 1.2. Description of clearing activities

The proposed clearing is contained within a single contiguous area (see Figure 1, Section 1.5). All vegetation within the area is proposed to be cleared, to facilitate the construction of a dam from which water will be taken for horticultural irrigation.

### 1.3. Decision on application and key considerations

Decision:	Refused
Decision date:	19 August 2021

### 1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Water and Environmental Regulation (DWER) on 8 September 2020. DWER advertised the application for public comment and no submissions were received.

In making this decision, the Delegated Officer had regard to the site characteristics (Appendix A), relevant datasets (Appendix E.1), the clearing principles set out in Schedule 5 of the *Environmental Protection Act 1986* (EP Act) (Appendix B), relevant planning instruments and other matters considered relevant to the assessment (see Section 3.3). Consideration of planning instruments and other relevant matters when making a decision on a clearing permit application is a requirement under section 51O(4) of the EP Act.

The Delegated Officer determined to refuse to grant a clearing permit, because project approvals required under other relevant legislation, namely the *Country Areas Water Supply Act 1947* (CAWS Act) and the *Rights in Water and Irrigation Act 1914* (RIWI Act), have either been already refused or would not be supported if applied for (Section 3.3).

The assessment also identified that the proposed clearing:

- is likely to result in impacts to the surface water quality to a watercourse within the application area and the Lefroy Brook Catchment, which provides the sole drinking water supply for the Town of Pemberton;
- may significantly impact conservation significant fauna species; and
- may significantly impact conservation significant flora species.

The applicant was not requested to provide additional information to clarify significant flora and fauna impacts, such as biological survey results, given the lack of project approvals under the CAWS Act and RIWI Act.

## 1.5. Site map

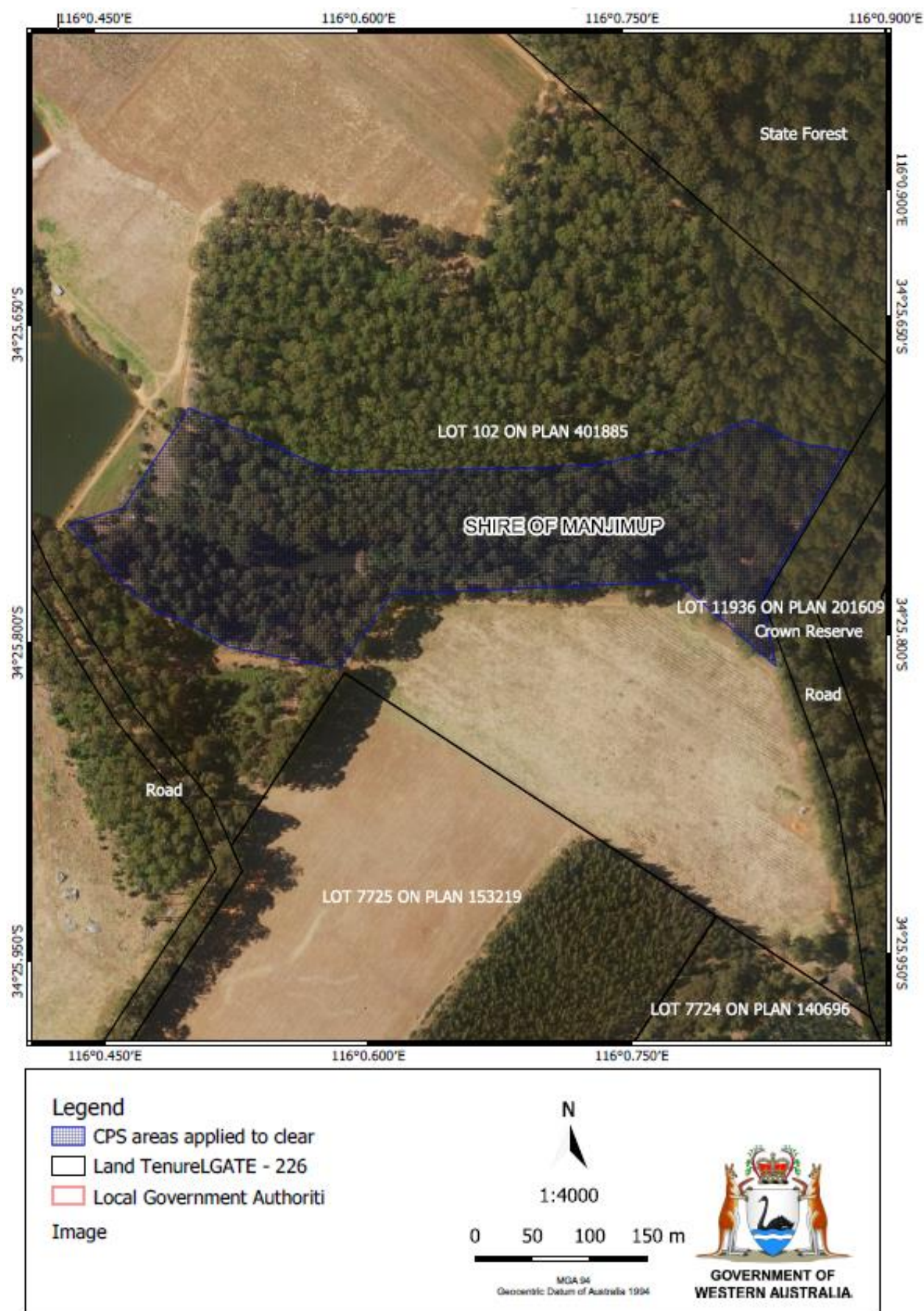


Figure 1. Map of the application area.

## 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 1.3), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle;
2. the principle of intergenerational equity;
3. the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance to this assessment includes:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Rights in Water and Irrigation Act 1914* (WA) (RIWI 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* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, 2019a)

## 3. Detailed assessment of application

### 3.1. Avoidance and mitigation measures

No evidence of avoidance or mitigation measures was provided to support the application. This is a key consideration in any clearing assessment, and applicants are required to demonstrate the efforts applied to minimise clearing for their project. In this case, having applied to clear a specific area for a dam of a particular size, the applicant advised during the assessment that he would seek to clear the same area for the purpose of horticulture or grazing if clearing for the purpose of a dam is not authorised. The Delegated Officer considered that this advice demonstrates a desire to clear an area of native vegetation without adequate consideration given to minimising the clearing.

### 3.2. Assessment of environmental impacts

In assessing the application in accordance with section 51O of the EP Act, the Delegated Officer has examined the application and site characteristics (Appendix C) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix D.

This assessment identified that the risks of the clearing to biological values (flora and fauna) and wetlands and water quality required further consideration. The detailed consideration and assessment of the clearing impacts against the specific environmental values is provided below.

#### 3.2.1. Environmental value: biological values (fauna) – Clearing Principles (a) and (b)

Assessment: The application area may provide significant suitable habitat for the following conservation significant fauna species:

- *Pseudocheirus occidentalis* (Western ringtail possum, ngwayir) (T)
- *Calyptorhynchus baudinii* (Baudin's cockatoo) (T)
- *Calyptorhynchus latirostris* (Carnaby's cockatoo) (T)
- *Calyptorhynchus banksii naso* (Forest red-tailed black cockatoo) (T)
- *Galaxiella munda* (Mud minnow, western dwarf galaxias) (T)
- *Setonix brachyurus* (Quokka) (T)
- *Westralunio carteri* (Carter's freshwater mussel) (T)
- *Ixobrychus flavicollis australis* (Black bittern (southwest subpop.)) (P2)
- *Geotria australis* (Pouched lamprey) (P3)
- *Hydromys chrysogaster* (Water-rat, rakali) (P4)

The application area is also considered likely to provide suitable habitat for the following conservation significant fauna species, however it is considered unlikely that this habitat would be significant:

- *Bettongia penicillata ogilbyi* (Woylie, brush-tailed bettong) (T)
- *Tyto novaehollandiae novaehollandiae* (Masked Owl (southwest)) (P3)
- *Isodon fusciventer* (Quenda, southwestern brown bandicoot) (P4)
- *Oxyura australis* (Blue-billed duck) (P4)
- *Cacatua pastinator pastinator* (Muir's corella) (CD)
- *Phascogale tapoatafa wambenger* (South-western brush-tailed phascogale, wambenger) (CD)

It is noted that fauna surveys would be required to determine whether the application area contains the above species or their habitats, and the significance of any such habitats.

**Conclusion:** In the absence of further information (i.e. fauna surveys), it is considered that the proposed clearing area may contain habitat for multiple conservation significant fauna species, and the proposed clearing may have significant impacts on some of these fauna species.

### **3.2.2. Environmental value: biological values (flora) – Clearing Principles (a) and (c)**

**Assessment:** The application may provide suitable habitat for two threatened flora species recorded in similar mapped soils and vegetation types within the local area; *Commersonia apella* and *Caladenia christineae*. *Commersonia apella* is found near the banks of streams or rivers, in karri-marri forest (Department of Parks and Wildlife, 2016) and *Caladenia christineae* is found growing around the margins of and in winter wet flats (often in standing water) in heath and sedge communities (Hearn et al, 2006), both of which habitats may be present within the application area. In the absence of a flora survey for these species it is considered possible that these species may occur within the application area.

The state-listed Priority 3 Ecological Community (PEC) 'Epiphytic Cryptogams of the karri forest' is considered to be possibly present within the application area, given the presence of karri forest. This PEC is described as comprising "liverworts, mosses and lichens found on the bark of mature (plants greater than 15 years old and prior to senescence at about age 50) of *Trymalium odoratissimum* subsp. *odoratissimum* and *Chorilaena quercifolia* in the karri forest of south-west Western Australia" (DBCA, 2017).

It is noted that flora and vegetation surveys would be required to determine whether the application area contains the above species or communities or their habitats, and the significance of any such habitats.

**Conclusion:** In the absence of further information (i.e. flora surveys), it is considered that the application area may contain two threatened flora species (*Commersonia apella* and *Caladenia christineae*) and the Epiphytic Cryptogams of the karri forest PEC.

### **3.2.3. Environmental value: water resources – Clearing Principles (f) and (j)**

**Assessment:** The proposed mechanical clearing of native vegetation is likely to result in temporarily increased turbidity of the watercourse within the application area during the clearing works (DWER, 2020a). Removal of stabilising root structures associated with clearing may also predispose exposed dam banks to soil erosion, resulting in further sedimentation and possible turbidity within the watercourse in the longer term, particularly considering the relatively steep slope that would be required for the dam banks given the topography of the application area. Furthermore, it is noted that the proposed clearing will remove all remaining native vegetation present between the watercourse and the cleared land to the south of the eastern portion of the watercourse, which is likely to increase the likelihood of any particulates, nutrients (e.g. from livestock or fertiliser application), pesticides and herbicides generated by agricultural land uses entering the watercourse, unless physical interventions or planting of new vegetation was established to provide a barrier. As such, it is considered likely that the proposed clearing will result in reduced water quality within the watercourse.

It is also noted that the application area falls within the Lefroy Brook Catchment Area proposed to be gazetted under the *Country Areas Water Supply Act 1947* (CAWS Act) and that the watercourse within the application area is upstream of the associated Lefroy Brook Weir, which provides the town of Pemberton with its sole supply of drinking water (DWER, 2020a). As such, it is considered that increased turbidity within the watercourse resulting from the proposed clearing may also reach the Lefroy Brook Weir, affecting treatment of the drinking water supply and rendering it unsuitable (DWER, 2020a). As the Lefroy Brook Weir provides Pemberton's sole supply, the potential impacts to quality to water security and public health are significant and as such the proposed clearing is not supported by DWER (2020a). It is also noted that the proposed dam is inconsistent with *Water quality protection note no. 53 - dam construction and operation in rural areas* (DWER, 2019b) (refer to Section 3.3.3. for further details).

The proposed clearing area lies within the 1 September 1978 CAWS Act gazetted Warren River Water Reserve, subject to CAWS Act native vegetation clearing controls since December 1978 to prevent salinisation of water

resources. The introduction of these clearing controls have helped to prevent the rise of salinity of the Warren River (Department of Water, 2006a) and it is important to maintain these controls to ensure salinity levels remain stable. Given the extent of clearing that has already occurred on the applicants landholdings (see Section 3.3 below for further information), it is considered that the proposed clearing has the potential to contribute to salinisation, albeit to a small extent, within the Warren River catchment.

**Conclusion:** Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered likely to result in unacceptable impacts to water quality in the Lefroy Brook Catchment Area, which provides the town of Pemberton with its sole water supply. The proposed clearing may also contribute to salinisation within the Warren River catchment.

### **3.3. Relevant planning instruments and other matters**

Other relevant authorisations for the proposed land use include:

- development approval under the Planning and Development Act 2005 (issued by the Shire of Manjimup);
- license to clear under the Country Areas Water Supply Act 1947 (CAWS Act);
- licence to abstract water under the Rights in Water and Irrigation Act 1914 (RIWI Act); and
- permit to interfere with bed and banks under the RIWI Act.

The Shire of Manjimup advised DWER that the proposed clearing area is zoned as 'Priority Agriculture' under the Shire's Local Planning Scheme No. 4 and that planning approval for clearing of vegetation is not required in this zone (Shire of Manjimup, 2020). The Shire noted that should the expanded edge of the proposed dam and/or dam wall be less than 20 metres of any lot boundary, then Shire planning approval for the dam works would be required. A planning approval application had not been received (Shire of Manjimup, 2020).

The proposed clearing area lies within the 1 September 1978 CAWS Act gazetted Warren River Water Reserve, subject to CAWS Act native vegetation clearing controls since December 1978 to prevent salinisation of water resources. The proposed clearing is located within Zone D of the catchment. This is a low salinity risk area where DWER Policy and Guidelines for the 'Granting of Licences to Clear Indigenous Vegetation' (Department of Water, 2010) provide for the grant of a licence to clear for any purpose subject to the statutory requirement that 10% of the land in question remains uncleared unless there are exceptional reasons for not refusing an application (CAWS Act Section 12C (3)) (DWER, 2020b).

Analysis of 2017 imagery indicates that the land owner's holdings currently have slightly less than the statutory requirement that one-tenth of a land holding remains uncleared, with ~9.8% (29.41 ha) of native vegetation remaining (DWER, 2020b). If a clearing permit were granted for a further 8.34 ha of clearing only ~6.7% (21.07 ha) of native vegetation would remain. DWER does not recognise dam construction to be an exceptional circumstance for the purposes of Section 12C (3) of the CAWS Act, as it is common in the area and there are several dams already in existence on the property. Consequently, a CAWS Act license would not be granted for the proposed clearing.

The Lefroy Brook surface water resource, which would supply the proposed dam, is fully allocated for self-supply. As such the applicant has been advised that an increase to its current surface water entitlement, which is captured in its existing dams, could not be provided under the RIWI Act; however, permanent trading of part or whole entitlements and temporary movement of part entitlements is possible, which may allow for the proposed dam to be supported under certain conditions (DWER, 2020c).

The proposed dam would require the applicant to obtain a permit to interfere with bed and banks under the RIWI Act (DWER, 2020c). On 17 May 2021, DWER received an application under the RIWI Act for the proposed dam. DWER advised the applicant on 16 June 2021 that it intended to refuse the application, considering the proposal to be environmentally and ecologically unacceptable. On 21 July 2021, having received no further correspondence from the applicant in support of the application, DWER refused the application.

The application area falls within the Lefroy Brook Catchment Area proposed to be gazetted under the *Country Areas Water Supply Act 1947* (CAWS Act) and the associated Lefroy Brook Weir provides the town of Pemberton with its sole supply of drinking water (DWER, 2020a). A drinking water source protection plan (DWSP) for this area has not yet been prepared and priority areas within this area have not yet been assigned. In the absence of a DWSP document, the application area would be managed as a 'reservoir protection zone', as it is within 2 kilometres of the Lefroy Brook Weir's high water mark, and as a 'Priority 2' area, in accordance with *Water quality protection note no. 25 - Land use compatibility tables for public drinking water source areas* (WQPN25) (Department of Water, 2016) and the *Lefroy Brook Catchment Area drinking water source protection assessment* (Water Corporation, 2004) (DWER, 2020a).

DWER's *Water quality protection note no. 53 - dam construction and operation in rural areas* (DWER, 2019) states that to minimise the risk of harm to water quality or availability of the drinking water source, rural water supply dams



should not be constructed within reservoir protection zones of public drinking water source areas (PDWSAs) unless approved in writing by the Department of Water and Environmental Regulation. As such, the proposed dam is not supported by DWER (2020a).

No Aboriginal Sites of Significance are mapped within the application area.

It is noted that during the assessment, the applicant proposed changing the purpose of clearing from dam construction to either horticulture or pasture for grazing in the event that the proposed clearing for a dam is refused. Although the decision to refuse this clearing permit application has been made based upon the purpose of the clearing being for dam construction, an application for clearing of the same area for the purposes of either horticulture or pasture for grazing would still be likely to be refused based on the following:

- A license to clear under the CAWS Act would still not be able to be issued for the proposed clearing;
- Clearing for the purposes of either horticulture or pasture for grazing would require a buffer of riparian vegetation to remain on either side of the mapped watercourse to prevent impacts to water quality. DWER policy is that a minimum buffer of 30 metres of riparian vegetation be retained around non-perennial streams, and that buffers should be progressively increased where land slopes exceed one in ten, and that slopes exceeding one in seven are generally considered too steep for development (where the slope of the application area ranges from one in four to one in eight) (Department of Water, 2006b). As such, in order for the proposed clearing to meet the requirements of this policy, the vast majority of the proposed clearing area would need to be retained.

**End**

## Appendix A – Site characteristics

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

### A.1. Site characteristics

Site characteristic	Details
Local context	<p>The proposed clearing area is immediately surrounded by cleared agricultural land to the south, native vegetation to the north, east and southwest, and a dam to the northwest. The proposed clearing area is part of a linkage, associated with the Lefroy Brook, which connects an expansive tract of native vegetation to the north of the application area with an area of vegetation to the south adjacent to the town of Pemberton. The application area is also part of a small local linkage connecting vegetation within Big Brook State Forest to the north-east to Donnelly State Forest to the south-west.</p> <p>Spatial data indicates the local area (10 km radius of the proposed clearing area) retains approximately 51% of the original native vegetation cover.</p>
Conservation areas	<p>The Big Brook State Forest is approximately 100 m north-east and the Donnelly State Forest is approximately 800 m south-west of the application area.</p>
Vegetation description	<p>Site inspections conducted in 2012 for overlapping clearing permit application CPS 2888/1 (Department of Environment and Conservation, 2012) and in 2020 (Commissioner of Soil and Land Conservation, 2020) indicate the vegetation within the proposed clearing area predominantly consists of <i>Eucalyptus diversicolor</i> (karri) forest with middle storey species including <i>Casuarina decussata</i> (karri she-oak) and understorey species including <i>Acacia pentadenia</i> (karri wattle) and <i>Pteridium esculentum</i> (bracken). Riparian areas surrounding the watercourse are likely to comprise different vegetation species.</p> <p>This is consistent with the mapped vegetation types:</p> <ul style="list-style-type: none"> <li>Pemberton 1 (Valleys landform) (western portion of application area), which is described as Tall open forest of <i>Eucalyptus diversicolor</i> with mixtures of <i>Corymbia calophylla</i> on valley slopes and low forest of <i>Agonis juniperina-Banksia seminuda-Callistachys lanceolata</i> on valley floors in the perhumid zone.</li> <li>Lefroy (Valleys landform) (eastern portion of application area), which is described as Tall open forest of <i>Eucalyptus diversicolor-Corymbia calophylla</i> on slopes and low woodland of <i>Agonis juniperina-Callistachys lanceolata</i> on lower slopes in hyperhumid and perhumid zones (Mattiske and Havel, 1998).</li> </ul>
Vegetation condition	<p>Site inspections conducted in 2012 for overlapping clearing permit application CPS 2888/1 (Department of Environment and Conservation, 2012) and in 2020 (Commissioner of Soil and Land Conservation, 2020) indicate the vegetation within the proposed clearing area in Good (to the east) to Degraded (to the west) (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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</li> </ul>

Site characteristic	Details
	<p>caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.</p> <p>The area has been grazed by livestock and partly cleared, particularly closer to the existing dam present to the west of the application area.</p> <p>The full Keighery condition rating scale is provided in Appendix E, below. Representative photos are available in Appendix F.</p>
Climate	<p>Rainfall: 1300 mm</p> <p>Evapotranspiration: 900 mm</p>
Topography	Elevation ranges from 95 m AHD on the eastern boundary of the application area along the watercourse, to 125 m along the northern application area boundary and 120 m along the south-western application area boundary.
Soil description	<p>Soil within the application area is mapped as:</p> <ul style="list-style-type: none"> <li>Pemberton Subsystem (Pimelaia) (254PvPM) (western portion of application area), described as 20 to 40 m deep, flat to gently sloping floors. Few channels. 3 to 10 deg. Smooth slopes. Red or yellow gradational soils, not calcareous with some red duplex soils.</li> <li>Lefroy Subsystem (Pimelia) (254Pv) (eastern portion of application area), described as Valleys 40 to 60 m deep. Slopes smooth, 10 to 20 deg. Narrow terrace. Red gradational soils, not calcareous with some red and brown duplex profiles (DPIRD, 2017).</li> </ul>
Land degradation risk	<p>Soil within the application area is mapped as:</p> <ul style="list-style-type: none"> <li>Wind erosion <ul style="list-style-type: none"> <li>254PvPM - 30-50% of map unit has a high to extreme wind erosion risk</li> <li>254PvLF – 10-30% of map unit has a high to extreme wind erosion risk</li> </ul> </li> <li>Water erosion <ul style="list-style-type: none"> <li>254PvPM - 10-30% of map unit has a high to extreme water erosion risk</li> <li>254PvLF – 30-50% of map unit has a high to extreme water erosion risk</li> </ul> </li> <li>Waterlogging <ul style="list-style-type: none"> <li>254PvPM - 5% of map unit has a moderate to very high to waterlogging and inundation risk</li> <li>254PvLF – &lt;3% of map unit has a moderate to very high to waterlogging and inundation risk</li> </ul> </li> <li>Subsurface acidification - &gt;70% of map unit has a high subsurface acidification risk or is presently acid</li> <li>Phosphorus export <ul style="list-style-type: none"> <li>254PvPM – 30-50% of map unit has a high to extreme phosphorus export risk</li> <li>254PvLF – 50-70% of map unit has a high to extreme phosphorus export risk</li> </ul> </li> <li>Salinity - &lt;3% of map unit has a moderate salinity risk or is recently saline</li> <li>Flood risk - &lt;3% of the map unit has a moderate to high flood risk (Schoknecht et al, 2004)</li> </ul>
Waterbodies	A watercourse runs within the application area from west to east, to meet the Lefroy Brook (a perennial watercourse) approximately 75 metres east of the application area. Although mapped as non-perennial, aerial imagery indicates at least some of this watercourse is likely to be perennially flooded. A series of dams is present 40 metres upstream of the application area associated with the same watercourse.



Site characteristic	Details
	A paluslope wetland is mapped 140 m to the east of the application area.
Hydrogeography	<p>Groundwater Salinity (Total Dissolved Solids): 500-1000 mg/L.</p> <p>Hydrogeology: Rocks of low permeability, fractured and weathered rocks - local Aquifers. Granitoid lithology.</p> <p>The application area falls within Zone D of the Warren River Water Reserve gazetted under the <i>Country Areas Water Supply Act 1947</i>.</p> <p>The application area falls within the Lefroy Brook Catchment Area proposed to be gazetted under the <i>Country Areas Water Supply Act 1947</i>. A drinking water source protection plan (DWSPP) for this area has not yet been prepared and priority areas within this area have not yet been assigned. In the absence of a DWSPP document, it is considered that the application area is within a Reservoir Protection Zone and a Priority 2 area (see Section 3.3 for further information).</p> <p>The application area falls within the Warren River and Tributaries Surface Water Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i>.</p>
Flora	There are records of 2 threatened and 1 priority flora species within the local area (10 km), the closest of which is Threatened <i>Commersonia apella</i> located approximately 2.0 km south-east from the application area.
Ecological communities	The buffers of areas of two priority ecological communities have been recorded within the local area, the closest of which is the buffer of the Priority 3 Epiphytic Cryptogams of the karri forest ecological community located approximately 1.8 km to the north-east.
Fauna	Ten threatened fauna species, six priority fauna species, four other specially protected fauna species have been recorded within the local area, the closest of which is Priority 3 <i>Geotria australis</i> (Pouched lamprey), located approximately 200 m north-east of the application area.

## A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	% remaining	Current extent in all DBCA managed land (ha)	% current extent in all DBCA managed land (proportion of pre-European extent)
IBRA bioregion					
Warren*	833,985.56	659,432.21	79.07	558,485.38	66.97
Vegetation complex					
Pemberton 1 (221)**	25,801.16	16,661.53	64.58	15,021.45	58.22
Lefroy (167)**	20,125.52	16,460.26	81.79	14,736.69	73.22

\*Government of Western Australia (2019a)

\*\*Government of Western Australia (2019b)

### A.3. Flora analysis table

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

Flora Species	Cons code	Number of records in local area	Number of records in Florabase	Distance of closest record to application area (km)	Suitable soil type?	Suitable vegetation type?	Suitable habitat features?	Surveys adequate to identify?
<i>Caladenia christineae</i>	T	1	55	6.4	Y	Y	possible	N/A
<i>Commersonia apella</i>	T	3	9	2.1	Y	Y	possible	N/A

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

### A.4. Fauna analysis table

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

Fauna Species	Listing	Number of records in local area	Distance of closest record to application area (km)	Most recent record	Suitable habitat features	Surveys adequate to identify?
<i>Bettongia penicillata ogilbyi</i> (Woylie, brush-tailed bettong)	T	2	2.8	2001	Y	N/A
<i>Pseudocheirus occidentalis</i> (Western ringtail possum, ngwayir)	T	14	2.8	2004	Y	N/A
<i>Calyptorhynchus baudinii</i> (Baudin's cockatoo)	T	37*	1.4	2018	Y	N/A
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	T	5*	2.5	2017	Y	N/A
<i>Calyptorhynchus banksii naso</i> (Forest red-tailed black cockatoo)	T	9	2.7	2018	Y	N/A
<i>Galaxiella munda</i> (Mud minnow, western dwarf galaxias)	T	4	1.4	1996	Y	N/A
<i>Psuedocheirus occidentalis</i> (western ringtail possum)	T	14	2.8	2004	Y	N/A
<i>Setonix brachyurus</i> (Quokka)	T	23	2.5	2019	Y	N/A
<i>Westralunio carteri</i> (Carter's freshwater mussel)	T	10	2.2	2011	Y	N/A
<i>Ixobrychus flavicollis australis</i> (Black bittern (southwest subpop.))	P2	1	3.7	2016	Y	N/A
<i>Geotria australis</i> (Pouched lamprey)	P3	17	0.2	2012	Y	N/A
<i>Tyto novaehollandiae novaehollandiae</i> (Masked Owl (southwest))	P3	2	2.8	Not listed	Y	N/A
<i>Hydromys chrysogaster</i> (Water-rat, rakali)	P4	26	1.8	2019	Y	N/A
<i>Isodon fusciventer</i> (Quenda, southwestern brown bandicoot)	P4	16	2.6	2018	Y	N/A
<i>Oxyura australis</i> (Blue-billed duck)	P4	1	6.4	2000	Y	N/A
<i>Cacatua pastinator pastinator</i> (Muir's corella)	CD	2	7.7	1999	Y	N/A
<i>Phascogale tapoatafa wambenger</i> (South-western brush-tailed phascogale, wambenger)	CD	16	2.3	2018	Y	N/A

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

## A.5. Ecological community analysis table

With consideration for the site characteristics set out above and relevant datasets (see Appendix E.1.) impacts to the following conservation significant ecological communities required further consideration.

Community name	Cons code	Suitable habitat features?	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify?
Epiphytic Cryptogams of the karri forest	P3	Y	Y	Y	1.8 (buffer)	126	N/A

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

## Appendix B – Assessment against the Clearing Principles

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<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 proposed clearing area may contain conservation significant flora, fauna, habitats and assemblages of plants.</p>	May be at variance	Yes: Refer to Section 3.2.1 and Section 3.2.2 above.
<p><u>Principle (b):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</p> <p><u>Assessment:</u> The proposed clearing area may contain significant habitat for conservation significant fauna.</p>	May be at variance	Yes: Refer to Section 3.2.1 above.
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u> The proposed clearing area may contain flora species listed under the BC Act.</p>	May be at variance	Yes: Refer to Section 3.2.2 above.
<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 proposed clearing area is not likely to contain species indicative of a threatened ecological community listed under the BC Act.</p>	Not likely to be at variance	No
<b>Environmental values: significant remnant vegetation and conservation areas</b>		
<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> Extents of the mapped vegetation types and native vegetation in the local area are consistent with the national objectives and targets for biodiversity conservation in Australia. Vegetation in the proposed clearing area is not considered to be a critical part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	No

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
<b>Environmental values: land and water resources</b>		
<p><u>Principle (f):</u> <i>"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."</i></p> <p><u>Assessment:</u> A watercourse is recorded within the proposed clearing area.</p>	Is at variance	Yes: Refer to Section 3.2.3 above.
<p><u>Principle (g):</u> <i>"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."</i></p> <p><u>Assessment:</u> The mapped soils are highly susceptible to phosphorus export and subsurface acidification, and moderately susceptible to wind and water erosion. However, noting the proposed end land use (dam), the clearing is not expected to result in appreciable land degradation (Commissioner of Soil and Land Conservation, 2020).</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> The proposed clearing is likely to result in increased turbidity in the watercourse present within the application area which may in turn impact the Public Drinking Water Source Area that provides the sole supply to the town of Pemberton. The proposed clearing may also contribute to salinisation of the Warren River catchment.</p>	At variance	Yes: Refer to Section 3.2.3 above.
<p><u>Principle (j):</u> <i>"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."</i></p> <p><u>Assessment:</u> The mapped soils, topographic contours and proposed end land use indicate the proposed clearing is not 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.

### Measuring Vegetation Condition for the South West and Interzone Botanical Province (Keighery, 1994)

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

## Appendix D – Photographs of the vegetation



Figure D-1- Looking east from southwestern corner of application area (CLSC, 2020)





Figure D-2- Looking east from western border of application area – karri trees (CLSC, 2020).



Figure D-3 – Looking north from watercourse – karri trees and understorey (CLSC, 2020).





Figure D-4 – Looking north from south-eastern portion of application area – karri trees and understorey (CLSC, 2020).

## Appendix E – References and databases

### E.1. GIS datasets

Publicly available GIS Databases used (sourced from [www.data.wa.gov.au](http://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)
- CAWSA Part 2A Clearing Control Catchments (DWER-004)
- 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)
- Geomorphic Wetlands Manjimup to Northcliffe – Unreviewed (DBCA-044)
- 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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