



GOVERNMENT OF
With Parliament
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9146/1
File Number: DWERVT7174
Duration of Permit: From 19 February 2021 to 19 February 2023

PERMIT HOLDER

Shire of Serpentine Jarrahdale

LAND ON WHICH CLEARING IS TO BE DONE

Lot 427 on Deposited Plan 202731, Oldbury

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.086 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

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

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

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

2. Weed and dieback management

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

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

- (b) ensure that no known dieback or weed-affected soil, mulch, fill, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner from east to west to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

4. 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); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; and (f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 2.

5. Reporting

The permit holder must provide to the *CEO* the records required under condition 4 of this permit when requested by the *CEO*.

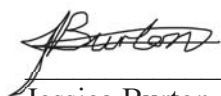
DEFINITIONS

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

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
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



Jessica Burton
A/Manager
NATIVE VEGETATION REGULATION

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

27 January 2021

SCHEDULE 1

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



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



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9146/1
Permit type:	Area permit
Applicant name:	Shire of Serpentine Jarrahdale
Application received:	11 December 2020
Application area:	0.086 hectares of native vegetation
Purpose of clearing:	Recreation
Method of clearing:	Mechanical
Property:	Lot 427 Deposited Plan 202731
Location (LGA area/s):	Shire of Serpentine Jarrahdale
Localities (suburb/s):	Oldbury

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 clear trees and shrubs to enable an increase of the size of the current horse arena.

1.3. Decision on application

Decision:	Granted
Decision date:	27 January 2021
Decision area:	0.086 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 C), relevant datasets (see Appendix G.1), the clearing principles set out in Schedule 5 of the EP Act (see Appendix D), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the application is for a small-scale extension of an existing facility.

The assessment identified that the proposed clearing will result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values and
- potential impact to individual fauna species that may be within the proposed clearing area.

#

#

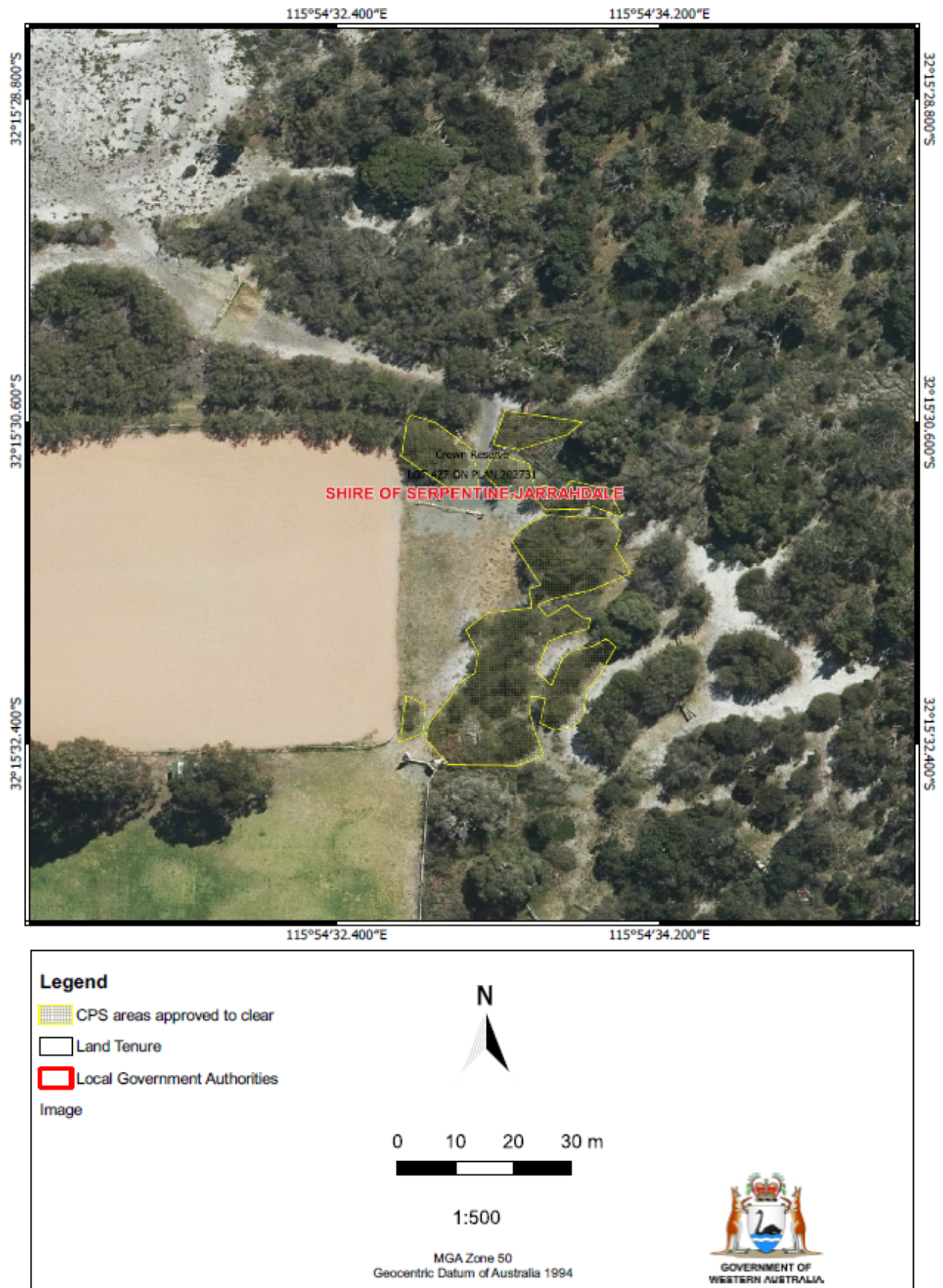
After consideration of the available information, the Delegated Officer determined the proposed clearing is unlikely to lead to appreciable land degradation or have long-term adverse impacts on environmental values and can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

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

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds; and
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

#

1.5. Site map



#

Figure 1 Map of the application area

The areas crosshatched 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
- 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

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. Supporting information provided by the applicant noted that the area for expansion of the arena avoids the larger melaleuca trees and the size of the expansion has been reduced (Shire of Serpentine Jarrahdale 2020b).

3.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles (see Appendix D) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard avoid and minimize, weed and dieback and staged clearing (fauna) management conditions.

#

3.2.1. Biological values – Flora and vegetation - Clearing Principle (Principle a)

Assessment

According to available databases, 6 threatened and 28 priority flora have been recorded in the local area. In forming a view on the likelihood of these species occurring within the application area, the preferred habitat types of these species and their recorded proximity to the application area were considered, along with the vegetation/soil types and landforms within the application area.

Of the flora species within the local area, it was considered that a few had potential to occur within the area proposed to be cleared based on mapped soil types and vegetation types (Appendix C and C.3). However, it was considered that as the mapped vegetation type does not match the vegetation shown in the photographs provided by the applicant, and noting the degraded condition of the application area, habitat for these species are considered not likely to occur within the application area. In addition to this, some of the species within the local area had an association with fire events or with sedge like environments, both of which are not present within the application area.

The application area is within a mapped occurrence of '*Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region*' a threatened ecological community as listed under the *Environment Protection and Biodiversity Conservation Act 1999*. Given the application area is void of the key species that comprise this community, the application area is not representative of this community or any other Priority Ecological community.

Conclusion

For the reasons above, it is considered that the vegetation within the application area does not comprise a high level of biodiversity.

#

Conditions No conditions are proposed for flora and vegetation.

3.2.2. Biological values – Fauna - Clearing Principle (Principle b)

Assessment

The application area contains small trees/shrubs over a mixed understory. The absence of large trees limits the area from providing breeding or roosting habitat for threatened black cockatoo species known to occur within the local area. Considering the vegetation type within the application area it is not likely to provide any foraging habitat for these species.

The understory present in the application area indicates it may provide habitat for the southwestern brown bandicoot as it has the preference of scrubby vegetation with dense cover. The application area may also provide habitat for reptile species such as the southern death adder, Black-striped snake, the Perth slider, and Swan Coastal Plain shield-backed trapdoor spider. It is noted that the application area is disturbed and is part of a larger remnant which is likely to be less disturbed. It is also considered these species would be less likely to occupy the application area on a permanent basis as it is immediately adjacent to the current arena and is subject to disturbance.

Conclusion

Based on the above assessment, the proposed clearing may result in impacts to individuals of the species listed above if present at the time of clearing, however these impacts are not likely to impact the species at a local or regional level and are not likely to change the conservation status of the species.

For the reasons set out above, it is considered that the impacts of the proposed clearing on priority fauna species can be managed by slow directional clearing to allow fauna to move into adjacent vegetation.

Conditions

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

- Slow directional clearing to allow fauna species to move into adjacent vegetation ahead of the clearing activity will minimise impact to individuals

3.2.3. Land and water resources - Clearing Principle (Principle f)

Assessment:

The majority of the of the application area is mapped within a Multiple Use Category Dampland (ID 14808) and the application area includes vegetation considered riparian. Clearing is therefore at variance with Principle (f). Multiple Use Wetlands are considered wetlands with few remaining important attributes and functions (EPA 2004; EPA 2008; Water and Rivers Commission 2001). The management objective should be to take all reasonable measures to retain the wetland's hydrological function (EPA 2008),but is not incompatible with clearing. A Conservation Category Sumpland (ID 15423) is located more than 800 meters to the north and to the south of the application area.

Riparian vegetation within the application area was identified by the applicant as being *Kunzea ericifolia* and *Melaleuca teretifolia* (Shire of Serpentine Jarrahdale, 2020a). The application area appears to have an understory of bare areas, mixed grasses and *Carpobrotus* sp. The vegetation is in a degraded condition (Keighery 1994) determined from information provided by the applicant.

The application will impact on riparian vegetation that is growing in, or in association with, an environment associated with a wetland. However, considering the relatively small size and degraded condition of the application area, the impact on environmental values is considered minor. Proposed clearing is unlikely to impact the Conservation Category Damplands located approximately over 800 metres to the north and south, due to the separation distance and the cleared land separating the two areas.

Conclusion

Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered acceptable in relation to this environmental value.

Conditions: No land or water resources, or flora/vegetation management conditions required.

#

3.3. Relevant planning instruments and other matters

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 C. Site characteristics

C.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of a 21-hectare patch within a tract of native vegetation in the intensive land use zone of Western Australia. It is surrounded by rural properties but maintains some linkage values to other patches within the local area.</p> <p>Aerial imagery indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 20 per cent of the original native vegetation cover.</p>
Ecological linkage	The application area is not part of any mapped linkage but may contribute to the local linkages.
Conservation areas	The application area is located approximately 850 meters north of a Bush Forever Site (Site 68 known as Banksia Nature Reserve).
Vegetation description	<p>Photographs and descriptions provided by the applicant indicate the vegetation within the proposed clearing area consists of <i>Kunzea ericifolia</i>, <i>Melaleuca teretifolia</i> and <i>Dianella revoluta</i>. Representative photos are available in Appendix F.</p> <p>This is inconsistent with the mapped vegetation type(s):</p> <ul style="list-style-type: none"> Bassendean Complex – Central and South Swan Coastal Plain- , which is described as vegetation that ranges from woodland of <i>Eucalyptus marginata</i> (Jarrah) - <i>Allocasuarina fraseriana</i> (Sheoak) - Banksia species to low woodland of Melaleuca species, and sedgelands on the moister sites. This area includes the transition of <i>Eucalyptus marginata</i> (Jarrah) to <i>Eucalyptus tottiana</i> (Pricklybark) in the vicinity of Perth) (Hedde et al., 1980).
Vegetation condition	<p>Photographs provided by the applicant indicate the vegetation within the proposed clearing area is in degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> 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. <p>The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photos are available in Appendix F.</p>
Climate and landform	The application area is within a flat with an elevation of approximately 20 meters. The annual mean rainfall for the Perth metro area is 730.9 millimetres.
Soil description	The soil is mapped as Bassendean B2 Phase which is described as flat to very gently undulating sandplain with well to moderately well drained deep bleached grey sands with a pale yellow B horizon or a weak iron-organic hardpan 1-2 m.
Land degradation risk	The mapped soil type has low risk for land degradation in the form of flood risk, salinity risk, water erosion risk and water logging risk and a moderate to high risk of wind erosion, water repellence, subsurface acidification, and phosphorus export risk.
Waterbodies	The desktop assessment and aerial imagery indicated that the application area is partly within a mapped multiple use dampland and is located approximately 800 meters north of the Serpentine River.
Hydrogeography	The application area is within the Serpentine Groundwater area. The mapped groundwater salinity within the application area is 500-1000 milligrams per litre.

#

Characteristic	Details
Flora	According to available databases, there are 34 flora records in local area, nearest record being <i>Acacia lasiocarpa</i> var. <i>bracteolata</i> long peduncle variant (G.J. Keighery 5026) located approximately 2.2 kilometres from the application area.
Ecological communities	There are 11 mapped Priority Ecological Communities (PEC)/Threatened Ecological Communities within the local area. The application area is mapped within 'Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region', a TEC listed as endangered under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
Fauna	According to available databases, 32 fauna records in local area, the nearest record and most frequently occurring species being southwestern brown bandicoot (<i>Isodon fusciventer</i>).

C.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
Hedde vegetation complex Bassendean Complex – Central and South Swan Coastal Plain **	87,476.26	23,508.66	26.87	4,377.36	5
Local area			20		

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

C.3. Flora analysis table

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

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
<i>Acacia lasiocarpa</i> var. <i>bracteolata</i> long peduncle variant (G.J. Keighery 5026)	1	Y	Y	Y	2.2	N/A
<i>Cyathochaeta teretifolia</i>	3	Y	Y	Y	3.3	N/A
<i>Boronia juncea</i> subsp. <i>juncea</i>	1	Y	Y	Y	3.3	N/A
<i>Jacksonia gracillima</i>	3	Y	Y	Y	3.9	N/A
<i>Diuris purdiei</i>	T	N	N	N	3.5	N/A
<i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>	4	N	N	N	3.9	N/A

#

C.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calyptorhynchus baudinii</i> (Baudins cockatoo)	EN	N	N	6.7	N/A
<i>Calyptorhynchus latirostris</i> (Carnabys cockatoo)	EN	N	N	2.2	N/A
<i>Calyptorhynchus banksii naso</i> (forest red-tailed cockatoo)	VU	N	N	3.1	N/A
<i>Synemon gratiosa</i> (graceful sunmoth)	P	N	N	5.5	N/A
<i>Falco peregrinus</i> (Peregrine falcon)	OS	N	N	4	N/A
<i>Phascogale tapoatafa wambenger</i> (South-western brush-tailed phascogale)	CD	N	N	2	N/A
<i>Isoodon fusciventer</i> (southwestern brown bandicoot)	P	Y	Y	1.1	N/A
<i>Acanthophis antarcticus</i> (Southern death adder)	P	Y	Y	10	N/A
<i>Dasyurus geoffroii</i> (Churditch)	VU	N	N	6.2	N/A
<i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)	P	Y	Y	8.5	N/A
<i>Lerista lineata</i> (Perth slider)	P	Y	Y	3	N/A
<i>Notamacropus irma</i> (western brush wallaby)	P	N	N	2.2	N/A
<i>Myrmecobius fasciatus</i> (Numbat)	EN	N	N	10	N/A
<i>Setonix brachyurus</i> (quokka)	VU	N	N	10	N/A

#

#

#

#

C.5. Land degradation risk table

Risk categories	Bassendean B2 Phase
Wind erosion	30-50% of map unit has a high to extreme wind erosion risk
Water erosion	<3% of map unit has a high to extreme water erosion risk
Salinity	<3% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	>70% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	<3% of the map unit has a moderate to high flood risk
Water logging	3-10% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	>70% of map unit has a high to extreme phosphorus export risk

Appendix D. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>The vegetation proposed to be cleared is mapped as Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region (listed as endangered under the EPBC Act), and may contain habitat for Priority flora species based on mapped values.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."</p> <p><u>Assessment:</u> The area proposed to be cleared does not contain significant habitat for fauna but may provide some habitat for ground dwelling species such as the southern brown bandicoot and some reptile species.</p>	May be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared is unlikely to contain habitat for flora species listed under the BC Act.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain species that can indicate a threatened ecological community. This community is listed as 'Endangered' (etc) under the BC Act.</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		

#

Assessment against the clearing principles	Variance level	Is further consideration required?
<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></p> <p>The extent of 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#	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></p> <p>Given the distance to the nearest conservation area is more than two kilometres from the application area (Bush forever site 68, Banksia Nature reserve), the proposed clearing is not likely to have an impact on the environmental values of this, or any other nearby conservation areas.</p>	Not likely to be at variance#	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given the application is within a mapped multiple use dampland and the flora species within the application area are known to grow in association with winter wet areas and depressions.</p>	At variance#	Yes <i>Refer to Section 3.2.3, above.</i>
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are moderately susceptible to wind erosion and highly susceptible to phosphorus export risk, subsurface acidification and water repellence. Noting the location and size of the application area and the condition of the vegetation remaining, 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></p> <p>The proposed activity will not intersect groundwater, and there are no defined drainage paths over the application area, or in the vicinity. Proposed clearing is unlikely to cause any deterioration in the quality of any surface waters or groundwater</p>	Not likely to be at variance#	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u> The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p> <p>The application area is within a mapped multiple use dampland, it is noted that the application area is small in comparison to the remaining adjacent vegetation.</p>	Not likely to be at variance#	No

#

Assessment against the clearing principles	Variance level	Is further consideration required?
Given no water courses are recorded within 700 meters of the application area, the proposed clearing is unlikely to contribute to waterlogging.		

Appendix E. Vegetation condition rating scale

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

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

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

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

#

#

Appendix F. Photographs of the vegetation



Figure 2: Location of photographs within the application area (Shire of Serpentine Jarrahdale, 2020b)

#

#

Photo 1 – Taken looking west

GPS – 115.909314, -32.258911



Photo 2 – Taken looking south west

GPS – 115.9093350, -32.2588812



#

Figure 3: Photographs within the application area (Shire of Serpentine Jarrahdale, 2020b)

#

#

#

Photo 3 – Taken looking south/ south east

GPS- 115.9093350, -32.2588812



Photo 4 – Taken looking north

GPS- 115.909314, -32.258911



#

Figure 4: Photographs within the application area (Shire of Serpentine Jarrahdale, 2020b)

#

Photo 5 – Taken looking west

GPS - 115.9092159, -32.2588839



Photo 6 – Taken looking south

GPS – 115.90933897, -32.258633333



#

Figure 5: Photographs within the application area (Shire of Serpentine Jarrahdale, 2020b)

#

#

Photo 7 – Taken looking east

GPS - 115.9091073, -32.2586238



Photo 8 – Taken looking south east

GPS - 115.9091073, -32.2586238



#

Figure 6: Photographs within the application area (Shire of Serpentine Jarrahdale, 2020b)

#

Appendix G. Sources of information

G.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)

G.2. References

Shire of Serpentine Jarrahdale (2020) *Clearing permit application CPS 9146/1*, received 11 December 2020 (DWER Ref: DWERVT390482).

Shire of Serpentine Jarrahdale (2020b) *Supporting information for clearing permit application CPS 9146/1*, received 23 December 2020 (DWER Ref: A1971848).

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.

Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development*. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed 11 January 2021).

Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.

Environmental Protection Authority (EPA) (2004). *Revised Draft Environmental Protection (Swan Coastal Plain Wetlands) Policy and Regulations 2004*. Environmental Protection Authority (EPA). November 2004.

#

Environmental Protection Authority (EPA) (2008) Environmental Guidance for Planning and Development Guidance Statement No 33. Environmental Protection Authority, Western Australia.

Government of Western Australia (2019) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, <https://catalogue.data.wa.gov.au/dataset/dbca>

Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>

Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Schoknecht, N., Tille, P. and Purdie, B. (2004) *Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs* Resource Management Technical Report No. 280. Department of Agriculture.

Water and Rivers Commission (2001) Position Statement: Wetlands, Water and Rivers Commission, Perth.

Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed January 2021)