Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9386/1
Permit type:	Area permit
Applicant name:	Yeagarup Farm Pty Ltd as Trustee for Hawke Property Trust
Application received:	9 August 2021
Application area:	20.62 hectares of native vegetation
Purpose of clearing:	Horticulture planting
Method of clearing:	Mechanical
Property:	Lots 8183 and 8185 on Deposited Plan 201591
Location (LGA area/s):	Shire of Manjimup
Localities (suburb/s):	Yeagarup

1.2. Description of clearing activities

The application is to remove six patches of native vegetation spread over the two Lots for the purpose of horticultural planting, particularly for the farming of avocados and truffle. Parts of the vegetation proposed to be cleared are riparian vegetation growing immediately adjacent to two streams rising from within the properties. It has been assessed that the proposed horticulture activities would require additional water supply and that the two streams were planned to be dammed to support the proposed farm.

The original application footprint was 21.67 hectares in size. The application area was revised to 20.62 hectares during the assessment process in response to advice from Department of Primary Industries and Regional Development (DPIRD) to the applicant.

1.3. Decision on application

Decision:	Refused
Decision date:	5 February 2024
Decision area:	20.62 hectares (ha) 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 three (3) submissions were received. Consideration of matters raised in the public submissions is summarised in Appendix A.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix C), relevant datasets (see Appendix H.1), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). In particular, the Delegated Officer considered the following:

- Photographs of the vegetation, provided by the applicant, indicates that vegetation within the application area is likely to comprise of tree species preferred by the Carnaby's (*Zanda latirostris*, Endangered), Baudin's (*Zanda Baudini*, Endangered) and Forest Red-Tailed (FRTBC- *Calyptorhynchus banksia naso*, Vulnerable) black cockatoo for foraging and / or breeding, including Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla),* Karri *(Eucalyptus diversicolor)* and *Allocasuarina sp* (sheoak). The photographs also indicate that some of the tall trees are likely to have Diameter at Breast Height (DBH) larger than 500 mm which could have developed or will develop hollows suitable for black cockatoo breeding. A part of the application area appears to comprise predominantly of the Peppermint tree (*Agonis flexuosa)*, a preferred habitat species for the Western Ringtail Possum (WRP). The vegetation within the application area may also contain suitable habitat for the Quokka. A fauna and black cockatoo survey was requested to inform the assessment of impacts of clearing on fauna habitat. The required survey has not provided. In the absence of the survey, a risk-based assessment was undertaken based on available information. The Delegated Officer determined that the removal of 20.62 ha of vegetation, most likely to be in 'Very Good' to 'Excellent' condition (Keighery, 1974), is likely to significantly impact on the habitat for all three Threatened black cockatoo species. The Delegated Officer also determined that the extent of impacts to WRP and Quokka remained unclear and that in the face of this the precautionary principle should be applied.
- The application area is located on the Lower Warren and the Treen Brook Water sub-areas which are proclaimed under the Rights in Water and Irrigation Act 1914 (RIWI Act). Water supply on the sub-areas has either been exhausted or is limited to be allocated for licencing. It has been assessed that the proposed horticultural activity would require additional water supply and a permit and licence under the RIWI Act is required.. Further information on compliance with obligations under the RIWI Act pursuant to the efforts to avoid and mitigate impacts of the proposed clearing on the water resources were requested of the applicant. The information has not been provided. Consequently, in the absence of the information, the Delegated Officer has determined that impacts of the proposed clearing on the water resources is potentially significant.
- Clearing may impact on the local population and conservation status of conservation significant aquatic fauna species including the Pouched Lamprey (*Geotria australis*) (P3) and Carter's freshwater mussel (*Westralunio carteri*) (VU). Assessment of impacts on the fauna species required specific information regarding the extent of water abstraction and interference of the streams pertinent to the required permit and licences under the RIWI Act mentioned above. The Delegated Officer determined that the extent of impacts on the aquatic fauna species remained unclear and therefore the precautionary principle has been applied.
- Conservation significant flora species, including two Threatened species (*Caladenia harringtoniae* and *Commersonia apella*) are known to occur in the local area. The application area exhibits soil and vegetation characteristics preferred by these flora species. Clearing may potentially remove the conservation significant flora species and represent a significant impact on the conservation of the species. A flora and vegetation survey over the application area was requested to inform the assessment. The required information has not been provided. The Delegated Officer has determined that the impact of the proposed clearing on the maintenance and conservation of the conservation significant flora species is likely significant.
- Clearing may exacerbate the risk of sedimentation, nutrient export, and wind erosion downstream of the application area. Given the plan to dam the streams, DPRID advised that these impacts are considered unlikely to lead to appreciable land degradation. If granted, clearing in dry conditions and outside of the high flow period would have been required as a condition to the permit to mitigate this impact.
- Clearing may introduce weeds and dieback to the adjacent Warren National Park. A stringent weed and dieback management condition would have been imposed to mitigate this impact.

After consideration of the available information, the Delegated Officer determined the proposed clearing is likely to have long-term adverse impacts on conservation significant flora and fauna species, biodiversity, and surface water availability. In the absence of the required permit and licence under the RIWI Act and the impacts of the proposed clearing listed above, it is considered that the impacts of the proposed clearing cannot be minimised and managed and will lead to an unacceptable risk to the environment. The Delegated Officer has decided to refuse to grant a clearing permit.

1.5. Site map

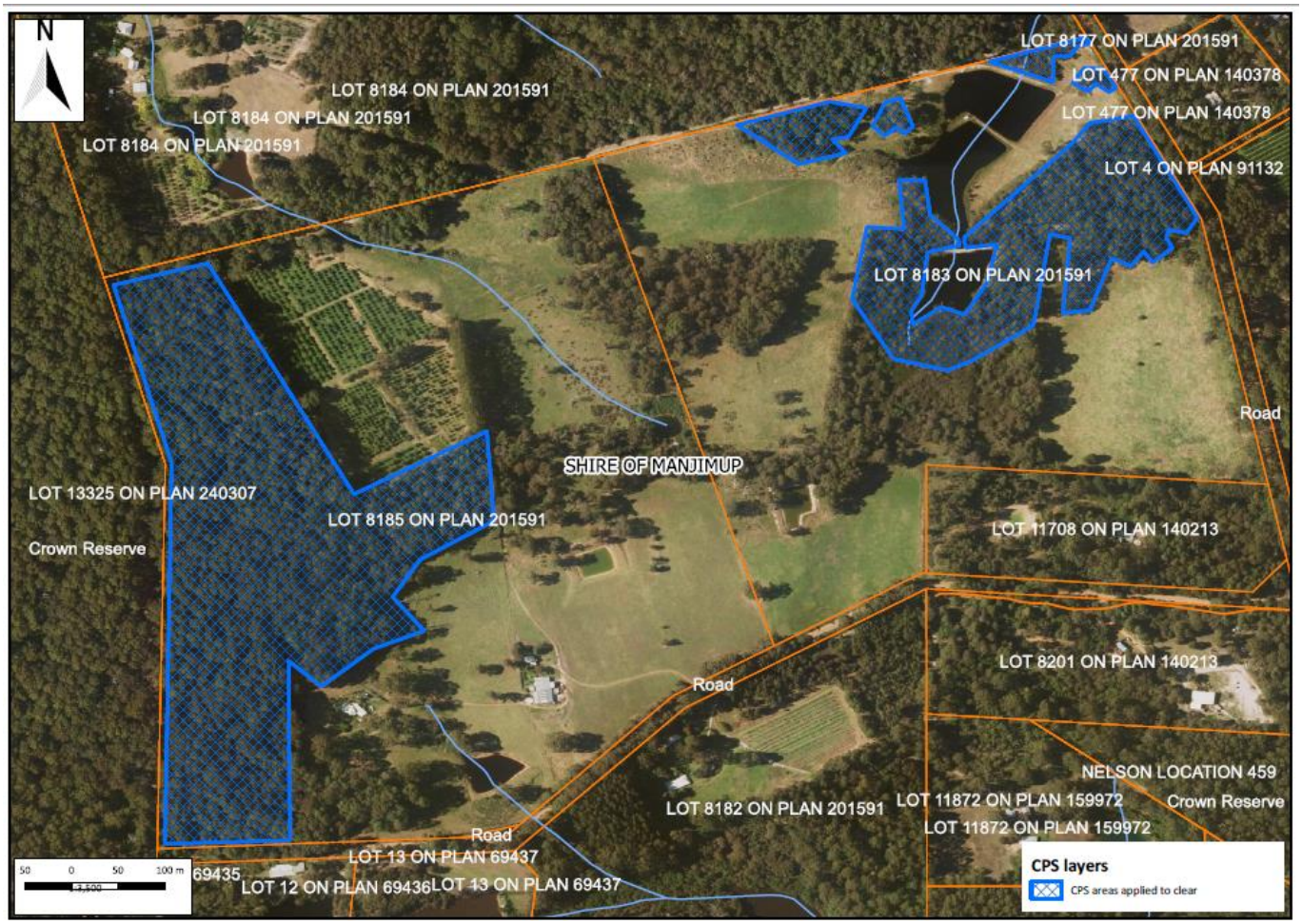


Figure 1 Map of the application areas

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 the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011) *(Delete if offsets not considered)*

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)
- *Environmental Offsets Guidelines* (August 2014)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

During assessment, the applicant was requested to considers options to reduce and avoid clearing. The applicant submitted an explanation to demonstrate the reasons why the proposed clearing was required. However, this did not adequately demonstrate that all reasonable efforts had been taken to avoid and minimise potential impacts of the proposed clearing on environmental values.

Upon receiving advice from DPRID, the application area was reduced to 20.62 hectares from the original application area size of 21.67 hectares. No further evidence of avoidance or mitigation measures was provided to support the application.

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 **Error! Reference source not found.**) identified that the impacts of the proposed clearing present a risk to biodiversity, Threatened flora and fauna species and surface water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Fauna – Clearing Principle (b)

Assessment:

A review of the available databases from the local area (10 km radius) indicates previous records from twenty conservation significant fauna species, as listed under the state *Biodiversity Conservation Act 2016* (BC Act), commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or as Priority species by the Department of Biodiversity, Conservation and Attractions (DBCA) in the state context (DBCA, 2007-).

Of those, two species were listed as extinct and not considered for the purposes of the assessment. Three species were listed as Critically Endangered (CR), three Endangered (EN), three Vulnerable (VU), two Conservation Dependent (CD), two Priority 2, two Priority 3, three Priority 4 and one Migratory species protected under International Agreement (IA) (DBCA, 2007-).

Based on fauna habitat preferences and the habitat currently present in the vegetation applied to be cleared, the application area provides suitable habitat for several conservation significant fauna species. A targeted fauna survey over the application area to identify the presence of these fauna species and / or suitable habitats was requested. The required information has not been provided by the applicant. In the absence of the required information, the assessment has been caried out based on available information and by applying the precautionary principle.

Black cockatoos

Carnaby's cockatoo and Baudin's cockatoo are listed as Endangered and Forest Red-Tailed (FRTBC) black cockatoo is listed as Vulnerable under the BC Act. All three have the same listing categories under the Commonwealth *EPBC Act.* Black cockatoos nest in hollows in live or dead trees of Karri, Marri, Wandoo, Tuart, Salmon Gum, Jarrah, Flooded Gum, York Gum, Powder Bark, Bullich and Blackbutt (DotEE, 2017). Breeding habitat or 'habitat tree' is defined in the EPBC Act referral guidelines as 'trees of species known to support breeding within the range of the species which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow' (DotEE, 2017). The application area is within the modelled distribution range for Baudin's, the Carnaby's and the FRTBC's (DotEE, 2017). FRTBC breed all year round, in areas they are known to occur, and therefore, the application area is within the modelled breeding range for FRTBC.

Impacts on 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 (DSEWPaC 2012; DPaW 2013). Following breeding, they will flock in search of food, usually within six kilometres of a night roost (DSEWPaC 2012; DPaW 2013) 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 (Commonwealth of Australia 2017). 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).

Carnaby's black cockatoos have preference for feeding habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceous plant species such as *Banksia* sp., *Hakea* sp. And *Grevillea* sp., also insects and insect larvae; pith of kangaroo paw (*Anigozanthos flavidus*); juice of ripe persimmons; tips of *Pinus* spp. and seeds of apples and pears (DotEE, 2017). Forest red-tailed black cockatoo's have preference for seeds of jarrah and marri in woodlands and forest, and edges of karri forests, including wandoo and blackbutt, *Eucalyptus caesia*, *E. erythrocorys*, *Allocasuarina* cones, fruits of snottygobble (*Persoonia longifolia*) and mountain marri (*Corymbia haematoxylon*), and some introduced eucalypts such as river red gum (*E. camaldulensis*) and flooded or rose gum (*E. grandis*) (DotEE, 2017). Baudin's black cockatoo prefer native shrubland, kwongan heathland and woodland on seeds, flowers and nectar of native proteaceous plant species (*Banksia* spp., *Hakea* spp., *Dryandra* spp., and *Grevillea* spp.), as well as *Callistemon* spp. and marri. Also seeds of introduced species including *Pinus* spp., *Erodium* spp., wild radish, canola, almonds and pecan nuts; insects and insect larvae; occasionally flesh and juice of apples and persimmons (DotEE, 2017).

Within the local context, a review of the available databases indicates the applied clearing area is not within 12 km of any known or mapped black cockatoo breeding or roost sites. The nearest confirmed breeding site is located approximately 18 km northwest of the application area within the Warren National Park. The nearest roost is located 18.6 km southeast of the application area. The local area indicates a total of 64 previous records of black cockatoo species, the closest located 950 metres away, recorded in 2015. However, the vegetation within the application area is likely to contain Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla), K*arri *(Eucalyptus diversicolor)* and Allocasuarina sp. in abundance. These species are known as the preferred species for foraging and nesting by black cockatoo species. Many of the trees appear to have a DBH of greater than 500 mm which potentially have hollows or yet to develop hollows suitable for nesting for the black cockatoo species. In addition, the application area is surrounded by freshwater sources. This indicates that the trees within the application area have the potential to offer breeding, roosting and foraging resources for black cockatoos in the area.

The Recovery Plans for all three Threatened Black cockatoo species noted that major contributor to declines in populations of black cockatoos is the loss of breeding habitat, containing suitable breeding hollows, in proximity to sufficient foraging habitat (DotEE, 2017). Consequently, the loss of trees with hollows or potential to develop hollows and foraging values such as those available in the application area can be considered significant. Removal of the habitat trees is likely to have significant impact on the viability of Black cockatoo's breeding and foraging in the local area.

Given the lack of fauna habitat assessment, the extent of suitable habitat within the application area for black cockatoo species cannot be confirmed.

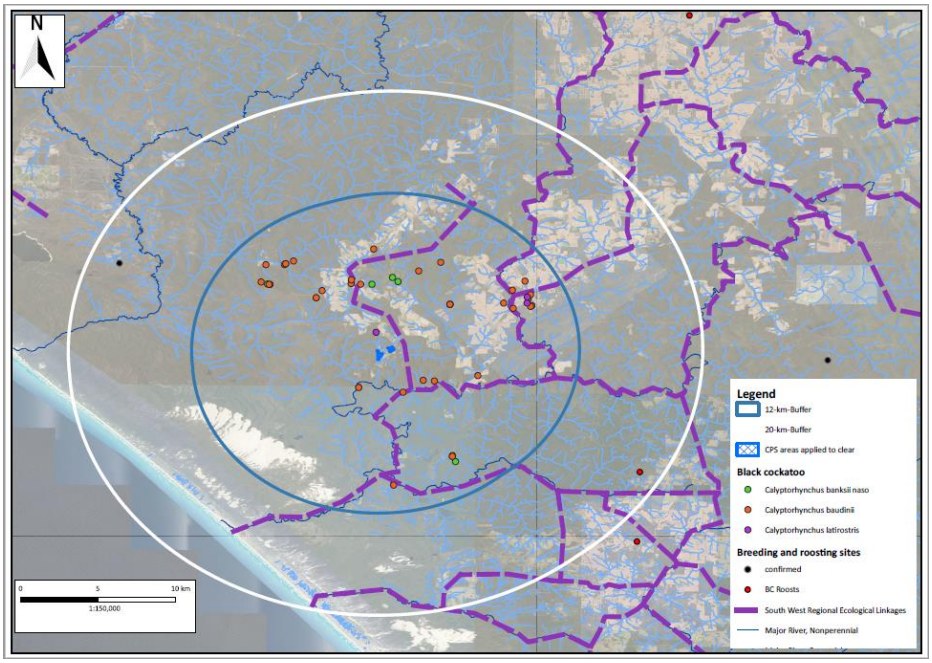


Figure 2. Records of three Threatened Black cockatoo species' occurrence, breeding and roosting sites in the local area surrounding the application area.

Western Ringtail Possum

The *Western Ringtail Possum (Pseudocheirus occidentalis) Recovery Plan* outlines strategies to slow the decline in population size, extent and area of occupancy through managing major threatening processes affecting the subpopulations and their habitats and allowing the persistence of the species in each of the identified key

management zones: Swan Coastal Plain, southern forests and south coast (DPaW, 2017). The application area is contained within the southern forests management zone and is surrounded by streams.

Peppermint trees (*Agonis flexuosa*) are important habitat for Western Ringtail Possums (WRP's), listed as Critically Endangered under the *Biodiversity Conservation Act 2016* (BC Act). Populations in the southern forest management zone occur mainly in jarrah or marri dominated forests, in adjacent stands of riparian vegetation often with an overstorey of flooded gum (*Eucalyptus rudis*) and extending to wandoo (*Eucalyptus wandoo*) forests to the north-east of Manjimup and karri (*Eucalyptus diversicolor*) forests from Northcliffe to west of Manjimup (DEC 2012c). Any habitat where western ringtail possums occur naturally are considered critical and worthy of protection (DPAW, 2017). Habitat critical to survival comprises forests with limited anthropogenic disturbance (unlogged or lightly logged, and a low intensity and low frequency fire history), that are intensively fox-baited and have low indices of fragmentation (Wayne et al. 2005a, Wayne et al. 2006).

The local area indicates a total of 13 previous recordings, with the closest located 1 km southeast of the application area within the Warren National Park. The most recent recording was identified in 2004 indicating no individuals have been recorded in recent years. Given the application area likely to contain *Agonis flexuosa*, jarrah, karri and marri, abundant large trees with potential hollows within close proximity to water sources, the application area is likely to contain suitable habitat for *P. occidentalis.* The proposed clearing of the vegetation is considered to have a significant impact on WRPs unless proper management measures are in place to mitigate the potential impact of clearing on the viability of the fauna species in the local context.

Quokka (Mainland)

The quokka (*Setonix brachyurus*) is a small wallaby listed as Vulnerable under both state and commonwealth legislation, and is the only species belonging to the genus *Setonix*. Historically, the quokka was widespread and abundant across the south-west of Western Australia. By the early 1990s the quokka's distribution on the mainland had been reduced by more than 50%. The species is best known from Rottnest Island, where it is still abundant, but it also continues to exist on Bald Island and in parts of its former range on the mainland, where it is found in isolated patches of the northern Jarrah forest, on the Swan Coastal Plain, the southern Jarrah, Marri and Karri forests and on reserves on the south coast (DBCA, 2020). Known as habitat specialist, in the south of its range quokkas are strongly linked to complex vegetation structure (minimum of three layers), low densities of woody debris and habitat patchiness (Bain et al. 2015). The most common Quokka habitat in the southern forest comprises jarrah (*E. marginata),* marri (*C. calophylla*), karri (*E. diversicolor*) or tingle (*E. jacksonii* or *E. guilfoylei*) forest and riparian habitats with a sedge dominated understorey (DEC, 2013). The quokka also has relatively high water requirements, which necessitates close proximity to fresh water throughout the year, hence, the species is often present in riparian and swamp habitat (Hayward et al. 2005). The local area indicates 29 previous recordings, the closest located 3.1 km away and the most recent recording was made in 2019 from approximately 6 km away within the National Park.

Assessment of the photographs of the vegetation provided by the applicant indicates that the understory across the majority of the site is in Very Good to Excellent (Keighery, 1994) condition with a mix of dense and open areas in close proximity to a freshwater source. Given the application area is adjacent to water source, with a mixed density understory in good or better condition, much of the application area may contain suitable habitat for this species. A fauna survey over the area was requested, however it was not provided to the Department. In the absence of the required information, a proper assessment of impacts of the proposed clearing on quokka and any mitigating conditions that would provide protection of the fauna species and ameliorate the impacts was unable to be carried out. Given the circumstances, the precautionary principle has been applied, and it is determined that the proposed clearing posed a significant risk to the species and conservation value of quokka within the local context.

Other Conservation Significant fauna

The south-western brush tailed phascogale (*Phascogale tapoatafa wambenger*) is a small arboreal dasyurid with a home range between 20 to 70 ha. In south west Western Australia, it is often observed in dry sclerophyll forests and open woodlands that contain hollow bearing trees. Habitat clearing, fragmentation, and alteration by logging and mining are the greatest threats to this species (DEC, 2012b). With the reduced availability of trees with hollows, a subsequent increase in susceptibility to predation by foxes and cats is seen for this species. Residual habitat is often fragmented, thereby isolating populations and impeding genetic exchange (DBCA, 2012). The application area may contain suitable habitat including hollow bearing trees and a sparse understory in some areas. The local area indicates 11 previous recordings, with the closest located 5.78 km, recorded in 2018. Given the above, the vegetation applied to clear may contain suitable habitat for the species but is outside of the home range of the most recent record. It has been assessed that proposed clearing is unlikely to impact on the maintenance and conservation status of this species.

Isoodon fusciventer or quenda prefers dense scrub (up to one metre high), with swampy vegetation but are found in a variety of other habitats (Menkhorst & Knight, 2011). The species is widely distributed near the south west

coast from north of Geraldton to east of Esperance. Quenda have a patchy distribution throughout the Jarrah and Karri forest, the Swan Coastal Plain, and inland as far as Hyden (DEC, 2012a). They will often feed in adjacent forest and woodland that is burnt on a regular basis, and in areas of open grassland, pasture and crop land lying close to dense cover (DEC, 2012a). Given the broad range of the species and relative abundance throughout, the clearing proposed under this application is unlikely to impact the conservation status of this species.

Muir's corella (*Cacatua pastinator pastinator*) and the masked owl (*Tyto novaehollandiae novaehollandiae*) are both avian species who share nesting habitat requirements with the black cockatoo species mentioned above. Both *C. pastinator pastinator* and *T. novaehollandiae novaehollandiae* indicate 2 historical recordings in the local area, with *C. pastinator pastinator*'s coming from 1995 and 1998, and *T. novaehollandiae novaehollandiae* indicating no dates in the databases. Given the records are > 22 years old, minimal recordings in the local area and the clearing proposes to selectively remove trees, the applied clearing is unlikely to remove habitat that is significant for either species.

Of the fauna species associated with the riparian ecosystems, the *Hydromys chrysogaster* or water rat/rakali (P4), the Pouched Lamprey (*Geotria australis*) (P3) and Carter's freshwater mussel (*Westralunio carteri*) (VU) are the most likely to inhabit the streams within the application area.

Water rat inhabits a great variety of aquatic environments including subalpine streams, low inland rivers, lakes, farm dams, and sheltered marine waters. The species can also occur in streams and estuaries in located in urban cities (DEC, 2012b). The local area contains 19 historical recordings, the closest located 2.96 km away. Given the variety of aquatic environment the water rat can inhabit, the application area is unlikely to provide a significant habitat to the fauna species and that the proposed clearing is not likely to have significant impact on the conservation of the species.

Pouch lamprey is anadromous and enters the freshwater river systems to lay eggs which live buried in sandy stream sediments for years. The juvenile lampreys would migrate to the ocean during high flow periods in winter. Pouch lamprey has been recorded within 5 km downstream of the application area, from within both the Treen Brook and Lower Warren River systems which originate at the property. Given the sandy nature of the soils in the application area and records from the same river systems as that of the application area, the occurrence of the pouch lamprey individuals or eggs and their habitat in the application area cannot be ruled out. However, given the non-perennial nature of the streams and that the application area is located at the beginning of the streams, impacts of clearing on pouch lamprey individuals is not expected to be significant, provided appropriate management conditions are in place.

Fifteen records of Carter's freshwater mussel are known from the local area, with the closest record located within the Treen Brook approximately 2.3 km downstream of the application area. The mussel occurs in greatest abundance in slower flowing waters where sediments are stable and soft enough to allow the species to burrow (<10 cm depth) but are usually visible from the surface; allowing the species to position themselves to best facilitate filter feeding. However, it also occupies lentic systems including large water supply dams and even on-stream farm dams. Given the characteristics of the soils and the streams in the application area, proximity to the records and the occurrence of dams on the property, the application area is likely to contain suitable habitat for the mussel. Noting the plan to construct or enlarge the dams on the property, impact of the proposed clearing on the habitat and species, if any, is not expected to be significant as the dams would provide habitats to the clam, provided more information regarding the fauna occurrence is available and management conditions are enforced to mitigate the impacts.

Outcome: Based on the above assessment, the Delegated Officer has determined that significant impacts are likely to occur for significant fauna species as a result of the clearing, and that in the absence of further clarifying information it is not possible to have confidence that these impacts can be mitigated and managed to an acceptable level.

3.2.2. Biodiversity – Flora – Conservation area - Clearing Principle (a), (c) and (h)

Assessment

Three soil sub-systems and four regional vegetation types, as described by Mattiske and Havel (1998) have been mapped over the application area occupying both 'uplands' (the Crowea complex) and 'valleys' (the Yanmah complex):

- SWF 01: Open forest of *Eucalyptus marginata* subsp. *marginata-Banksia ilicifolia-Nuytsia floribunda with* some *Eucalyptus diversicolor* on gently sloping sandy terrain in hyperhumid and perhumid zones.
- SWF 70: Tall open forest of *Corymbia calophylla* with mixture of *Eucalyptus marginata* subsp. *marginata* and *Eucalyptus diversicolor* on uplands in hyperhumid and perhumid zones.
- SWF 321: Mixture of tall open forest of *Eucalyptus diversicolor* and tall open forest of *Corymbia calophylla-Eucalyptus patens-Eucalyptus marginata* subsp. *marginata* over *Agonis flexuosa* and *Agonis juniperina* on valleys in perhumid and humid zones.
- SWF 68: Tall open forest of *Corymbia calophylla-Eucalyptus diversicolor* on upper slopes with *Allocasuarina decussata-Banksia grandis* on upper slopes in hyperhumid and perhumid zones.

Two flora taxa listed as Threatened under the *Biodiversity Conservation Act 2016* have been identified from the local area *(Caladenia harringtoniae* and *Commersonia apella),* as well as five flora taxa *(Inocybe redolens* [P2], *Rorippa cygnorum* [P2], *Actinotus repens* [P3], *Pultenaea pinifolia* [P3], and *Poa billardierei* [P3]). Two fungi species listed as Priority species have also been recorded.

Given the four regional vegetation types and three separate soil types mapped over the application area, and the similarities shared between flora species of conservation significance and the soil and vegetation types within the application area, there is a reasonable probability that flora species of conservation significance may occur.

A description of the vegetation communities actually occurring over the application, and their condition using the vegetation scale of Keighery (1994) is required to enable an assessment of impact to be undertaken. This cannot be accurately assessed without a flora and vegetation survey. A flora survey is also required to confirm the presence or absence of significant flora taxa known from the local area to inform the assessment of impact of the proposed clearing on the flora species. The Department has requested for a flora and vegetation survey to be carried out over the application area to further inform the assessment. These surveys/assessments were to be conducted by relevant specialists in accordance with the Environmental Protection Authority's (EPA) *Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment (December 2016)* and *Technical Guidance: Terrestrial Fauna Surveys (December 2016)*. The requested information, however, has not been provided.

In the absence of a detailed flora survey, the presence of these flora cannot be ruled out. Clearing may remove these flora species and impact on the conservation values of the flora species at the species, local and regional contexts.

The application area is immediately adjacent to the Warren National Park which is protected for its high level of biodiversity. Clearing may introduce and spread weeds and dieback to the National Park, which subsequently would reduce the quality of its vegetation, biodiversity and conservational values.

Outcome: Based on the above assessment, the Delegated Officer has determined that significant impacts are likely to occur for conservation significant flora species, which in turn would have significant impact on biodiversity at the local and regional context. In the absence of further clarifying information, it is not possible to have confidence that these impacts can be mitigated and managed to an acceptable level.

3.2.3. Riparian Vegetation - Land and water resources – Clearing Principles (f), (g) and (i)

Assessment of available databases and aerial photographs indicate that parts of the vegetation proposed to be cleared are associated with waterways. Consequently, riparian vegetation is likely to comprise parts of these vegetation. Removal of riparian vegetation will impact on the quality of the riparian vegetation and its habitat values at the site as well as downstream. As such, the proposed clearing is likely to be at variance with principle (f). Without information resulted from a flora survey over the application area, the significance of impact of clearing on the riparian vegetation cannot be determined. Given the circumstances, the precautionary principle has been applied to the assessment and it is considered that the proposed clearing is likely to have a significant impact on the riparian vegetation in the application area.

The soils in the area are mapped as prone to nutrient export and erosion. Excess nutrients and sediments from the surrounding farming activities and bare grounds can be transported down the stream by surface water flows. However, given the plan to dam the streams, the Department of Primary Industry and Regional Development has assessed that the potential for eutrophication and sediment transport can be managed to be insignificant.

The clearing is proposed for horticultural purposes, i.e. farming of avocado and truffle. It is considered that the proposed activity would require additional water supply to what is currently available on the property. It is understood that construction of a new dam and / or enlargement of the existing dam is planned after the clearing. The application area lies within the Warren-Donnelly hydrological zone proclaimed under the RIWI Act. Two Water subareas overlain the application area, namely the Lower Warren sub-area which drains into the Lower Warren River, and the Treen Brook subarea which drains into the Treen Brook. The surface water on the Treen Brook has been fully allocated, whilst that of the Lower Warren subarea has limited water available to be allocated. Over utilisation or abstraction of water in these sub-water zones would deplete the quantity and deteriorate the quality of water resources available to the region. The abstraction of water and damming of the streams for the horticultural purposes for which the clearing is required, is therefore likely to be at variance with principles (g) and (i) unless it is formally and appropriately assessed. The water licencing and permitting required and applicable to this area are intended, among others, to assess the impacts of the proposed clearing and activities on the water resources in question. Further information has been requested from the applicant regarding their compliance with obligations under the RIWI Act pursuant to

the efforts to avoid and mitigate impacts of the proposed clearing on the water resources. The requested information, has not been provided. In the absence of such information, it has been determined that the clearing and subsequent activities over the application area are likely to have significant impact on the quality and quantity of the water resources in the local context.

Outcome: Based on the above assessment, the Delegated Officer has determined that significant impacts are likely to occur on the riparian vegetation and water resources as a result of the clearing, and that in the absence of further clarifying information it is not possible to have confidence that these impacts can be mitigated and managed to an acceptable level.

3.3. Relevant planning instruments and other matters

The Shire of Manjimup has provided comment on the application and does not object to the proposed clearing.

The application was advertised on the Department's website for 21 days and 3 public submissions were received. The issues raised in the submissions are detailed in Appendix A.

The application area lies within the *Country Areas Water Supply Act 1947* (CAWS Act) gazetted Warren River Water Reserve. The reserve is not currently a Public Drinking Water Source Area hence no priority source protection has been assigned, nor is it proposed. The reserve has however been subject to CAWS Act native vegetation clearing controls since December 1978 to prevent salinisation of water resources. The Water Source Protection Division of DWER, however, advised that the proportion of vegetation proposed to be cleared within the property is within the threshold set under the CAWS Act, therefore there is no objection under the CAWS Act.

The application area lies within two surface Water sub-areas. Part of the application area at the western side of the property, adjoining the Warren National Park, is in the Lower Warren sub-area, and the eastern part is within the Treen Brook sub-area. Given the purpose of clearing, i.e., horticulture (avocado planting), it has been assessed that water will be required, especially considering the applicant's plan to dam the streams on the property. As such, it has been advised that an S17 permit to interfere with bed and banks and S5C licence to abstract water are required before clearing for the purpose could commence. It has also been also confirmed that 'stream right' exemption may not apply, due to several reasons including the amount of water that would be required for the farm and damming of the stream which is likely higher than the stream yield.

The Department has advised the applicant to apply for and acquire the required water permit and licences. The required permit and licences, however, have not been obtained. Without the approval for the additional water allocation for the purposes, clearing of native vegetation would be unnecessary and harmful for the environment.

No aboriginal sites of significance occur within the application area. It is the applicant's responsibility to ensure they comply with the requirements of the Aboriginal Heritage Act 1972.

End

Appendix A. Information requested of the applicant

Following a preliminary assessment and consultation with relevant agencies, on 17 September 2021 the Department formally requested for further information (RFI) of the applicant. The details of the RFI are below. The applicant did not provide the requested information.

Item	Information requirements	Specifications	Rationale
1.	Demonstration that Yeagarup Farms has the appropriate water allocations for the horticultural land use that has been proposed as the reason why the native vegetation clearing will be required. The stated purpose for the clearing is for is for horticultural plantings, in particular avocados and truffles. Additional water supply may be required by Yeagarup Farms to support the stated purpose. If Yeagarup Farms intends to construct a dam an application for a S17 permit to interfere with bed and banks and S5C licence to take water should be made.	The application area is located within the Warren River catchment of the Warren-Denmark Hydrological Zone, and in the Warren River and Tributaries surface water area (UFI 23) proclaimed under the RIWI Act. Yeagarup Farms submitted that water licencing does not apply over Lots 8183 and 8185 on Plan 201591 because it has 'spring rights'. Yeagarup Farms submitted a letter from the Department of Water (DoW) that was provided to the previous owner of the property that concluded that the water currently captured on the property does not require licencing under the *Rights in Water and Irrigation Act 1914* (RIWI Act). Current advice provided in respect to the application and the RIWI Act indicates that the letter submitted may not apply due to the date of the letter (2008) and the change in ownership. DWER is in the process of working with the Warren Donnelly Advisory Committee in finalising guidance for landowners on how to correctly consider section 5(1)(a) of the *Rights in Water and Irrigation Act 1914* and therefore satisfy themselves that their circumstances meet the requirements of the provision of that section of the Act, and therefore whether they are exempt from regulation. DWER will not be providing further advice on individual cases in relation to whether exemption provisions under section 5(1)(a) apply, until these Guidelines are released. In the interim period, should Yeagarup Farms make a decision to commence any activities relating to the take of water for irrigation purposes (including the construction of dams and other infrastructure), it is strongly recommended that they exercise due diligence in satisfying themselves that the hydrological and legal requirements of section 5(1)(a) of the RIWI Act have been met prior to the activity commencing. Given the complexity of some of the hydrological considerations, it is also recommended that a suitably qualified surface water specialist be engaged to ensure the hydrological elements of section 5(1)(a) are appropriately considered and satisfied.	The preliminary assessment has identified that additional water allocation may be required before the clearing for horticultural purposes could commence. If an approval for the identified purpose is not granted, it would be unnecessarily harmful to the environment for DWER to authorise native vegetation clearing when such clearing may not be required.
2.	A flora and vegetation survey is required for the area proposed to be cleared.	The survey is to be carried out by a *botanist* (see below for relevant definitions) and survey methodology must be consistent with the Environmental Protection Authority's (EPA) *Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment* (December 2016), copies of which are available at the EPA's website. All surveys must be submitted in accordance with the EPA's *Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA)*, and submitted via DWER's IBSA Submissions Portal. Please provide the corresponding IBSA Submissions Reference Number to the assessing officer, using the contact	Three soil sub-systems and four regional vegetation types, as described by Mattiske and Havel (1998) have been mapped over the application area occupying both 'uplands' (the Crowea complex) and 'valleys' (the Yanmah complex): • SWF 01: Open forest of *Eucalyptus marginata* subsp. *marginata-Banksia ilicifolia-Nuytsia floribunda with* some *Eucalyptus diversicolor* on gently sloping sandy terrain in hyperhumid and perhumid zones. • SWF 70: Tall open forest of *Corymbia calophylla* with mixture of *Eucalyptus marginata* subsp. *marginata* and *Eucalyptus diversicolor* on uplands in hyperhumid and perhumid zones. • SWF 321: Mixture of tall open forest of *Eucalyptus diversicolor* and tall open forest of *Corymbia calophylla-Eucalyptus patens-Eucalyptus*

Item	Information requirements	Specifications	Rationale
		details located on the top right of the attached letter, once the survey has been submitted. **NOTE:** DWER defines a "botanist" as a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of 2 years work experience in identification and surveys of flora native to the bioregion being inspected or surveyed, or who is approved by the CEO as a suitable botanist for the bioregion.	*marginata* subsp. *marginata* over *Agonis flexuosa* and *Agonis juniperina* on valleys in perhumid and humid zones. • SWF 68: Tall open forest of *Corymbia calophylla-Eucalyptus diversicolor* on upper slopes with *Allocasuarina decussata-Banksia grandis* on upper slopes in hyperhumid and perhumid zones. The vegetation communities occurring, and the condition of the vegetation of the application area, cannot be accurately assessed without a flora and vegetation survey. A description of the vegetation communities actually occurring over the application, and their condition using the vegetation scale of Keighery (1994) is required to enable an assessment of impact to be undertaken. Two flora taxa listed as Threatened under the *Biodiversity Conservation Act 2016* have been identified from the local area *(Caladenia harringtoniae* and *Commersonia apella),* as well as five flora taxa *(Inocybe redolens* [P2], *Rorippa cygnorum* [P2], *Actinotus repens* [P3], *Pultenaea pinifolia* [P3], and *Poa billardierei* [P3]). Two fungi species listed as Priority species have also been recorded. Given the four regional vegetation types and three separate soil types mapped over the application area, and the similarities shared between flora species of conservation significance and the soil and vegetation types within the application area, there is a reasonable probability that flora species of conservation significance may occur. A flora survey and assessment is required to confirm the presence or absence of significant flora taxa known from the local area. The likelihood of significant flora species occurring over the application area will enable an assessment of the impact of proposed clearing to Threatened and Priority flora taxa.
3.	A faunal survey is required for the area proposed to be cleared. Please note that should Threatened or Priority fauna be identified, additional surveys of surrounding areas will also be required to determine the species' local population size and distribution.	The survey is to be carried out by a *fauna specialist* (see below for relevant definitions) and survey methodology must be consistent with the Environmental Protection Authority's (EPA) *Technical Guidance: Terrestrial Fauna Surveys* (December 2016), copies of which are available at the EPA's website. All surveys must be submitted in accordance with the EPA's *Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA)*, and submitted via DWER's IBSA Submissions Portal. Please provide the corresponding IBSA Submissions Reference Number to the assessing officer, using the contact details located on the top right of the attached letter, once the survey has been submitted. **NOTE:** It is advised that the surveys requested may take fauna listed as Threatened under the *Biodiversity Conservation Act 2016*. Please note that no Threatened fauna are to be taken, unless an authorisation from the Minister for Environment under section 40 of the *Biodiversity Conservation Act 2016* is obtained from the Department of Biodiversity, Conservation and Attractions (DBCA). For further information on this matter please contact DBCA's Species and Communities Program via email sacl@dbca.wa.gov.au or view the *Threatened animals* web page.	A number of Threatened and Priority fauna are known to occur within the local area and there is a reasonable probability that these may occur in the application area including the Western Ringtail Possum *(Pseudocheirus occidentalis)*, listed as Critically Endangered under both the BC Act and the EPBC Act. The Western Ringtail Possum recovery plan has delineated three management zones applicable to the species. The application area is located within the southern forest management zone, with ten records in the local area including from within 1,100 metres of the application area within Warren National Park, which is located immediately adjacent to and, and is contiguous with, native vegetation in the application area. Western Ringtail Possum populations in the southern forest management zone occur mainly in Jarrah or Marri dominated forests, in adjacent stands of riparian vegetation often with an overstorey of Flooded Gum, and extending to Karri forests from Northcliffe to west of Manjimup (DPaW 2014). Records of the Vulnerable Mainland Quokka *(Setonix brachyurus),* and Priority 4 Quenda *(Isoodon fusciventer)* and Water-Rat *(Hydromys chrysogaster)* are also known from the local area, as is the Priority 2 Short-nosed Snake (*Elapognathus minor*). A Western Ringtail Possum survey is required to clarify presence/absence and distribution and abundance over the application area to enable an assessment of impact to be undertaken. An

Item	Information requirements	Specifications	Rationale
			assessment of the likelihood of other significant fauna occurring within the particular habitats present over the application area is also required.
4.	A black cockatoo habitat assessment is required for the area proposed to be cleared	The assessment/survey is to be carried out by a *fauna specialist,* and the survey is required to identify all foraging habitat and trees that have a diameter, measured at 1.3 metres from the base of the tree, of 50 centimetres or greater that contain a hollow or hollows that may be suitable for breeding by Carnaby's Cockatoo, Baudin's Cockatoo, and Forest Red-tailed Black Cockatoo. The survey must document: - the date(s) of the survey; - the GPS locations (i.e. eastings and northings or decimal degrees) of all trees identified as containing hollows which may be suitable for black cockatoos; - the methodology for determining the evidence of use of each hollow; and - a description/photo of the evidence of use. Any evidence of foraging by black cockatoos observed during the survey should also be documented. All surveys must be submitted in accordance with the EPA's *Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA)*, and submitted via DWER's IBSA Submissions Portal. Please provide the corresponding IBSA Submissions Reference Number to the assessing officer, using the contact details located on the top right of the attached letter, once the survey has been submitted. **NOTE:** DWER defines a "fauna specialist" as a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of two years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016* (WA).	Three species of black cockatoo have been recorded from the local area that are listed as Threatened under the BC Act, and the EPBC Act: Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Baudin's Cockatoo (*Calyptorhynchus baudinii*) and Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso).* Native trees within the application area are required to be assessed in terms of potential breeding, roosting or foraging habitat to enable an assessment of impact to be undertaken.

Appendix B. Details of public submissions

Summary of comments / submissions	Consideration of comments
Submission 1	
Avoidance and minimisation	***DWER Comments***
The owners have already cleared a large area that is outside the application area.	The alleged clearing was sent to DWER's Compliance and Enforcement (C&E) Division (Ref # ICMS 62684). DWER / C&E has completed an assessment and investigation of report of potential unauthorised native vegetation clearing. Contact has been made with the property proprietors who have stated that they have undertaken clearing of native vegetation around their property for fence lines with the approval of the Shire of Manjimup and in accordance with an exemption under Regulation 5 Item 10 and 11. There also appears to be additional clearing that may have been authorised under the Item 14 exemption (Clearing to maintain existing cleared areas for pasture, etc). All reports of unauthorised native vegetation clearing are assessed primarily on environmental risk to determine the appropriate level of response. This matter has been assessed to be below the threshold to warrant further investigation. The clearing was reported to and investigated by the Compliance and

	Enforcement Division of the Department. It was determined that the clearing was for asset protection (from fire) and exempted from having to have a clearing permit.
Surveys	
There is inadequate baseline information, consideration of potential impacts, and definition of management strategies.	The Department requested the applicant to perform a flora and fauna assessment, including a Black cockatoo assessment. The information was not provided by the applicant. In the absence of the survey reports, the assessment of impacts of the proposed clearing is performed based on available information which indicated that it is likely to be significant. See Section 3 for detailed assessment.
No assessment of impacts to flora and vegetation and fauna; particularly black cockatoos and ringtail possums.	
A thorough environmental impact assessment is required including the consideration of cumulative impacts.	
Referral and assessment under the EPBC Act should be considered appropriate.	Noted. During assessment, the applicant was advised on this matter.
Submission 2	
Avoidance and minimisation	
The owners have already cleared a large area that is outside the application area. Why is this area excluded from the application?	Same as above.
Disturbance to local residents	
Clearing of pristine native vegetation will severely impact local rural amenities, local road surface conditions and safety with log trucks entering and leaving the property.	Impacts on public amenities including road and air quality are not matters that are assessed by the Department for clearing permit applications. The Department requested the applicant to perform a flora and fauna assessment, including a Black cockatoo assessment. The information was not provided by the applicant. In the absence of the survey reports, the assessment of impacts of the proposed clearing is performed based on available information which indicated that it is likely to be significant. See Section 3 for detailed assessment, including on possible impact on water and land resources.
The operation will cause local noise and smoke pollution from chainsaws, machinery and burning of logging slash.	
Climate change	
With impacts of climate change and our drying climate it is imperative that we preserve native vegetation for carbon sequestration, biodiversity protection, provision of habitat, and the local hydrological cycle.	While clearing of native vegetation contributes to climate change, if granted, the proposed clearing would be trivial in this regard. The Department encouraged the applicant to avoid and minimise the impacts of clearing. The State Government is developing a State Climate Policy which will consider the impacts of clearing on climate change and opportunity to sequester carbon.
Submission 3 (9 signatories)	
Avoidance and minimisation	
The applicant could utilise the already cleared land on the properties for further horticultural plantings, preserving the native vegetation for many beneficial local and regional outcomes. There are state and federal government schemes and financial incentives for farmers and land managers to preserve and restore native vegetation for biodiversity protection and the provision of ecosystem services.	During assessment, the department requested the applicant to consider options to minimise and avoid clearing. The matter is discussed in Section 3.1.
Significant impact	
The proposed clearing constitutes a significant proposal under section 37B(1) of the Environmental Protection Act and should be referred to the Environmental Protection Authority for assessment under Part IV of the Environmental Protection Act.	Noted. During assessment, the applicant was advised on this matter.
Disturbance to local residents.	
Clearing of pristine native vegetation will severely impact local rural amenities.	Impacts on public amenities including road conditions and air quality are not matters that are assessed by the Department for clearing permit applications. The Department, however, requested the applicant to perform a flora and fauna assessment, including a Black cockatoo assessment. The information was not provided by the applicant. In the absence of the survey reports, the assessment of impacts of the proposed clearing is performed based on available information which indicated that it is likely to be significant. See Section 3 for detailed assessment, including on possible impact on the water and land resources.
Clearing of pristine native vegetation will have a detrimental and irreversible impact on native fauna and local biodiversity, will contribute significant soil erosion and sedimentation of local waterways	
The operation will impact local road surface conditions and safety with log trucks entering and leaving the property.	
The operation will cause local noise and smoke pollution from chainsaws, machinery and burning of logging slash.	
Climate change	

With impacts of climate change and our drying climate it is imperative that we preserve native vegetation for carbon sequestration, biodiversity protection, provision of habitat, and the local hydrological cycle.	While clearing of native vegetation contributes to climate change, if granted, the proposed clearing would be trivial in this regard. The Department encouraged the applicant to avoid and minimise the impacts of clearing. The State Government is developing a State Climate Policy which will consider the impacts of clearing on climate change and opportunity to sequester carbon.

Appendix C. Site characteristics

C.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared comprises of six patches of native vegetation in the intensive land use zone of Western Australia. The vegetation is surrounded by the Warren National Park and some farmlands. A patch measuring approximately 14 ha is adjoining the Warren National Park and a part of the expansive tract of native vegetation within the Park. The other patches are connected to the native vegetation surrounding the property. Vegetation on the property is a part of the mapped South Western Regional Ecological Linkages. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 78 per cent of the original native vegetation cover.
Ecological linkage	The application area is within 600 m radius of the axis of the mapped Southwestern Ecological linkage. The patches of vegetation proposed to be cleared, particularly on the eastern side of the property provide connection between the large patches of vegetation to the north and south of the application area.
Conservation areas	The vegetation within the application area is adjoining the Warren National Park.
Vegetation description	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area are likely to comprise of *Allocasuarina sp*., *Agonis flexuosa*, tall forest of *Corymbia calophylla*, *Eucalyptus diversicolor*, and *E. marginata*. Representative photos are available in Appendix E. The vegetations in the application area are mapped as follow: • Angove Complex – (A) of the Southern Plain Sub-Region of the SouthWest IBRA region, described as Open forest of *Eucalyptus marginata* subsp. marginata-*Banksia ilicifolia-Nuytsia floribunda* with some *Eucalyptus diversicolor* on gently sloping sandy terrain in hyperhumid and perhumid zones. • Crowea Vegetation Complex (Class CRb, CRd, CRy) of the Darling Plateu Sub-region of the South West IBRA Region, described as open forest to tall open forest of *Eucalyptus marginata subsp. marginata-Corymbia calophylla* on uplands in hyperhumid and perhumid zones. Tall open forest of *Corymbia calophylla* with mixture of *Eucalyptus marginata* subsp. marginata and *Eucalyptus diversicolor* on uplands in hyperhumid and perhumid zones. Tall open forest of *Corymbia calophylla-Eucalyptus diversicolor* on upper slopes with *Allocasuarina decussata-Banksia grandis* on upper slopes in hyperhumid and perhumid zones. • Yanmah Vegetation Complex (YN1) of the Darling Plateu Sub-region of the South-West IBRA Region, described as mixture of tall open forest of *Eucalyptus diversicolor* and tall open forest of *Corymbia calophylla-Eucalyptus patens-Eucalyptus marginata* subsp. marginata over *Agonis flexuosa* and *Agonis juniperina* on valleys in perhumid and humid zones. The mapped vegetation complexes retain approximately 87.5, 72, and 81.8 percents respectively.
Vegetation condition	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is likely to be in Very Good condition (Keighery, 1994) or better.

Characteristic	Details
Climate and landform	The application area is situated on the crest of a valley with a gentle slope (5%), with elevation ranging between 160 and 140 m above sea level.
Soil description	The soils are mapped as: • Crowea (Pimelia), yellow duplex Phase (254PvCRy). Described as gravelly yellow duplex soils of the jarrah-marri-forest. • Yanmah Subsystem (Pimelia), described as shallow (5-20 m) minor valleys, usually U-shaped with gentle sideslopes (3-10%) and broad swampy floors. Soils are loamy gravels, sandy gravels and deep sands with non-saline wet soils on the valley floors. • Angove Subsystem (Pimelia), described as gently sloping sandy terrain; slight dissections. Humus podzols on broad crests; Kangaroo Grass sedgeland, Teatree heath. Sandy yellow duplex soils in shallow dissections; Jarrah woodland. (254PvAN)
Land degradation risk	The soils at the application area are mapped as highly susceptible to wind erosion and moderately susceptible to nutrient export and sub-surface acidification.
Waterbodies	The application area intercepts two minor non-perennial streams; one is a part of the Treen Brook system which discharges into the Warren River System, and the other is a part the Lower Warren River System.
Hydrogeography	The application area is proclaimed under the CAWS Act and the RIWI Act : Warren Donnelly Surface Water.
Flora	Nine (9) significant conservation flora species have been recorded from the local area, two of which are Threatened. The closest record is within 2 km from the application area. The recorded flora species are found in the same types of soil and vegetation as the application area.
Ecological communities	No TEC or PEC is mapped within the application area. The closest ecological community is the Open Jarrah Forest and Woodland developed on young, exposed quartzite on Ridge Road (P1), located approximately 19 km North-east of the application area.
Fauna	Twenty one (21) conservation significant fauna species, ten (10) of which are Threatened have been recorded from the local area. The closest records to the application area include Western Ringtail Possum and Carnaby's cockatoo, which are within 1.5 km of the application area.

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 sub - bioregion*					
Darling Plateau	52,753.257	45,425.073	86.108	43,135.870	81.769
Southern Plain	39,698.489	34,737.437	87.503	31,437.216	79.189
Vegetation complex					
Angove Complex – (A)	39,698.489	34,737.437	87.503	31,845.949	79.189
Crowea (Cry)	33,764.553	24,324.313	72.041	22,509.411	66.666
Yanmah (YN1)	23,494.218	19,229.711	81.847	18,180.492	77.383
Local area (calculation - delete if not required)					

	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
10km radius	349,788,033.7	272,863,555.5	78.00	-	-

*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.1impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Actinotus repens	3	Y	Y	Y	4.34	1	N/A
Amanita fibrillopes	3	Y	Y	Y	5.24	3	N/A
Amanita kalamundae	3	Y	Y	Y	8.41	2	N/A
Caladenia harringtoniae	T	Y	Y	Y	8.38	1	N/A
Commersonia apella	T	Y	Y	Y	8.84	2	N/A
Inocybe redolens	2	Y	Y	Y	7.86	1	N/A
Poa billardierei	3	Y	Y	Y	2.24	1	N/A
Pultenaea pinifolia	3	Y	Y	Y	4.18	2	N/A
Rorippa cygnorum	2	Y	Y	Y	2.86	1	N/A
T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority							

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)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Bettongia penicillata ogilbyi (Woylie, brush-tailed bettong)	CR	Y	Y	9.16	2	N/A
Cacatua pastinator pastinator (Muir's corella)	CD	Y	Y	7.23	2	N/A
Calidris ferruginea (curlew sandpiper)	CR	Y	Y	7.36	1	N/A
Calyptorhynchus banksii naso (forest red-tailed black cockatoo)	VU	Y	Y	5.05	6	N/A
Zanda baudinii (Baudin's cockatoo)	EN	Y	Y	2.46	40	N/A
Zanda latirostris (Carnaby's cockatoo)	EN	Y	Y	1.41	3	N/A
Calyptorhynchus sp. 'white-tailed black cockatoo' (White-tailed black cockatoo)	EN	Y	Y	0.95	15	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Elapognathus minor (Short-nosed snake)	P2	Y	Y	6.87	4	N/A
Geotria australis (Pouched lamprey)	P3	Y	Y	4.38	16	N/A
Helicarion castanea (a helicarionid land snail)	EX	Y	Y	9.07	1	N/A
Hydromys chrysogaster (Water-rat, rakali)	P4	Y	Y	2.96	19	N/A
Isoodon fusciventer (Quenda, southwestern brown bandicoot)	P4	Y	Y	6.38	9	N/A
Ixobrychus flavicollis australis (southwest subpop.) (black bittern (southwest subpop.))	P2	Y	Y	8.55	1	N/A
Occirhenea georgiana (a rhytidid land snail, Albany carnivorous snail)	EX	Y	Y	9.07	1	N/A
Oxyura australis (Blue-billed duck)	P4	Y	Y	9.04	1	N/A
Pandion cristatus (Osprey, eastern osprey)	MI	Y	Y	7.82	2	N/A
Phascogale tapoatafa wambenger (south-western brush-tailed phascogale, wambenger)	CD	Y	Y	5.78	11	N/A
Pseudocheirus occidentalis (western ringtail possum, ngwayir)	CR	Y	Y	1.00	10	N/A
Setonix brachyurus (Quokka)	VU	Y	Y	3.11	29	N/A
Tyto novaehollandiae novaehollandiae (masked owl (southwest))	P3	Y	Y	9.16	2	N/A
Westralunio carteri (Carter's freshwater mussel)	VU	Y	Y	2.36	15	N/A

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

C.5. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Open Jarrah forest and woodland developed on young exposed quartzite on Ridge Road	P1	N	N	N	19	1	N/A

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

C.6. Land degradation risk table

Risk categories	*Land Unit 1*	*Land unit 2*	*Land unit 3*
Wind erosion	H2 >70% of map unit has a high to extreme wind erosion risk	H1 50-70% of map unit has a high to extreme wind erosion risk	H2 >70% of map unit has a high to extreme wind erosion risk
Water erosion	L2: 3-10% of the map unit has a very high to extreme hazard	M1: 10-30% of the map unit has a high to extreme hazard	L1: <3% of the map unit has a moderate to high hazard
Salinity	L2: 3-10% of the map unit has a moderate or high hazard or is presently saline		
Subsurface Acidification	H1 50-70% of map unit has a high to extreme surface acidification risk	H1 50-70% of map unit has a high to extreme surface acidification risk	H1 50-70% of map unit has a high to extreme surface acidification risk
Flood risk	L1: <3% of the map unit has a moderate to high hazard		
Water logging	L1 <3% of the map unit has a moderate to high hazard	M2: 30-50% of the map unit has a high susceptibility	L2: 3-10% of the map unit has a moderate to very high to risk
Phosphorus export risk	M1: 10-30% of the map unit has a high to extreme hazard	M2: 30-50% of the map unit has a high susceptibility	M2: 30-50% of the map unit has a high susceptibility

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared is adjoining the Warren National Park that is protected for its biodiversity. The application area may contain habitat for conservation significant fauna species. It is also likely to contain conservation significant flora species. In the absence of a flora, vegetation and fauna survey, it is considered likely that the proposed clearing is at variance with this principle.	At variance	Yes *Refer to Section 3.2.2, above.*
Principle (b): *"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."* Assessment: Desktop analysis indicate that conservation significant fauna species including Threatened fauna species are likely to be present at the proposed clearing area. The vegetation proposed to be cleared includes species known to be the preferred habitat of some Threatened species including the three Threatened Black cockatoo species and the Western Ring Tail	At variance	Yes *Refer to Section 3.2.1, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
Possum. In the absence of a fauna and / or Black cockatoo survey, the proposed clearing is likely to be at variance with this principle.		
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: Two threatened flora species have been recorded from the local area. The application area exhibits the soil and vegetation characteristics that support the Threatened flora species. In the absence of a flora survey over the application area, the proposed clearing is considered likely to be at variance with this principle.	May be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (d): *"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."* Assessment: The area proposed to be cleared does not contain species that can indicate a threatened ecological community. A threatened ecological community as defined in the Biodiversity Conservation Act 2016 section 5(1); or (b) any other ecological community listed, designated or declared as threatened, endangered or vulnerable under or for the purposes of a written law; or (c) a listed threatened ecological community as defined in the Commonwealth Environment Act section 528**.** The EPBC Act defines TECs as a community that is critically endangered, endangered or vulnerable as defined under section 182.	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The 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. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.	Not at variance	No
Principle (h): *"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."* Assessment: The application area is adjoining the to the Warren National Parks, a vast track of native vegetation preserved for its biodiversity and conservational values. Clearing may directly and indirectly impact on the biodiversity, conservation and habitat values of the National Park through the introduction and spread of weeds and diseases.	May be at variance	Yes *Refer to Section 3.2.1, above.*
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Two non-perennial streams begin in the property and intersect the application area. In the western part, the stream is a part of the Lower Warren River system sub-division of the Warren-Donnelly Hydrological Zone, and in the	At variance	Yes *Refer to Section 3.2.3, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
eastern part the stream discharges into Treen Brook. Clearing and subsequent horticulture farming is likely to affect the river systems.		
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: Being surrounded by the forest, farms and waterways, the soils in the application area are susceptible to nutrient export. Noting that the streams will be dammed subsequent to clearing, the extent of nutrient export is unlikely to be significant.	Not likely to be at variance	Yes *Refer to Section 3.2.3, above.*
Principle (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."* Assessment: Given the plan to abstract water from and dam the streams subsequent to clearing, the proposed clearing may impact surface or ground water quality.	May be at variance	Yes *Refer to Section 3.2.3, above.*
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: Given the topography and being at the top a of a hill, the soils of the application area and the surrounding area is mapped as having a low risk to flood or to contribute to increased incidence or intensity of flooding.	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

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

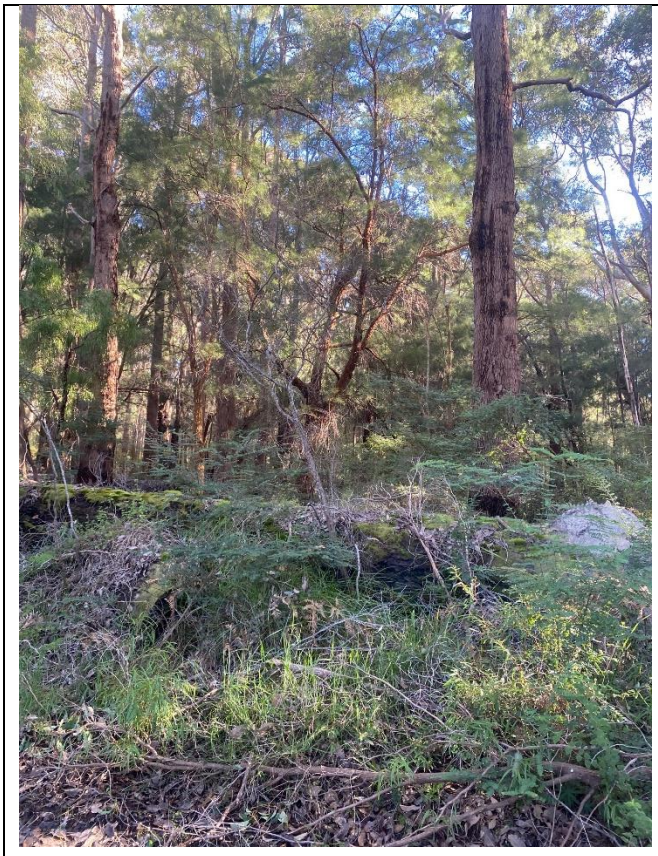
Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western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

Measuring vegetation condition for the 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.

Condition	Description
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix E. Photographs of the vegetation (Della Franca, 2021)



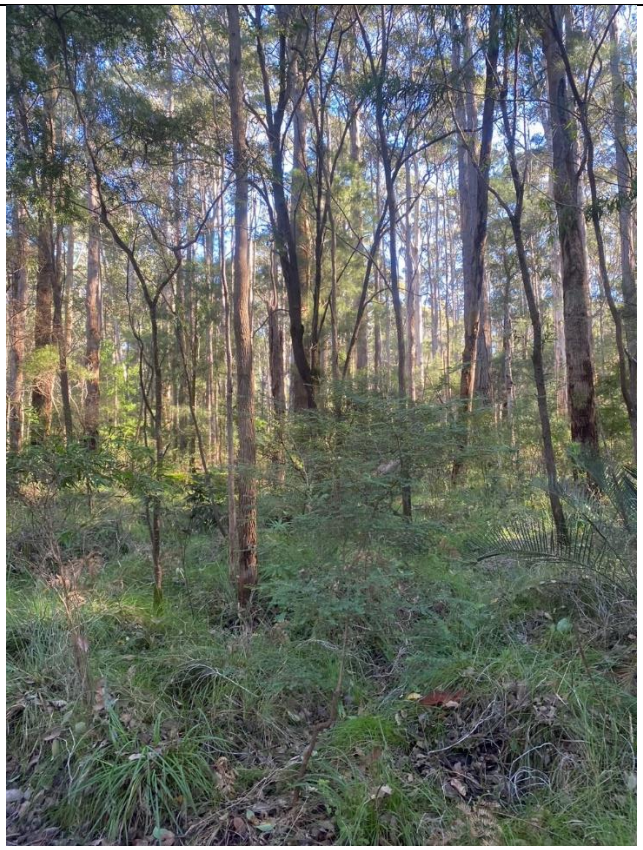


Figure 3. Vegetation over parts of the application areas. The vegetation appears to be in Very Good condition or better.

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 (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)

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