



Clearing Permit Decision Report

Government of Western Australia
Department of Environment Regulation

1. Application details

1.1. Permit application details

Permit application No.: 6872/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Busselton Clay Target Club Inc. and Bunbury Clay Target Club Inc.

1.3. Property details

Property: LOT 500 ON DIAGRAM 98894, LUDLOW
LOT 501 ON DIAGRAM 98894, LUDLOW
Local Government Area: BUSSELTON, CITY OF

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4.36	-	Mechanical Removal	Recreation

1.5. Decision on application

Decision on Permit Application: Refusal
Decision Date: 19 July 2016
Reasons for Decision: The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and it has been concluded that the proposed clearing is at variance to clearing principles (b), (e), (f) and (h) and is not likely to be at variance to the remaining clearing principles.

The Delegated Officer has determined that the application area contains significant habitat for indigenous fauna, is a significant remnant within a highly cleared landscape, contains wetland dependent vegetation and the proposed clearing may impact the environmental values of nearby conservation areas.

The Delegated Officer notes that additional clearing outside the current application area may be required for access and after a Bush Fire assessment has been done. The Delegated Officer also notes that Planning Approval is required from the City of Busselton and at 19 July 2016, has not been obtained.

State and other relevant policies have been taken into consideration in the decision to refuse to grant a clearing permit.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The vegetation under application has been mapped as Beard vegetation association 1000 which is described as a mosaic; medium forest, jarrah-marri / low woodland, banksia / low forest, teatree (<i>Melaleuca</i> spp.) (Shepherd et al., 2001).	The application is to clear 4.36 hectares of native vegetation within Lots 500 and 501 on Diagram 98894, Ludlow, for the purpose of establishing a clay target shooting range.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994).	The condition of the vegetation under application was determined via a site inspection of the application area undertaken by DER (DER, 2016).
The vegetation under application has been mapped as Heddle vegetation, Southern River complex which is described as open woodland <i>Corymbia calophylla</i> (Marri) - <i>Eucalyptus marginata</i> (Jarrah) - Banksia species with fringing woodland of <i>Eucalyptus rudis</i> (Flooded Gum) - <i>Melaleuca raphiophylla</i> (Swamp Paperbark) along creek beds (Heddle et al., 1980).		To Degraded; Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	

A site inspection of the application area undertaken by the Department of Environment Regulation (DER) identified two vegetation associations (DER, 2016):

- Open forest of *Eucalyptus marginata* and *Corymbia calophylla* over a sparse understorey of introduced grasses; and
- Completely degraded paddock of introduced grasses, intermittent patches of *Juncus* sp. and isolated *Agonis flexuosa*.

3. Assessment of application against Clearing Principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments Proposed clearing is not likely to be at variance to this Principle

The application is to clear up to 4.36 hectares of native vegetation for the purpose of constructing a clay target shooting range.

A site inspection of the application area undertaken by the Department of Environment Regulation (DER) identified two vegetation associations (DER, 2016):

- Open forest of *Eucalyptus marginata* and *Corymbia calophylla* over a sparse understorey of introduced grasses in a degraded (Keighery, 1994) condition; and
- Completely degraded (Keighery, 1994) paddock of introduced grasses, intermittent patches of *Juncus* sp. and isolated *Agonis flexuosa*.

The local area (10 kilometre radius) surrounding the application area retains approximately 20 per cent native vegetation. Given this, the vegetation under application falls within a highly cleared landscape.

Given the degraded (Keighery, 1994) condition of the understorey vegetation, the vegetation under application is not likely to contain conservation significant flora recorded from the local area. Given this, the vegetation under application is not likely to contain a high degree of flora biodiversity or be representative of a conservation significant ecological community.

Six fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act) have been mapped within the local area (10 kilometre radius) and may be present within the application area. These are forest red-tailed black-cockatoo (*Calyptorhynchus banksii subsp. naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), chuditch (*Dasyurus geoffroii*), southern brush-tailed phascogale (*Phascogale tapoatafa subsp. tapoatafa*) and western ringtail possum (*Pseudocheirus occidentalis*) (Parks and Wildlife, 2007-).

A further five fauna species listed as Priority (P) by the Department of Parks and Wildlife (Parks and Wildlife) have been recorded from the local area and may be present within the application area. These are masked owl (*Tyto novaehollandiae subsp. novae-hollandiae*), western false pipistrelle (*Falsistrellus mackenziei*), western brush wallaby (*Macropus ima*), western mouse (*Pseudomys occidentalis*) and quenda (*Isoodon obesulus subsp. fusciventer*) (Parks and Wildlife, 2007-).

A site inspection of the application area (DER, 2016) recorded potential nesting habitat and significant feeding habitat for black cockatoos (forest red-tailed black-cockatoo, Baudin's cockatoo and Carnaby's cockatoo), southern brush-tailed phascogale and western ringtail possum within the application area.

The application area forms part of a north-south and east-west ecological linkage, defined by the South West Regional Ecological Linkage Report (Molloy et al., 2009). The vegetation under application is defined as 1a as it is connected to the linkage. These linkages connect the application area to Coolilup State Forest, 300 metres to the west, and Capel Nature Reserve, approximately 2.6 kilometres to the north. Ecological linkages have been defined as "a series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape". Given this the application area may be significant in the maintenance of biodiversity across the landscape.

Although the application area contains significant fauna habitat, given the condition of the vegetation under application and lack of flora diversity, the proposed clearing is not likely to be at variance to this Principle.

Methodology

References:

DER (2016)
Parks and Wildlife (2007-)
Keighery (1994)
Molloy et al. (2009)

(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 indigenous to Western Australia.

Comments Proposed clearing is at variance to this Principle

A site inspection of the application area undertaken by the Department of Environment Regulation (DER) identified two vegetation associations (DER, 2016):

- Open forest of *Eucalyptus marginata* and *Corymbia calophylla* over a sparse understorey of introduced grasses in a degraded (Keighery, 1994) condition; and
- Completely degraded (Keighery, 1994) paddock of introduced grasses, intermittent patches of *Juncus* sp. and isolated *Agonis flexuosa*.

The local area (10 kilometre radius) surrounding the application area retains approximately 20 per cent native vegetation. Given this, the vegetation under application falls within a highly cleared landscape.

Ecological linkages of vegetation between larger areas of conservation value are important for enabling fauna to continue to move through the landscape and between reserves. This is vital both for species that are nomadic and for maintaining populations of less mobile species that may otherwise become locally extinct in individual reserves. Remnant patches within the vicinity of large contiguous areas of native vegetation (outliers) are more likely to support wildlife than more isolated patches – with greater separation distances fewer species will have the mobility necessary to maintain access (DER, 2014).

The application area forms part of a north-south and east-west ecological linkage, defined by the South West Regional Ecological Linkage Report (Molloy et al., 2009). The vegetation under application is defined as 1a as it is connected to the linkage. These linkages connect the application area to Coolilup State Forest, 300 metres to the west, and Capel Nature reserve, approximately 2.6 kilometres to the north. Ecological linkages have been defined as "a series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape". Given this the application area is significant in the movement of indigenous fauna across the landscape. Although clearing the vegetation under application will not sever the linkage, it will impact on its viability by reducing its width.

Six fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950 (WC Act)* have been mapped within the local area (10 kilometre radius) and may be present within the application area. These are forest red-tailed black cockatoo (*Calyptorhynchus banksii subsp. naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), chuditch (*Dasyurus geoffroii*), southern brush-tailed phascogale (*Phascogale tapoatafa subsp. tapoatafa*) and western ringtail possum (*Pseudocheirus occidentalis*) (WRP) (Parks and Wildlife, 2007-).

A site inspection of the application area (DER, 2016) recorded potential nesting habitat and significant foraging habitat for black cockatoos (forest red-tailed black cockatoo, Baudin's cockatoo and Carnaby's cockatoo), southern brush-tailed phascogale and WRP within the application area. Numerous trees of an age and size as to contain current black cockatoo nest sites were observed.

Black cockatoos nest in large hollows of eucalyptus trees and forage on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (Banksia, Hakea, Grevillea), Eucalypts, Corymbia species and a range of introduced species (Shah, 2006; Valentine and Stock, 2008).

Carnaby's cockatoo was once abundant in Western Australia. Since the late 1940s the species has suffered a 30 per cent contraction in range, a 50 per cent decline in population, and between 1968 and 1990 disappeared from more than a third of its breeding range. Basic ecological theory, expert opinion and recent evidence, suggests that the remaining native and pine plantation foraging habitat on the Swan Coastal Plain is just sufficient to support the current population of Carnaby's cockatoo. Therefore any reduction in the amount of food source will result in a reduction in the carrying capacity of the region and therefore a decline in the population of Carnaby's cockatoo (Saunders, 1990; Johnstone and Storr, 1998; Saunders and Ingram, 1998; Garnett et al., 2011).

The Carnaby's cockatoo recovery plan states, "Success in breeding is dependent on the quality and proximity of feeding habitat within 12 kilometres of nesting sites. Along with the trees that provide nest hollows, the protection, management and increase of this feeding habitat that supports the breeding of Carnaby's cockatoo is a critical requirement for the conservation of the species" (Parks and Wildlife, 2013).

The recovery plan also states "In 1998, Saunders and Ingram considered that there were sufficient hollow-bearing eucalypts for Carnaby's cockatoos in the Wheatbelt, however the senescence and loss of ageing hollows, and competition for hollows is likely to be an issue for the conservation of the species. One of the indirect effects of broad-scale clearing for agriculture in the south-west of Western Australia is that there is a lack of recruitment of nesting trees (Saunders et al., 2003). As a consequence there may be a shortage of suitable nesting hollows in some areas in the future, regardless of whether there is sufficient suitable foraging habitat present within close proximity to those breeding sites" (Parks and Wildlife, 2013).

As the application area contains potential nest sites for black cockatoos, is within known breeding areas, contains foraging habitat and the local area is highly cleared, the vegetation under application contains significant habitat for black cockatoos.

The southern brush-tailed phascogale occurs in dry sclerophyll forests and open woodlands that contain hollow-bearing trees. Suitable habitat for this species has been observed within the application area (DER, 2016). Major threats to the species are habitat clearing, fragmentation, and alteration by logging and mining. This species is likely to be present within the application area and the vegetation under application is likely to contain significant habitat for the species.

The WRP is restricted to the South West of Western Australia with *Agonis flexuosa* (Peppermint) forming a core habitat requirement (DotE, 2013). The habitat assessment for WRP on the Swan Coastal Plain (Shedley and Williams, 2014) has mapped the vegetation under application as medium density WRP habitat and adjoining vegetation as high value. This indicates that the vegetation under application may support 2-10 WRP's per hectare (Shedley and Williams, 2014).

A reduced understorey density may not affect the carrying capacity of the habitat patch if the upper canopy remains intact (Shedley and Williams, 2014). Given that the upper canopy of the application area is predominantly intact, contains *Agonis flexuosa* (DER, 2016) and is contiguous with a significant remnant patch of high value WRP habitat (Shedley and Williams, 2014; DER 2016); the application area contains significant habitat for this species.

Chuditch inhabit eucalypt forest (especially Jarrah), dry woodland and mallee shrublands (Menkhorst and Knight, 2004). In Jarrah forest, chuditch populations occur in both moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest. Most diurnal resting sites in sclerophyll forest consist of hollow logs or earth burrows (Van Dyke and Strahan, 2008).

Chuditch travel large distances, have a large home range and are sparsely populated through a large portion of their range. Given this the retention of vegetation corridors is noted as an important requirement of the species (DEC, 2012) and the vegetation under application is likely to contain significant habitat for the species.

A further five fauna species listed as Priority (P) by Parks and Wildlife have been recorded from the local area and may be present within the application area. These are masked owl (*Tyto novaehollandiae* subsp. *novae-hollandiae*), western false pipistrelle (*Falsistrellus mackenziei*), western brush wallaby (*Macropus imma*), western mouse (*Pseudomys occidentalis*) and quenda (*Isoodon obesulus* subsp. *fusciventer*). Given a commonality of preferred habitat types, the vegetation under application may contain suitable habitat for these species.

The Department of Parks and Wildlife (2016a) has advised that the area under application appears to have high environmental value as it supports habitat for a number of threatened fauna and provides local linkages and ecological benefits to the Ludlow River.

Given the above, the proposed clearing is at variance to this Principle.

Methodology

References:

DEC (2012)
DER (2014)
DER (2016)
DotE (2013)
Garnett et al (2011)
Johnstone and Storr (1998)
Keighery (1994)
Menkhorst and Knight (2004)
Molloy et al. (2009)
Parks and Wildlife (2007-)
Parks and Wildlife (2013)
Parks and Wildlife (2016a)
Saunders (1990)
Saunders et al (2003)
Saunders and Ingram (1998)
Shah (2006)
Shedley and Williams (2014)
Valentine and Stock (2008)
Van Dyke and Strahan (2008)

GIS Datasets:

Carnaby Cockatoo habitat
Western Ringtail Possum Habitat Suitability

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposed clearing is not likely to be at variance to this Principle

Given the degraded to completely degraded (Keighery, 1994) condition of the understorey, the vegetation under application is not likely to contain rare flora recorded from the local area (DER, 2016). Given this, the application is not likely to be at variance to this Principle.

Methodology References:
DER (2016)
Keighery (1994)

GIS Datasets:
SAC Bio-datasets - accessed March 2016

(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.

Comments Proposed clearing is not likely to be at variance to this Principle

Given the degraded to completely degraded (Keighery, 1994) condition of the understorey, the vegetation under application does not represent threatened ecological communities (TEC) recorded from the local area (10 kilometre radius) (DER, 2016).

The application area forms part of a north-south and east-west ecological linkage, defined by the South West Regional Ecological Linkage Report (Molloy et al., 2009). These linkages connect the application area to Coolilup State Forest, 300 metres to the west, and Capel Nature reserve, approximately 2.6 kilometres to the north. Ecological linkages have been defined as "a series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape". Given this the application area is significant in the movement of biological material across the landscape.

The TEC *Eucalyptus calophylla* woodlands on heavy soils of the southern Swan Coastal Plain occurs in vegetation adjoining Coolilup State Forest, approximately 250 metres from the application area, along the mapped east-west linkage. Although the application area falls in close proximity to this TEC and is connected by an ecological linkage, given the degraded (Keighery, 1994) condition of the vegetation under application and agricultural land use in between, the TEC is not likely to be impacted by the proposed clearing.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Reference:
DER (2016)
Keighery (1994)
Molloy et al. (2009)

GIS Datasets:
SAC Bio-datasets - accessed March 2016

(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.

Comments Proposed clearing is at variance to this Principle

The area under application is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion retains approximately 38 per cent of its pre-European vegetation extent (Government of Western Australia, 2014).

The vegetation under application is mapped as Beard vegetation association 1000 of which there is approximately 25 per cent of its pre-European vegetation extent remaining within the Swan Coastal Plain bioregion (Government of Western Australia, 2014).

The vegetation under application is mapped as Heddle vegetation Southern River complex which retains approximately 18 per cent pre-European vegetation extent (Parks and Wildlife, 2015).

The area under application is located within the City of Busselton, within which there is approximately 41 per cent pre-European vegetation extent remaining (Government of Western Australia, 2014). Approximately 68 per cent of this vegetation falls within Parks and Wildlife managed land.

The local area (10 kilometre radius) is highly cleared with approximately 20 per cent vegetation remaining.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

A site inspection of the application area (DER, 2016) recorded potential nesting habitat and significant feeding habitat for black cockatoos, southern brush-tailed phascogale and WRP within the application area. Therefore the application area is considered a significant remnant, despite the degraded (Keighery, 1994) understorey condition of the vegetation.

The application area forms part of a north-south and east-west ecological linkage, defined by the South West Regional Ecological Linkage Report (Molloy et al., 2009). The vegetation under application is defined as 1a as it is connected to the linkage. These linkages connect the application area to Coolilup State Forest, 300 metres to the west, and Capel Nature reserve, approximately 2.6 kilometres to the north.

Ecological linkages have been defined as "a series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape". Given this the application area is significant for its role in the maintenance of biodiversity across the landscape. Although clearing the vegetation under application will not sever the linkage, it will impact on its viability by reducing its width.

Given the above, the proposed clearing is at variance to this Principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,221	580,697	38	37
Shire*				
City of Busselton	146,478	60,212	41	68
Beard Vegetation Association in Bioregion*				
1000	94,175	23,872	25	18
Heddie Vegetation Complex**				
Southern River Complex	57,970	10,698	18	1.5

Methodology References:
 Commonwealth of Australia (2001)
 DER (2016)
 *Government of Western Australia (2014)
 Molloy et al. (2009)
 **Parks and Wildlife (2015)

GIS Datasets:
 Carnaby Cockatoo breeding sites
 SAC Bio-datasets - accessed March 2016

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments **Proposed clearing is at variance to this Principle**
 The south western portion of the application area (approximately 0.6 hectares) falls within a mapped multiple use palusplain wetland. Vegetation under application falls approximately 100 metres from the Ludlow River and within 50 metres of an area mapped as subject to inundation.

The vegetation within the mapped multiple use palusplain wetland is in a completely degraded (Keighery, 1994) condition consisting of isolated paddock trees and intermittent patches of the wetland species *Juncus* sp. (DER, 2016). The area has been highly impacted by grazing.

Given the above, the proposed clearing is at variance to this Principle. However, given the relatively small area, condition of the vegetation and disturbance history, impacts are not likely to be significant.

Methodology References:
 DER (2016)
 Keighery (1994)

GIS Datasets:
Hydrography linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments **Proposed clearing is not likely to be at variance to this Principle**
Soils within the application area have been mapped within the Abba Flats Phase land system (map unit) (Schoknecht et al., 2004) which is described as; flats and low rises with sandy grey brown duplex (Abba) and gradational (Busselton) soils.

The application area has been mapped within the following land degradation risk categories (Schoknecht et al., 2004):

- 10 to 30 per cent of map unit has a high to extreme phosphorus export risk;
- 30 to 50 per cent of the map unit has a moderate to high salinity risk or is presently saline;
- Less than three per cent of map unit has a high to extreme water erosion risk;
- 10-30 per cent of map unit has a high to extreme wind erosion risk; and
- 50-70 per cent of map unit has a moderate to very high waterlogging risk.

Given this, clearing the vegetation under application is not likely to lead to land degradation through eutrophication, salinity, water erosion or wind erosion. Despite the mapped risk, given the degraded to completely degraded (Keighery, 1994) condition of the vegetation, relatively small amount of clearing and as a majority of the application area falls within relatively upland areas, clearing the vegetation under application is not likely to lead to land degradation through increased waterlogging.

Given the above, the proposed clearing is not likely to be at variance to this clearing Principle.

Methodology **References:**
Keighery (1994)
Schoknecht et al. (2004)

GIS Datasets:
Salinity risk
Water erosion risk
Eutrophication risk
Wind erosion risk
Waterlogging risk
Land Systems

(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.

Comments **Proposed clearing is at variance to this Principle**
The application area forms part of a north-south and east-west ecological linkage, defined by the South West Regional Ecological Linkage Report (Molloy et al., 2009). The vegetation under application is defined as 1a as it is connected to the linkage. These linkages connect the application area to Coolilup State Forest, 300 metres to the west, and Capel Nature reserve, approximately 2.6 kilometres to the north.

Ecological linkages of vegetation between larger areas of conservation value are important for enabling fauna to continue to move through the landscape and between reserves. This is vital both for species that are nomadic and for maintaining populations of less mobile species that may otherwise become locally extinct in individual reserves. Remnant patches within the vicinity of large contiguous areas of native vegetation (outliers) are more likely to support wildlife than more isolated patches – with greater separation distances fewer species will have the mobility necessary to maintain access (DER, 2014).

When core habitat reserves are isolated from one another by human land uses, the diversity of native species generally declines and the probability of species extinction increases. Ecological linkages and buffers contribute to the functioning and viability of existing conservation estate by establishing connectivity between conservation areas and other areas of native vegetation, contributing to the maintenance or restorability of one or more key ecological processes required to sustain the conservation areas (DER, 2014).

A restrictive covenant is present over the application area in order to protect native vegetation by preventing clearing, grazing and to maintain it for conservation.

Given the above, the proposed clearing is likely to impact ecological linkages, have an impact on the environmental values of nearby conservation areas and is at variance to this clearing Principle.

Methodology **References:**
DER (2014)
Molloy et al. (2009)

(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.

Comments Proposed clearing is not likely to be at variance to this Principle

The south western portion of the application area (approximately 0.6 hectares) falls within a mapped multiple use palusplain wetland. Vegetation under application falls approximately 100 metres from the Ludlow River and within 50 metres of an area mapped as subject to inundation. The vegetation within the mapped multiple use palusplain wetland is in a completely degraded (Keighery, 1994) condition consisting of isolated paddock trees and intermittent patches of a wetland species *Juncus* sp. (DER, 2016). The area has been highly impacted by grazing.

The application area has been mapped within the following land degradation risk categories (Schoknecht et al., 2004):

- 10 to 30 per cent of map unit has a high to extreme phosphorus export risk;
- 30 to 50 per cent of the map unit has a moderate to high salinity risk or is presently saline; and
- Less than three per cent of map unit has a high to extreme water erosion risk.

Given this and its degraded (Keighery, 1994) condition, clearing the vegetation under application is not likely to lead to the deterioration of ground water or surface water through eutrophication, salinity or water erosion.

Given the completely degraded (Keighery, 1994) condition of the understorey vegetation (DER, 2016), as a vegetated buffer exists between the application area and Ludlow river and there is little to no relief across the site, clearing the vegetation under application is not likely to cause a deterioration in water quality through sedimentation.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

References:

DER (2016)
Keighery (1994)
Schoknecht et al. (2004)

GIS Datasets:

Salinity risk
Water erosion risk
Eutrophication risk

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments Proposed clearing is not likely to be at variance to this Principle

Although the application area falls within a mapped multiple use wetland, given the degraded to completely degraded (Keighery, 1994) condition of the application area and relatively small amount of clearing, it is not likely to cause or exacerbate the intensity or incidence of flooding.

The proposed clearing is not likely to be at variance to this clearing Principle.

Methodology

References:

Keighery (1994)

GIS Datasets:

Hydrography linear

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

The Ludlow River is located 100 metres north of the application area, separating the application area from Plantation Road approximately 400 metres from the application area. Along Coolilup Road reserve bounding the application area to the west is an occurrence of the TEC *Eucalyptus calophylla* woodlands on heavy soils of the southern Swan Coastal Plain.

The road in this location is a winding track that is not suitable for heavier volumes of traffic. It also crosses Ludlow River with no road infrastructure in place and would therefore, not be traversable during winter months (DER, 2016; Parks and Wildlife, 2016b). Given this, the proposed development is likely to require a new vehicle access track to the property that may require clearing vegetation not currently in line with this application. The applicant has noted that works are required along Coolilup Road (potential TEC vegetation) to maintain access.

Further information on access to the property would be required in order to fully consider the environmental impacts of the project.

The amount of clearing to be undertaken does not taken into account infrastructure bush fire protection areas which may require the clearing of vegetation not in the current application.

The proposed facility intends to aim firing away from the Ludlow River. Given the location of the proposed facility over a wetland in close proximity to the Ludlow River, the facility may lead to waterway contamination from lead accumulation. Further information on the potential contamination of the site would be required in order to define this risk.

Lots 500 and 501 are currently owned by Iluka Resources Ltd. which has authorised the development on parts of the property. A Restrictive Covenant Burden is on the certificates of title and covers the entirety of both lots. This covenant restricts the clearing or damage to any native vegetation, including grazing. The applicant has advised that the City of Busselton may be amenable to amending this covenant if the proposed works have a benefit to the environmental values of the property.

The City of Busselton has advised that the covenant was put in place as part of a subdivision of the area in order to maintain the environmental values of the property (in particular around the Ludlow River). The City of Busselton is currently reviewing the covenant with the aim of removing it from areas of the property that do not currently contain high environmental values. Planning approval from the City of Busselton is likely to be required prior to a clearing permit being granted.

The application area forms part of a significant remnant along the Ludlow River. It has been mapped as high value WRP habitat (Shedley and Williams, 2014) and part of both a north-south and east-west ecological linkage (Molloy et. al., 2009). Given this it is significant in the movement of fauna across the landscape and may contain a significant population of WRPs. The gun noise from the proposed facility may indirectly impact on the values of this remnant by altering animal behaviour (Parks and Wildlife, 2016b). The applicant has proposed planting 350 trees south of the site as a wind and noise break however, this will not mitigate the impacts to fauna utilising the vegetated linkages north of the application area.

DER wrote to the applicant on 29 April 2016, advising that the preliminary assessment had identified a number of significant environmental impacts associated with the proposed clearing and inviting the applicant to provide further information in respect to these matters within 30 days. On 30 June 2016, the applicant requested an extension of time in order to complete a bush fire assessment, as required by the City of Busselton. The area required to be cleared may change as a result of the bush fire assessment.

No Aboriginal Sites of Significance have been mapped within the application area.

No submissions have been received in relation to this application.

It is open to the applicant to reapply for a clearing permit once the identified environmental impacts as well as planning and other matters have been addressed.

Methodology

References:

DER (2016)
Molloy et. al. (2009)
Parks and Wildlife (2016b)
Shedley and Williams (2014)

GIS Datasets:

Aboriginal Sites of Significance

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DEC (2012) Chuditch (*Dasyurus geoffroii*) Recovery Plan. Wildlife Management Program No. 54. Department of Environment and Conservation, Perth, Western Australia.
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