



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9231/1
File Number: DWERVT7624
Duration of Permit: 12 November 2021 to 12 November 2023

PERMIT HOLDER

Godfrey Lloyd Burnside

LAND ON WHICH CLEARING IS TO BE DONE

Lot 30 on Plan 21574, Nornalup

AUTHORISED ACTIVITY

The permit holder must not clear more than 1.47 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 west to east to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

4. Vegetation management – fencing

The permit holder shall construct and/or maintain a fence along the perimeter outlined in red in Figure 2 of Schedule 1.

5. 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;(f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 2; and(g) evidence supporting compliance with conditions 3 and 4.

6. Reporting

The permit holder must provide to the *CEO* the records required under condition 5 of this permit when requested by the *CEO*.


DEFINITIONS

In this permit, the terms in Table 2 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

 Ryan Mincham
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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

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

20 October 2021

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below.



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

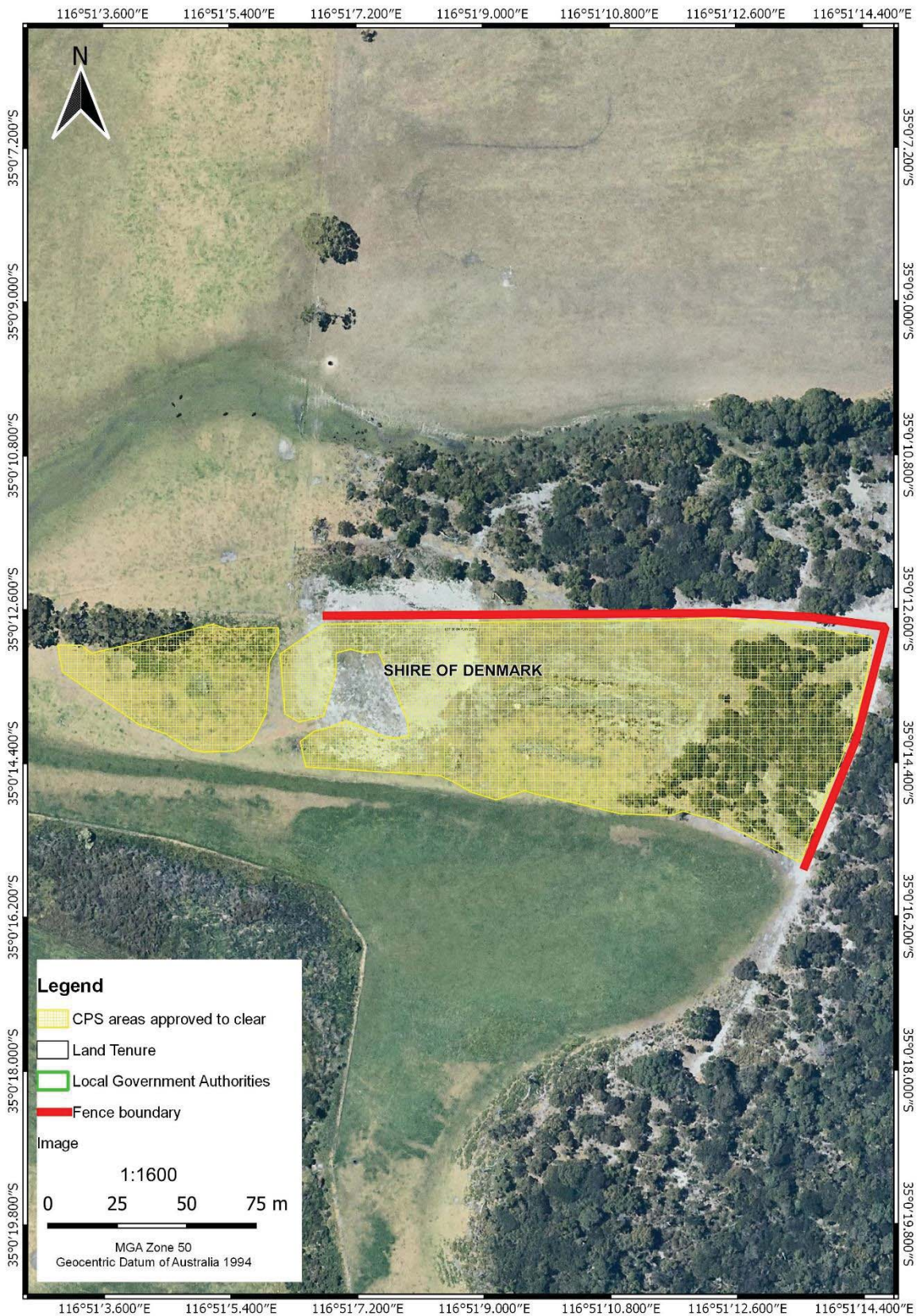


Figure 2. Map of the boundary of the fence required to be maintained



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9231/1
Permit type:	Area permit
Applicant name:	Mr Godfrey Lloyd Burnside
Application received:	8 March 2021
Application area:	1.47 hectares of native vegetation
Purpose of clearing:	Pasture
Method of clearing:	Mechanical
Property:	Lot 30 on Plan 21574
Location (LGA area):	Shire of Denmark
Localities (suburb):	Nornalup

1.2. Description of clearing activities

In total, the application area is 1.47 hectares in size, of which approximately 0.9 hectares has been previously cleared under clearing permit CPS 6187/1, for the purpose of extractive industry (see Figure 1, Section 1.5). Of this 0.9 hectares, approximately 0.2 hectares of vegetation was previously planted, while 0.7 hectares comprised native vegetation. The current application area comprises 0.57 hectares of native vegetation, with the remaining 0.9 hectares being cleared pasture. Approximately 0.4 hectares of the remaining 0.57 hectare vegetated area was authorised to be cleared under CPS 6187/1, however, was not previously cleared.

Clearing permit CPS 6187/1 required the Permit Holder to undertake revegetation and rehabilitation of all cleared areas post-extraction. The applicant now proposes to utilise the post-extraction area to establish and maintain pasture. Noting this, the applicant has reapplied for the same area as granted under clearing permit CPS 6187/1, plus an additional area to the east. The applicant has reapplied for the 0.9 hectares previously cleared under CPS 6187/1, to account for the clearing of any regrowth that may occur within this area. Previously granted clearing permit CPS 6187/1 has been surrendered.

1.3. Decision on application

Decision:	Granted
Decision date:	20 October 2021
Decision area:	1.47 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 two public submissions were received. Consideration of matters raised in the public submissions is summarised in Appendix B.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix C), relevant datasets (see Appendix H.1H.1), the clearing principles set out in Schedule 5 of the EP Act (see Appendix D Appendix D), relevant planning instruments, and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration that 0.9 hectares has been previously cleared under clearing permit CPS 6187/1 for extractive industry.

The assessment identified that the proposed clearing may result in:

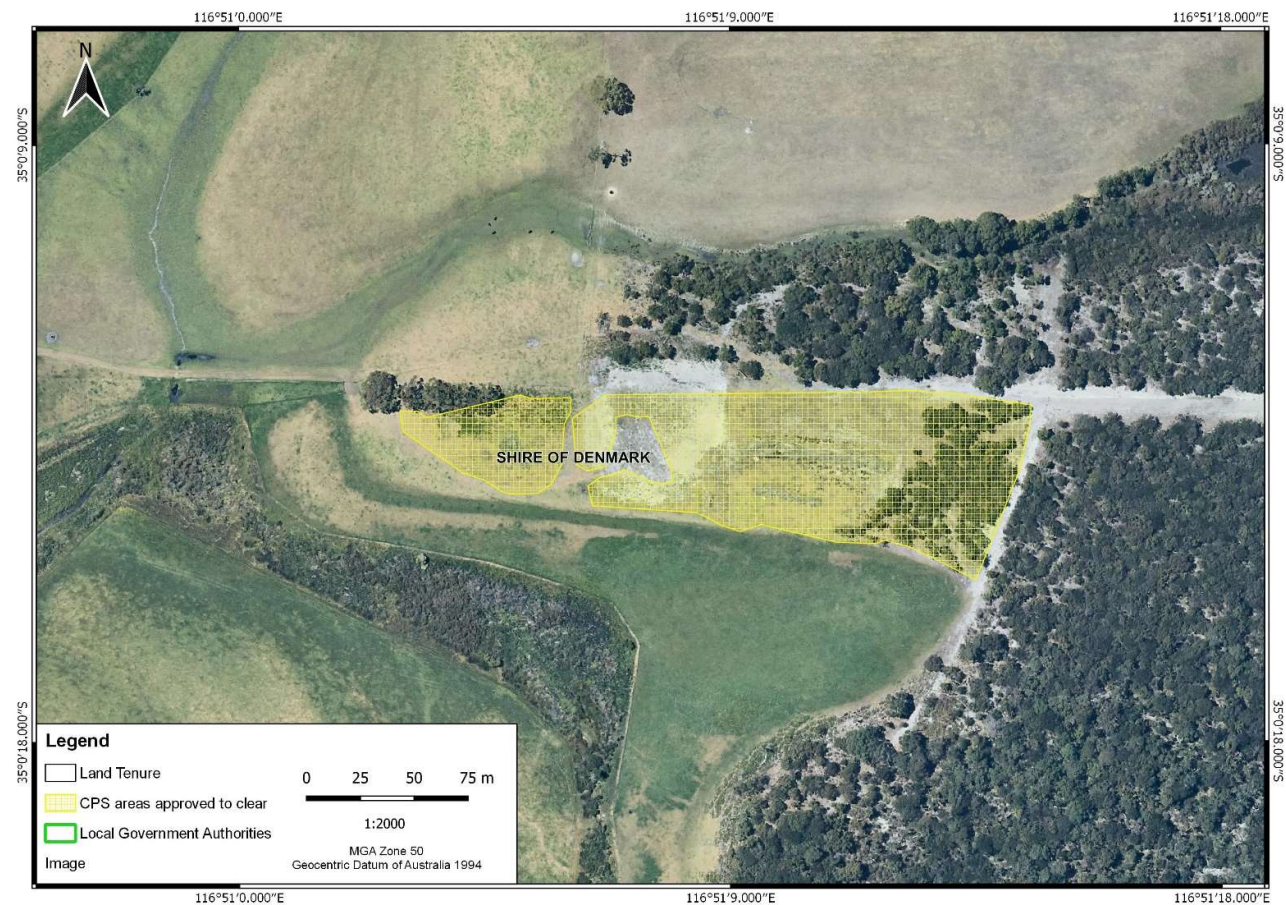
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- an increase in the risk of appreciable land degradation through wind erosion.

After consideration of the available information, as well as the applicant's mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to unacceptable impact on the environment.

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 dieback
- undertake slow, progressive and directional clearing to allow any ground-dwelling fauna to move out from the clearing area
- undertake staged clearing to ensure that the purpose of the clearing is enacted within three (3) months of the clearing activity, to minimise risk of appreciable land degradation

1.5. Site map



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, 2013)
- *Procedure: Native vegetation clearing permits* (DWER, 2019)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

To mitigate the impact of the proposed clearing and proposed end-land use, the applicant has advised that a fence has been erected on the northern and western side of the application area. The fence is to prevent cattle from inadvertently entering adjacent remnant vegetation, creek lines, and historical revegetation efforts that were undertaken in the 1990s after a fire and subsequent erosion event (Burnside, 2021b).

The Delegated Officer was satisfied that the applicant has undertaken reasonable measures 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 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 that the impacts of the proposed clearing present a risk to land degradation. 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 – Flora and Biodiversity - Clearing Principles (a) & (c)

Assessment

The application area ranges from completely degraded (pasture) to good (Keighery, 1994) condition. Due to the disturbed understorey, the vegetation within the application area is not considered to be consistent with the mapped Hazelvale vegetation complex, which is described as mosaic of low woodland to woodland of *Eucalyptus marginata* subsp. *marginata* – *Eucalyptus patens*, low forest of *Agonis juniperina* – *Callistachys lanceolata* with closed health of *Myrtaceae* spp. on sandy plains in the hyperhumid zone (Mattiske and Havel, 1998).

According to available databases, a total of 36 conservation significant flora species have been recorded within the local area (10 kilometre radius from the perimeter of the application area). Of these, one threatened flora species, *Drakaea micrantha*, listed under the BC Act, and five priority flora species, listed by the Department of Biodiversity, Conservation and Attractions (DBCA), have been recorded within the same mapped soil type and broad-scale vegetation complex as the application area. The priority flora species are *Alexgeorgea ganopoda* (P3), *Andersonia auriculata* (P3), *Boronia virgata* (P4), *Drosera binata* (P2), and *Stylidium leeuwinense* (P4). These priority flora species are all known from seasonally wet, waterlogged, or swampy areas, in grey to black peaty sand (Western Australian Herbarium, 1998-). The nearest records of conservation significant flora are *Andersonia auriculata* and *Stylidium leeuwinense* which have been recorded approximately 297 metres and 408 metres from the application area, respectively.

The application area does not comprise habitat that is suitable for the abovementioned priority flora species. The application area is mostly cleared, with 0.57 hectares of vegetation remaining on the eastern side. There are no watercourses, wetlands, or areas subject to inundation that intersect the application area. Based on land contour mapping, vegetation proposed to be cleared is approximately 10 metres higher in elevation compared to the surrounding areas. There are multiple perennial swamps within the vicinity of the application area, with one located approximately 120 metres northeast, and another located approximately 300 metres south. An area subject to inundation occurs approximately 230 metres north of the application area (Figure 2). These areas of wetlands and

areas subject to inundation may provide suitable habitat for the abovementioned priority flora species, however, the application area itself is unlikely to provide any significant habitat for priority flora.

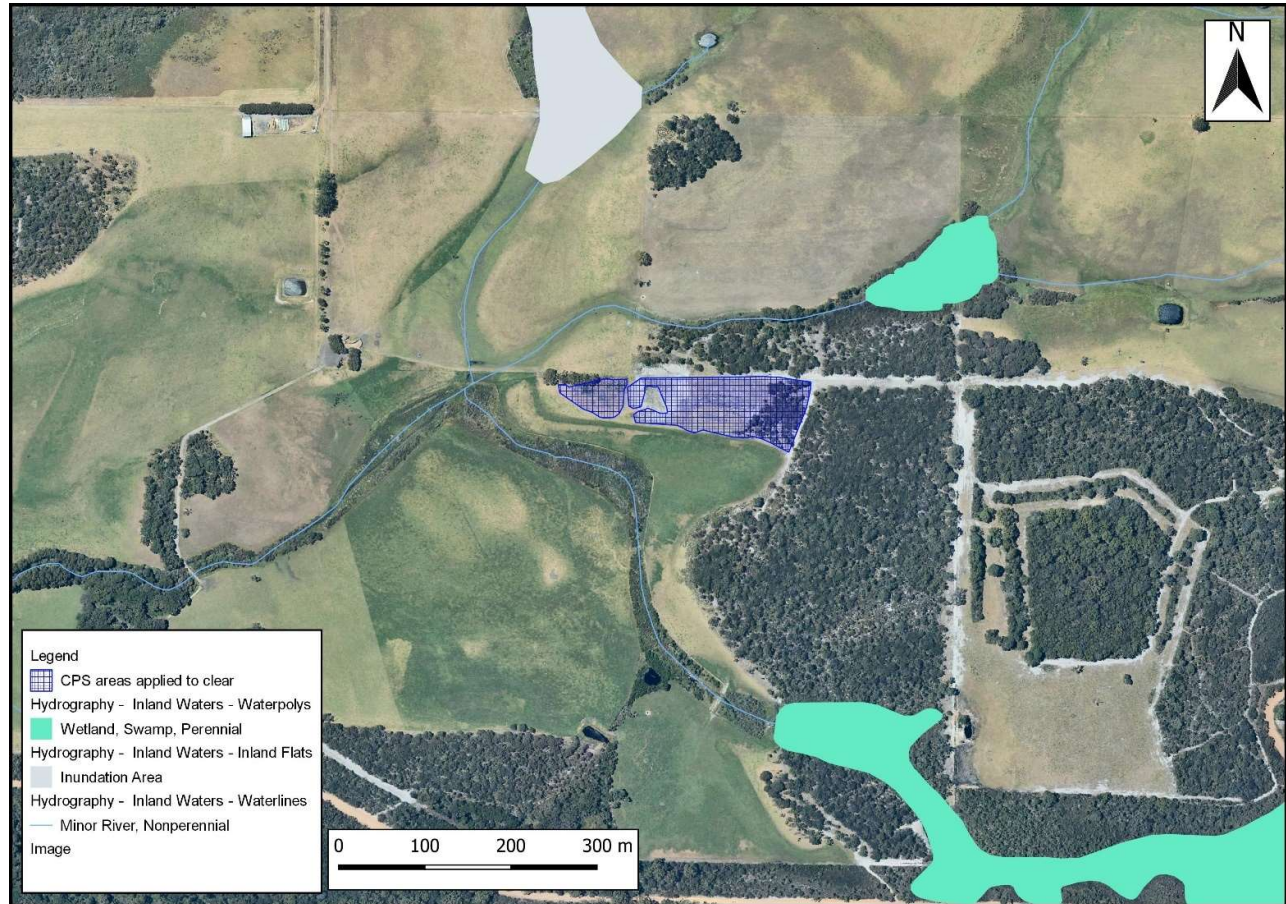


Figure 2. Location of watercourses, wetlands and areas subject to inundation nearby the application area.

Drakaea micrantha is usually found in cleared fire breaks or open sandy patches that have been disturbed, and where competition from other plants have been removed (DEWHA, 2008). This species occurs in infertile grey sands, in Banksia, Jarrah and Common Sheoak woodland or forest. It is often found under thickets of *Kunzea ericifolia* with *Paracaleana nigrita* and other *Drakaea* sp. (DEWHA, 2008). In the local context, this species has been recorded at two locations, with the nearest record being approximately 4.9 kilometres away. Noting the vegetation structure and composition of the application area, it is unlikely that the proposed clearing will impact habitat that is necessary for the continued existence of this species. Previous advice from the former Department of Parks and Wildlife for clearing permit CPS 6187/1 advised that *Drakaea micrantha* is unlikely to occur within the application area (DBCA, 2014).

There are no mapped threatened ecological communities (TECs) listed under the BC Act within the local area, and no priority ecological communities (PECs) listed by DBCA within 7 kilometres of the application area. The two PECs mapped within the local area are the Subtropical and Temperate Coastal Saltmarsh ecological community (P3), and the *Reedia spathacea* - *Empodisma gracillimum* – *Sporadanthus rivularis* dominated floodplains and paluslopes of the Blackwood Plateau ecological community (P1). The vegetation proposed to be cleared does not represent either of these PECs.

The application area does not represent an area of high biodiversity and has no unique attributes. The proposed clearing may result in the spread of weeds and dieback disease (*Phytophthora* sp.) into adjacent areas. Weed and dieback management practices would assist in minimising this risk.

Conclusion

Based on the above assessment, the proposed clearing may result in impacts to suitable habitat for conservation significant flora in adjacent vegetation through the introduction and spread of weeds and dieback.

Conditions

To address the above impact, dieback and weed management strategies will be implemented as a condition on the permit.

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

Assessment

According to available databases, and in consideration of the site characteristics (see Appendix C.4), the application area represents general habitat requirements for nine conservation significant fauna species, including Western ringtail possum (*Pseudocheirus occidentalis*) (CR), Western Australian pill millipede (*Cynotelopus notabilis*) (EN), Carnaby's cockatoo (*Calyptorhynchus latirostris*) (EN), Baudin's cockatoo (*Calyptorhynchus baudinii*) (EN), Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) (VU), mainland Quokka (*Setonix brachyurus*) (VU), Chuditch (*Dasyurus geoffroii*) (VU), South-west brush-tailed phascogale (*Phascogale tapoatafa wambenger*) (CD), and Quenda (*Isodon fusciventer*) (P4).

The Western Australian pill millipede (*Cynotelopus notabilis*) has a very restricted range, stretching along 115 kilometres of the southern coast, from Tinglewood in the west to Torbay Hill in the east (Main et al., 2002). Specimens of this species has been recorded from under rocks associated with granite tors, under logs and karri bark, and in deep leaf litter. Pill millipedes in general lack any significant dispersive stage and are vulnerable to localised extinction events, especially when the available habitat is severely disrupted by land clearing. The majority of the known range of this species occurs within conservation areas, including three National Parks, being Walpole-Nornalup, William Bay and West Cape Howe (Main et al., 2002). Although the application area is located within the known range of this species, the application area is mostly cleared, with 0.57 hectares of vegetation remaining. Based on the photographs of the application area (see Appendix F), the application area lacks deep leaf litter and is unlikely to provide microhabitat requirements for this species.

Of the mammalian vertebrate fauna, three are ground-dwelling and two are primarily arboreal. Chuditch and South-west brush-tailed phascogale are Dasyurids that are wide-ranging with large home ranges. These species require large areas of habitat such as the nearby Walpole-Nornalup National Park. The Chuditch typically dens at ground level in hollow logs or rocky areas, while the phascogale requires hollows within trees (van Dyck and Strahan, 2008). The mainland Quokka typically occurs in dense vegetation such as swamp habitat or riparian habitats with a sedge dominated understorey, as well as incised gullies and dense coastal heath (DEC, 2013; de Tores et al., 2007). Quenda, too, require a dense understorey for cover (van Dyck and Strahan, 2008) that may also include non-native species. In the south coast zone, Western ringtail possum occurs in a diverse range of vegetation types, but principally in near-coastal limestone heath, jarrah marri thicket woodland and forest, riparian, peppermint woodland and karri forest vegetation (DBCA, 2017).

The specific habitat attributes within the application area for the abovementioned mammalian species are not present. The proposed clearing within the application area of 0.57 hectares is relatively small, and is surrounded by cleared pasture to the west, and an existing fence to the east. Intact understorey vegetation is lacking within the application area, and it does not form part of any significant ecological linkage. The proposed clearing is unlikely to remove core habitat for the mammalian species identified, or reduce their capacity to disperse across the landscape. The application area is connected to larger remnants that is contiguous with Walpole-Nornalup National Park, apart from some minor barriers including fencing and access tracks. There is a minor risk of mammals of conservation significance being present at the time of clearing. Slow and directional clearing toward adjacent native vegetation would allow any fauna present to retreat into adjacent vegetation ahead of the clearing activity and minimise impacts to individuals.

Of the avian fauna species of conservation significance identified, the application area is within the modelled distribution of all three black cockatoo species. Black cockatoo habitat can be considered in terms of breeding habitat, night roosting habitat, and foraging habitat. Black cockatoos will generally forage up to 12 kilometres from an active breeding site (Commonwealth of Australia, 2017; DPaW, 2013; DSEWPaC, 2012). Following breeding, they will flock in search of food, usually within 6 kilometres of a night roost (Commonwealth of Australia, 2017; DPaW, 2013; DSEWPaC, 2012) but may range up to 20 kilometres (Commonwealth of Australia, 2017). Black cockatoo night roosts are usually located in the tallest trees of an area, and in close proximity to both a food supply and surface water (DAWE, 2020). Flocks will use different night roosts, often for weeks, or until the local food supply is exhausted. Flocks show some fidelity to night roosts with sites used in most years to access high-quality feeding sites. However, not all night roosts are used in every year (DPaW, 2013). Food resources within the range of breeding sites and roost sites are important to sustain populations, and foraging resources are therefore viewed in the context of known breeding and night roosting sites, particularly within 12 kilometres of an impact area (Commonwealth of Australia, 2017).

No black cockatoo breeding or roosting sites have been recorded with 24 kilometres of the application area. The local area (10 kilometre radius from the perimeter of the application area) retains approximately 71 per cent native vegetation cover. Of this, approximately 12,788 hectares (77 per cent) occurs in conservation areas, and 50.7 hectares (0.3 per cent) is subject to conservation covenants. Given the size of the clearing in relation to its position in the landscape, and the extent of remnant vegetation remaining within conservation areas in the local area, it is

unlikely that native vegetation within the application area represents an important foraging resource to support known black cockatoo breeding sites or roosts. The proposed clearing is unlikely to impact black cockatoo species at either the local or regional scales.

The application area does not intersect any mapped ecological linkage axis, but it is located within Strategic Zone A of the mapped South Coast Macro Corridor Ecological Linkage. Given the size and location of the application area in consideration of surrounding remnant vegetation, the proposed clearing is unlikely to impact on any local ecological linkages.

Conclusion

Ground-dwelling mammals of conservation significance may occur within the vicinity of the application area, and there is a minor risk that fauna may be present within the application area at the time of clearing. To minimise impact to individuals, slow and directional clearing toward adjacent native vegetation would allow any fauna present to retreat into adjacent vegetation ahead of the clearing activity.

Conditions

To address the above impacts, the requirement to undertake slow, progressive and one directional clearing to allow terrestrial fauna to move into adjacent vegetation ahead of the clearing activity will be imposed on the clearing permit as a condition.

3.2.3. Biological values – Land and water resources - Clearing Principle (g) and (i)

The application area is located in the mapped Hazelvale Subsystem, which is described as narrow sandy plains; slight stream incision. Humus podzols on crests of spurs; Teatree scrub. Yellow duplex soils on valley flanks; Jarrah-Marri low forest. Peaty podzols on minor valley floors; sedges and reeds (Schoknecht et al., 2004). This subsystem has a high risk of wind erosion and phosphorus export.

The proposed clearing may increase the risk of wind erosion. However, the majority of the application area (0.9 hectares of 1.47 hectares) was previously cleared under clearing permit CPS 6187/1 and exists as pasture. The remaining 0.57 hectares occurs in completely degraded to good (Keighery, 1994) condition and lacks a diverse understorey. Any erosion that may occur on site is likely to be localised, and not likely to impact on adjacent environmental values. Requiring the land to be established into pasture within three months of the clearing activity will reduce the impact of wind erosion.

The application area is not located within any water resources, including Public Drinking Water Source Areas, or groundwater or surface water areas proclaimed under the RIWI Act. There are no watercourses or wetlands that intersect the application area. The nearest non-perennial watercourse, tributaries of the Frankland River, are located approximately 65 metres north and 100 metres southwest of the application area. Fenced riparian buffers provide a physical separation from livestock to watercourses, which prevents fouling of waterways and erosion of banks. Fenced buffers may also reduce the chance of direct fertiliser application on watercourses. The applicant has already established a fence on the northern and western side of the application area. This fence separates the pastured area from these watercourses, and prevents inadvertent access by livestock. Maintaining a physical and vegetated buffer to the watercourse will mitigate the risk of phosphorus export.

Conclusion

Based on the assessment above, there is a risk of wind erosion and phosphorus export with the removal of native vegetation. However, if managed appropriately, it is not likely that the proposed clearing would cause appreciable land degradation.

Conditions

To address the above impacts, the requirement to undertake staged clearing, and to maintain the existing fences to the north and west of the application area, will be imposed on the clearing permit as conditions.

3.3. Relevant planning instruments and other matters

The Shire of Denmark (2021) advised DWER that:

- As per comments provided for former Clearing Permit CPS 6187/1, the adjoining vegetation in Lot 30 including the riparian vegetation shall remain fenced in perpetuity to restrict livestock grazing.
- There is no requirement for a Development Application as the total area proposed to be cleared is under the threshold that requires approval under Town Planning Scheme No.3.

The area under application has been previously authorised to be cleared under clearing permit CPS 6187/1 for the purpose of extractive industry. The applicant is re-applying for the same footprint as clearing permit CPS 6187/1, to maintain the cleared area and clear the remaining 0.57 hectares of native vegetation on the eastern side of the application area, for the purpose of establishing pasture. The applicant has surrendered clearing permit CPS 6187/1.

No Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
The applicant provided further information on their consideration of avoidance and minimisation measures (Burnside, 2021b).	See section 3.1.
The applicant provided photographs of the application area (Burnside, 2021c).	Photographs of the application area has been used to gain information on site characteristics (see Appendix C). A subset of photographs supplied by the applicant is provided in Appendix F.

Appendix B. Details of public submissions (2021a; 2021b)

Summary of comments	Consideration of comment
Area under application has already been cleared.	Approximately 0.9 hectares of the application area has been previously cleared. This clearing was undertaken in accordance with clearing permit CPS 6187/1. Clearing permit CPS 6187/1 required the Permit Holder to undertake revegetation and rehabilitation of all cleared areas post-extraction. The applicant now proposes to utilise the post-extraction area to establish and maintain pasture. Noting this, the applicant has reapplied for the same area as granted under clearing permit CPS 6187/1, including the cleared 0.9 hectares plus an additional area to the east. The inclusion of the previously cleared area is to account for clearing that may be required if native vegetation was to regrow in this area. Previously granted clearing permit CPS 6187/1 has been surrendered and is therefore, no longer active.
Likely to have an impact on environmental values of adjacent or nearby areas of vegetation.	Addressed in the assessment of impacts on biological values (see Section 3.2.1 and 3.2.2).
Likely to cause deterioration in quality of surface water.	Addressed in the assessment of impacts on land and water resources (see Section 3.2.3).
May contribute to further land degradation.	Addressed in the assessment of impacts on land and water resources (see Section 3.2.3).
No environmental surveys undertaken over the application area.	DWER conducted a desktop assessment to identify conservation significant flora, fauna and communities, that have been recorded within the local area. In considering the potential for any of these species to be present within the application area, DWER has had regard to the habitat preferences of these species, including topography, soil and vegetation type, as well as the site characteristics. Based on the desktop assessment, it was determined that the likelihood of the identified conservation significant species to occur within the application area is low (see Appendix C). Taking a risk-based approach, DWER considers that the additional information supplied by the applicant (see Appendix F), is adequate to determine the potential impact of the proposed clearing.

Summary of comments	Consideration of comment
No avoidance or minimisation options considered.	Approximately 0.9 hectares of the application area has previously been cleared, and 0.57 hectares remains vegetated. The applicant has provided mitigation measures to minimise the impact of the proposed clearing on surrounding vegetation. The Delegated Officer was satisfied that the applicant has undertaken reasonable measures to manage the impact of the proposed clearing on environmental values (see section 3.1).

Appendix C. Site characteristics

C.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of an expansive tract of native vegetation in the intensive land use zone of Western Australia. It is surrounded by pasture to the west and south, with a small patch of remnant vegetation to the north, and a larger remnant that is contiguous with Walpole-Nornalup National Park to the east.</p> <p>Spatial data indicates the local area (10-kilometre radius from the perimeter of the application area) retains approximately 71 per cent of the original native vegetation cover.</p>
Ecological linkage	The application area does not intersect any mapped ecological linkage axis, but it is located within Strategic Zone A of the mapped South Coast Macro Corridor Ecological Linkage.
Conservation areas	The application area does not intersect any conservation areas. The local area contains 82 records of land under DBCA tenure, including the Walpole-Nornalup National Park, which surrounds the property where the clearing is located. The Walpole-Nornalup National Park is located approximately 570 metres south, 1.5 kilometre east, and 1 kilometre north of the application area.
Vegetation description	<p>The vegetation within the eastern portion of the proposed clearing area consists of <i>Eucalyptus marginata</i>, <i>Kunzea</i> spp., <i>Taxandra</i> spp., <i>Eutaxia</i> spp. and <i>Allocasaurina</i> spp. with a sparse understorey of sedges and introduced grasses.</p> <p>Due to the disturbed nature of the understorey, the vegetation proposed to be cleared is no longer considered to be consistent with the broad-scale mapped vegetation type (Mattiske and Havel, 1998):</p> <ul style="list-style-type: none"> Hazelvale, which is described as a mosaic of low woodland to woodland of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> – <i>Eucalyptus patens</i>, low forest of <i>Agonis juniperina</i> – <i>Callistachys lanceolate</i> with closed health of <i>Myrtaceae</i> spp. on sandy plains in the hyperhumid zone. <p>Approximately 0.9 hectares of the application area has been previously cleared under clearing permit CPS 6187/1 and is now comprised almost entirely of pasture.</p>
Vegetation condition	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in completely degraded to good (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> Good: vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. 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. 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.

Characteristic	Details												
	The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photographs are available in Appendix F.												
Climate	The mean annual rainfall for the application area is 999.8 millimetres. The annual area actual evapotranspiration for the application area is 800 millimetres.												
Topography	The topography of the application area ranges from 25 -30 metre AHD.												
Soil description	The soil is mapped as Hazelvale Subsystem described as narrow sandy plains; slight stream incision. Humus podzols on crests of spurs; Teatree scrub. Yellow duplex soils on valley flanks; Jarrah-Marri low forest. Peaty podzols on minor valley floors; sedges and reeds (Schoknecht et al., 2004).												
Land degradation risk	Land degradation risk ratings: <table border="1" data-bbox="469 585 1432 911"> <thead> <tr> <th>Aspect</th> <th>Mapped risk</th> </tr> </thead> <tbody> <tr> <td>Water Erosion</td> <td>10-30% of the map unit has a high to extreme risk</td> </tr> <tr> <td>Wind Erosion</td> <td>50-70% of map unit has a high to extreme risk</td> </tr> <tr> <td>Waterlogging</td> <td>30-50% of the map unit has a moderate to very high risk</td> </tr> <tr> <td>Phosphorus Export</td> <td>50-70% of the map unit has a high to extreme risk</td> </tr> <tr> <td>Flood Risk</td> <td>10-30% of the map unit has a moderate to high risk</td> </tr> </tbody> </table>	Aspect	Mapped risk	Water Erosion	10-30% of the map unit has a high to extreme risk	Wind Erosion	50-70% of map unit has a high to extreme risk	Waterlogging	30-50% of the map unit has a moderate to very high risk	Phosphorus Export	50-70% of the map unit has a high to extreme risk	Flood Risk	10-30% of the map unit has a moderate to high risk
Aspect	Mapped risk												
Water Erosion	10-30% of the map unit has a high to extreme risk												
Wind Erosion	50-70% of map unit has a high to extreme risk												
Waterlogging	30-50% of the map unit has a moderate to very high risk												
Phosphorus Export	50-70% of the map unit has a high to extreme risk												
Flood Risk	10-30% of the map unit has a moderate to high risk												
Waterbodies	No watercourses or wetlands are intersected by the application area. Two non-perennial tributaries of the Frankland River are located approximately 65 metres north and 100 metres southwest of the application area. An area that is mapped as being subject to inundation is located approximately 330 metres northwest of the application area.												
Hydrogeography	The application area does not intersect and Public Drinking Water Source Areas and is not located within any groundwater or surface water areas proclaimed under the RIWI Act.												
Flora	According to available databases, 36 flora taxa of conservation significance have been recorded within the local area. Based on the proximity of previous records, the soil type and the broad-scale vegetation type mapped within the application area, six taxa required further consideration (see Appendix C.3).												
Ecological communities	There are no conservation significant ecological communities mapped within the application area. The local area contains two mapped priority ecological communities, the Subtropical and Temperate Coastal Saltmarsh ecological community (P3) located approximately 7.9 kilometres east of the application area, and the <i>Reedia spathacea - Empodisma gracillimum – Sporadanthus rivularis</i> dominated floodplains and paluslopes of the Blackwood Plateau ecological community (P1) located approximately 8.7 kilometres northwest of the application area.												
Fauna	According to available databases, 43 species of conservation significance have been recorded within the local area. Excluding marine, aquatic and coastal species, and considering the presence of suitable habitat and proximity of previous records, nine species of conservation significance required further consideration (see Appendix C.4).												

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*					
Warren	833,985.56	659,432.21	79.07	558,485.38	66.97
Vegetation complex**					
Hazelvale	7,276.42	2,982.39	40.99	1,089.06	14.97
Local area					
10 kilometre radius	-	~ 16,536.6	~ 71	-	-

*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 H.1), and photographs, impacts to the following conservation significant flora required further consideration.

Taxon	Conservation code	Suitable soil type?	Suitable vegetation type?	Distance of closest record to application area (m)	Number of known records (local area)
<i>Acacia euthyphylla</i>	P3			3,598	1
<i>Actinotus repens</i>	P3			9,956	1
<i>Adelphacme minima</i>	P3			3,062	2
<i>Alexgeorgea ganopoda</i>	P3	Yes	Yes	3,565	4
<i>Amanita kalamundae</i>	P3			4,898	2
<i>Amanita walpolei</i>	P2			6,557	1
<i>Andersonia auriculata</i>	P3	Yes	Yes	297	32
<i>Andersonia redolens</i>	P2			9,062	1
<i>Andersonia</i> sp. Amabile (N. Gibson & M. Lyons 355)	P3			8,171	1
<i>Anthocercis sylvicola</i>	P3			4,228	2
<i>Banksia serra</i>	P4			3,640	1
<i>Banksia sessilis</i> var. <i>cordata</i>	P4			3,522	6
<i>Banksia verticillata</i>	T			9,472	1
<i>Boronia virgata</i>	P4	Yes	Yes	2,715	4
<i>Caladenia abbreviata</i>	P3			7,303	1
<i>Caladenia applanata</i> subsp. <i>erubescens</i>	P2			6,594	1
<i>Caladenia evanescens</i>	P1			6,594	1
<i>Calymperastrum latifolium</i>	P2			9,468	1
<i>Chamaexeros longicaulis</i>	P2			4,706	1
<i>Cyathochaeta stipoides</i>	P3			3,038	2
<i>Drakaea micrantha</i>	T	Yes	Yes	4,966	2
<i>Drosera binata</i>	P2	Yes	Yes	549	2
<i>Drosera binata</i>	P2			833	2

<i>Eucalyptus brevistylis</i>	P4			6,145	15
<i>Gahnia sclerioides</i>	P4			3,844	5
<i>Juncus meianthus</i>	P3			3,101	3
<i>Lasiopetalum</i> sp. Denmark (B.G. Hammersley 2012)	P3			3,251	1
<i>Leptinella drummondii</i>	P3			7,689	1
<i>Microtis pulchella</i>	P4			1,285	2
<i>Pleurophascum occidentale</i>	P4			1,364	5
<i>Reedia spathacea</i>	T			8,878	1
<i>Schizaea rupestris</i>	P2			9,836	1
<i>Sphagnum novozelandicum</i>	P2			9,956	1
<i>Stylidium leeuwinense</i>	P4	Yes	Yes	408	16
<i>Thomasia quercifolia</i>	P4			4,810	1
<i>Xanthosia eichleri</i>	P4			6,153	1

T: threatened, P: priority

C.4. Fauna analysis table

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

Species name	Conservation status	Suitable habitat features?	Distance of closest record to application area (km)	Number of known records (local area)
Forest red-tailed black cockatoo (<i>Calyptorhynchus banksii naso</i>)	VU	Yes	9.68	1
Baudin's cockatoo (<i>Calyptorhynchus baudinii</i>)	EN	Yes	1.13	34*
Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>)	EN	Yes	3.02	9*
Western Australian pill millipede (<i>Cynotelopus notabilis</i>)	EN	Yes	1.52	5
Chuditch (<i>Dasyurus geoffroii</i>)	VU	Yes	6.33	1
Quenda (<i>Isoodon fusciventer</i>)	P4	Yes	3.47	13
South-western brush-tailed phascogale (<i>Phascogale tapoatafa wambenger</i>)	CD	Yes	0.86	23
Western ringtail possum (<i>Pseudocheirus occidentalis</i>)	CR	Yes	5.40	2
Quokka (<i>Setonix brachyurus</i>)	VU	Yes	0.41	29

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

*In addition, there are 19 records of *Calyptorhynchus* spp. in the local area. These records can be either Carnaby's cockatoo, Baudin's cockatoo, or species unknown.

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> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The application area is unlikely to comprise a high level of biological diversity, as it is unlikely to include habitat that is significant for the continued existence of any threatened or priority flora, or provide significant fauna habitat, or form a fauna linkage. The vegetation proposed to be cleared does not represent any threatened or priority ecological communities.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1, 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></p> <p>Based on the presence of suitable habitat and the proximity of previous fauna records, the application area may provide habitat for nine conservation significant fauna species. However, it is unlikely that the vegetation proposed to be cleared will provide significant habitat. Within the application area of 1.47 hectares, only 0.57 hectares remains vegetated and the remaining 0.9 hectares is cleared. The proposed clearing is relatively small in extent, and is adjacent to existing pasture to the west, and a fence that physically separates the application area to large, intact remnant vegetation to the east. The application area does not form part of any ecological linkages within the local area.</p> <p>The applicant will be required to undertake fauna management measures to minimise direct impacts to these species should they occur on site during clearing.</p>	Not likely to be at variance	Yes Refer to Section 3.2.2, 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></p> <p>The soil mapped within the application area is similar to soil types where <i>Drakaea micrantha</i> (threatened) has previously been recorded within the local area. However, the vegetation structure of the application area is unlikely to support habitat that is suitable for this species.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1, above.
<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></p> <p>The local area does not contain any records of threatened ecological communities listed under the BC Act. 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></p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The local area retains approximately 71 per cent remnant vegetation, and the mapped broad-scale vegetation complex and Warren IBRA bioregion retains 40.99 and 79.07 per cent of their pre-European extent of native vegetation, respectively. This is consistent with the national objectives and targets for biodiversity conservation in Australia.</p> <p>Given the extent of intact remnant vegetation in the local area and that the application area is not part of a significant ecological linkage.</p>		
<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>The nearest conservation area is the Walpole-Nornalup National Park, which is located approximately 570 metres from the application area. It is separated from the application area by areas of pasture and remnant vegetation. Noting this distance, the proposed clearing is not likely to have an impact on the environmental values of any nearby conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given no watercourses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality. The vegetation proposed to be cleared is not contiguous with vegetation growing in association with any watercourses.</p> <p>The application area is separated from riparian vegetation occurring to the north-east by an existing fence, to ensure that livestock grazing does not inadvertently impact on any vegetation growing in associated with a watercourse or wetland.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are highly susceptible to wind erosion and phosphorus export. Noting the extent of the application area and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on land degradation with adequate management measures.</p>	May be at variance	Yes Refer to Section 3.2.3, above.
<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>No Public Drinking Water Source Areas or groundwater or surface water areas proclaimed under the RIWI Act are recorded within 10 kilometres of the application area.</p> <p>Non-perennial tributaries of the Frankland River are mapped within 75 and 150 metres from the application area. One tributary is located downslope of the proposed clearing area. However, given that there is vegetation remaining upslope between the mapped tributary and application area, the proposed clearing is unlikely to impact hydrology of this tributary, or deteriorate the quality of water.</p>	Not likely to be at variance	Yes Refer to Section 3.2.3, above.

Assessment against the clearing principles	Variance level	Is further consideration required?
<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></p> <p>The mapped soil type has moderate flood risk. However, given the proximity to non-perennial tributaries of the Frankland River, and that the majority of the application area is already cleared, it is unlikely the proposed clearing will contribute to waterlogging or exacerbate the incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix E. Vegetation condition rating scale

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

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

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

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

Appendix F. Photographs of the vegetation (Burnside, 2021c)

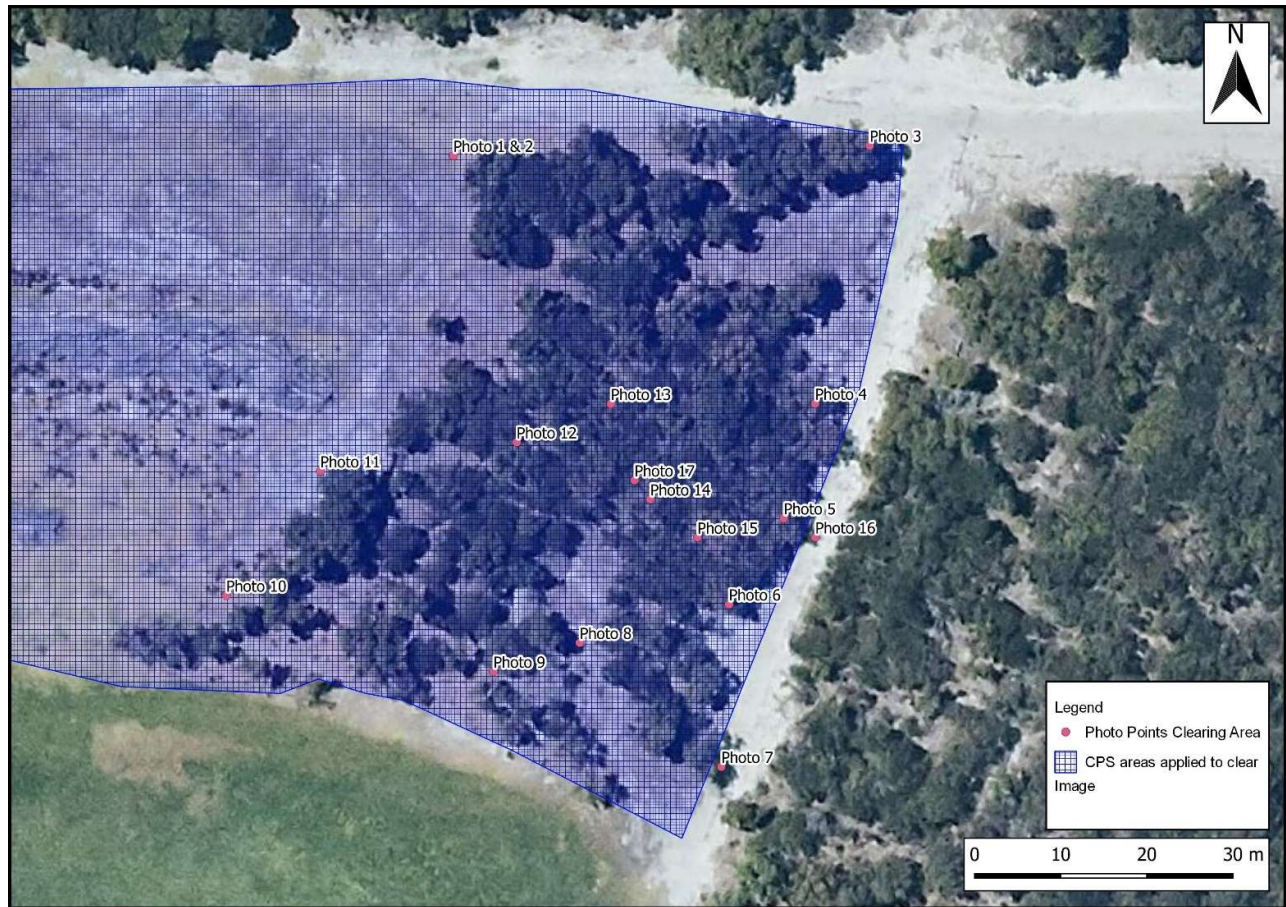


Figure 3. Photo points (Burnside, 2021c).



Photo point 2



Photo point 3



Photo point 6



Photo point 7 (facing northwest)



Photo point 9



Photo point 10 (facing northeast)



Photo point 11 (facing east)



Photo point 16 (facing east -
remnant vegetation, outside the
application area)



Photo point 17



Figure 4. Photograph of previously cleared area under clearing permit CPS 6187/1 (Burnside, 2021c).

Appendix H. Sources of information

H.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 (DPIR-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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