Government of Western Australia
Department of Environment Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6788/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: DR and PB Smallwood

1.3. Property details

Property: LOT 1740 ON DEPOSITED PLAN 208028, MERIVALE
Local Government Authority: ESPERANCE, SHIRE OF
DER Region: SOUTH COAST
DPaW District: ESPERANCE
Localities: MERIVALE

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
400		Mechanical Removal	Grazing & pasture

1.5. Decision on application

Decision on Permit Application: Refused
Decision Date: 30 May 2016
Reasons for Decision: The applicant has applied to clear 400 hectares of native vegetation.

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and it has been concluded that the proposed clearing is seriously at variance to (g), at variance to (a), (b), (f) and (i), may be at variance to (c), (d), (e) and (h), and is not likely to be at variance to (i).

The applicant was afforded the opportunity to provide further advice in respect to the significant environmental impacts associated with the proposed clearing identified in DER's preliminary assessment. The applicant's response to DER's letter indicated a view that DER's assessment findings are unjustified and unreasonable, and providing reasons supporting this view. The applicant's response was considered in the context of this assessment.

The Delegated Officer determined that the proposed clearing will cause appreciable land degradation in the forms of salinity, waterlogging and wind erosion. The Delegated Officer considered that the application area includes significant habitat for indigenous fauna including conservation significant species, vegetation associated with waterways, and may include and priority flora species and a threatened ecological community, and that the proposed clearing is likely to cause deterioration in the quality of surface water through salinity and changes to local hydrology, and may impact conservation areas.

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
Mapped Beard vegetation association 7048 is described as Shrublands; banksia scrub-heath on coastal plain in the Esperance Plains Region (Shepherd et al, 2001).	The application is to clear up to 400 hectares of native vegetation within Lot 1740 on Deposited Plan 208028 (Esperance Location 1740), Merivale, for the purpose of pasture and grazing.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994) To Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery	The condition and description of the vegetation was determined by a review of aerial imagery and a site inspection undertaken by Department of Environment Regulation (DER) officers on 21 October 2015 (DER, 2015). The site inspection (DER, 2015) identified the application area comprises: • non-wetland areas dominated by *Nuytsia floribunda*, *Lambertia inermis* (chittick) and *Xanthorrhoea sp.* These areas support dense understorey vegetation with high diversity of species and wildflowers. *Allocasuarina sp.* is found in some areas. • creekline and wetland areas dominated by

1994)

Melaleuca sp., sedges and dense thicket vegetation. The applicant has endeavoured to design the application area to avoid these areas and has advised these areas will not be cleared (Smallwood, 2015).

- sandy rises dominated by *Banksia speciosa*. The applicant has endeavoured to design the application area to avoid these areas and has advised these areas will not be cleared and will be fenced off (Smallwood, 2015).

At the time of the DER inspection, the vegetation within the southern half of the property, including the application area, was predominantly in excellent (Keighery 1994) condition, with some small areas showing signs of disturbance (DER 2015). The vegetation was burnt in a bushfire which was first reported on 15 November 2015. The Department of Parks and Wildlife (2016a and 2016b) advised that the vegetation will regenerate after the fire, and regain its biodiversity values as part of the natural succession cycle.

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 at variance to this Principle

The application is to clear 400 hectares of native vegetation within Lot 1740 on Deposited Plan 208028, Merivale, for the purpose of grazing and pasture.

In November 2015 the application area was burnt in a bushfire. Vegetation communities have the ability to regenerate following natural disturbance events such as fire and with time the environmental values of the application area are likely to return. Therefore, taking into consideration the vegetation's ability to regenerate, the following assessment is based on its pre-fire condition.

Lot 1740 is a 974 hectare property that is approximately 66 per cent vegetated, with a 618 hectare remnant in the southern half of the property and three small (six, six and 12 hectares respectively) vegetated patches within the plantation in the northern half of the property. Approximately two thirds of the 618 hectare remnant is proposed to be cleared and the shape of the proposed clearing area would result in the remaining 218 hectares of vegetation being fragmented into numerous smaller patches. This would expose the remaining vegetation to edge effects and reduce its long term viability.

The application area is located within a mapped nationally listed threatened ecological community (TEC) known as 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Kwongkan Shrublands). The Kwongkan Shrublands occur within a global hotspot of biodiversity which is home to an array of unique plant species, and provides habitat for a number of native fauna species (TSSC 2014). The Kwongkan Shrublands is listed as an endangered TEC under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and has been afforded Priority 3 conservation status by the Western Australian Department of Parks and Wildlife (Parks and Wildlife). Although the application area is wholly contained within the mapped extent of the Kwongkan Shrublands TEC, the Commonwealth Department of the Environment (DotE) noted that detailed mapping of this community is not available, and ground truthing is required to verify if a site meets the criteria to be described as the TEC (Commonwealth of Australia, 2013).

A Department of Environment Regulation (DER) site visit on 21 October 2015 noted the majority of the vegetation under application is dominated by *Nuytsia floribunda*, *Lambertia inermis* (chittick) and *Xanthorrhoea sp.* over dense, species rich understorey (DER, 2015). This vegetation type showed little sign of disturbance and was in excellent (Keighery, 1994) condition (DER, 2015). Parks and Wildlife (2016a) advised that this Proteaceous kwongkan vegetation will regenerate strongly and provide biodiversity values as fire is part of the natural cycle of this vegetation community.

Three rare and 17 priority flora species have been recorded in the local area (20 kilometre radius). Of these, two rare and 13 priority species records are located within 10 kilometres of the application area on the same combination of mapped vegetation and soil types as found within the application area. Based on this, it is considered that the application area may contain suitable habitat for flora of conservation significance.

There are records of sixteen rare and five priority fauna species in the local area (Parks and Wildlife, 2007-). Of

these, the proposed clearing has the potential to impact most significantly on Carnaby's cockatoo (*Calyptorhynchus latirostris*) and Australasian bittern (*Botaurus poiciloptilus*), both listed endangered under the *Wildlife Conservation Act 1950* and Commonwealth EPBC Act. Regional officer-level advice from Parks and Wildlife (2016b) indicated that suitable habitat for these species occurs on site and the vegetation proposed to be cleared is considered to be significant feeding habitat for Carnaby's cockatoo.

The application area is adjacent to Crown reserve 28170 which is planned for inclusion into Cape Le Grand National Park (Parks and Wildlife, 2016c). The current edge of the National Park is approximately seven kilometres south of the application area, however the application area is contiguous with the native vegetation in the National Park.

Soil disturbance and removal of native vegetation increases the risk of weeds and pathogens, such as the introduction or spread of *Phytophthora* species dieback. This may impact vegetation in the areas proposed to be retained around the watercourses, wetlands and sandy rises on the property. It may also lead to deterioration of the vegetation within the neighbouring Crown reserve which contains important breeding habitat for Australasian bittern and the Kwongkan Shrublands TEC, both of which are threatened by dieback.

The application area is within 'Zone A' of a macro habitat corridor defined in the Western Australian South Coast Macro Corridor Network (Wilkins et al, 2006). Vegetation within Zone A "potentially form the most strategic link between major protected areas" (Wilkins et al, 2006). It is considered that the application area is likely to be important for the maintenance of the macro habitat corridor, and that the clearing of large areas of native vegetation will increase the landscape fragmentation and decrease the effectiveness of the macro habitat corridor.

On the basis of the presence of habitat for conservation significant fauna species, the likely occurrence of a TEC, potential habitat for rare and priority flora and the connectivity to conservation estate, it is considered that the application area comprises an area of high biodiversity.

In response to environmental concerns raised by DER in respect to this principle, the applicant submitted that:

- black cockatoos forage within a pine plantation on Merivale Road, however over the past 40 years there have been no black cockatoo sightings within the application area or adjacent agricultural land;
- the Australasian bittern does not occur within the application area;
- the local area is more than 70 per cent developed for agricultural purposes, that the application area had been grazed by stock and subsequently used as a plantation until approximately 20 years ago, and that the likelihood of rare or priority flora is debatable;
- the Kwongkan Shrublands TEC is not delineated on any map;
- the proposed clearing of 400 hectares located adjacent to a Crown reserve estimated to be 56,000 hectares in area is unlikely to increase landscape fragmentation and decrease the effectiveness of a macro habitat corridor

Extent mapping of this TEC is available on the Commonwealth DotE's website at:
https://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=126&status=Endangered

Taking into account the applicant's additional advice, it is considered that based on the extent of conservation areas at a regional scale the impact of the proposed clearing to the macro habitat corridor might not be perceived as significant. However it is considered that the application area is of a substantial size, and includes significant habitat for indigenous fauna. It is considered that there is insufficient evidence to confirm whether or not rare and priority flora species or the TEC are present within the application area, however noting vegetation and soil types present there is a possibility that these species and community may be present within the application area. Based on this it is considered that the application area comprises an area of high biodiversity.

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

Methodology

References:
Commonwealth of Australia (2013)
DER (2015)
Keighery (1994)
Parks and Wildlife (2007-)
Parks and Wildlife (2016a)
Parks and Wildlife (2016b)
Parks and Wildlife (2016c)
TSSC (2014)
Wilkins et al (2006)

GIS Databases:
- SAC bio datasets accessed January 2016

(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
The vegetation under application is mapped as banksia scrub-heath on coastal plain in the Esperance Plains

Region (Shepherd et al, 2001), and is in predominantly excellent (Keighery, 1994) condition (DER, 2016).

The application area is within 'Zone A' of a macro habitat corridor defined in the Western Australian South Coast Macro Corridor Network (Wilkins et al, 2006). Vegetation within Zone A "potentially form the most strategic link between major protected areas" (Wilkins et al, 2006). It is considered that the application area is likely to be important for the maintenance of the macro habitat corridor, and that the clearing of large areas of native vegetation will increase the landscape fragmentation and decrease the effectiveness of the macro habitat corridor.

There are records of sixteen rare and five priority fauna species in the local area (20 kilometre radius) (Parks and Wildlife, 2007-). Five of these species are short range endemic invertebrates that are unlikely to be significantly impacted by the proposed clearing. A further eleven species are associated with habitats that include permanent standing water, marine environments or rock cliffs. As these habitat types do not occur within the application area, these species are unlikely to be significantly impacted by the proposed clearing.

The application area may include suitable habitat for the following fauna species recorded in the local area: Carnaby's cockatoo (*Calyptorhynchus latirostris*), Australasian bittern (*Botaurus poiciloptilus*) and western ground parrot (*Pezoporus flaviventris*) listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act), and quenda (*Isoodon obesulus* subsp. *fusciventer*) and Tammar wallaby (*Macropus eugenii* subsp. *derbianus*) listed as priority 5 (Parks and Wildlife, 2007-).

Carnaby's cockatoo is listed as endangered under the WC Act and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This species was once abundant in Western Australia; however since the late 1940s it 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 (Saunders, 1990; Saunders and Ingram, 1998; Shah 2006; Garnett et al, 2011). There are two confirmed Carnaby's cockatoo roost sites approximately 20 kilometres west of the application area, and Regional officer-level advice from Parks and Wildlife (2016b) indicated that the species is known to forage across the local area, with its range extending up to 100 kilometres east of Esperance. Carnaby's cockatoo forages on the seeds, nuts and flowers of a large variety of plants including proteaceous (*Banksia*, *Hakea* and *Grevillea* species) and eucalyptus species, *Allocasuarina* species, marri (*Corymbia calophylla*), and a range of introduced species (Valentine and Stock, 2008). Although the applicant has advised the banksia vegetation on sandy rises will be fenced off and not be cleared or developed (Smallwood, 2015), the majority of the 400 hectare application area contains chittick (*Lambertia inermis*), which Regional officer-level advice from Parks and Wildlife (2016b) indicated provides feeding habitat for Carnaby's cockatoo. Based on the extent and predominantly excellent (Keighery, 1994) condition of feeding habitat within the application area, the vegetation proposed to be cleared is considered significant feeding habitat for Carnaby's cockatoo.

The Australasian bittern is listed as endangered under the EPBC Act. It has a preference for densely vegetated wetlands and favours permanent and seasonal freshwater habitat (DotE, 2016). Regional officer-level advice from Parks and Wildlife (2016a) indicated that Big Boom Swamp, located approximately 5.5 kilometres south-east of the application area, is known as a significant Australasian bittern site. The Australasian bittern's distribution in Australia is severely fragmented due to its narrow habitat preferences and the ongoing loss or alteration of suitable habitat (DotE, 2016). In southwestern Australia, salinisation of inland swamps due to vegetation clearing has resulted in these swamps becoming unsuitable for the Australasian bittern (Jaensch, 2004). Aerial imagery indicates numerous damp areas scattered throughout the application area and Regional officer-level advice from Parks and Wildlife (2016b) indicated that suitable habitat for this species may occur within the application area. A fauna survey would be required in order to determine the significance of impacts to this species.

The application area may contain suitable habitat for quenda and Tammar wallaby and the proposed clearing may impact local populations. However considering the extent of suitable habitat in the neighbouring Crown reserves, it is unlikely to impact the conservation status of these Priority 5 species.

Regional officer-level advice from Parks and Wildlife (2016b) indicated the proposed clearing is not likely to have any bearing for western ground parrot as this bird has not been detected in the area for over ten years and is now only known from Cape Arid and Fitzgerald River National Parks.

Based on the above, it is considered that the application area includes significant habitat for fauna indigenous to Western Australia.

In response to environmental concerns raised by DER in respect to this principle, the applicant submitted that:

- black cockatoos forage within a pine plantation on Merivale Road, however over the past 40 years there have been no black cockatoo sightings within the application area or adjacent agricultural land;
- the Australasian bittern does not occur within the application area;
- the proposed clearing of 400 hectares located adjacent to a Crown reserve estimated to be 56,000 hectares in area is unlikely to increase landscape fragmentation and decrease the effectiveness of a macro habitat corridor; and
- populations of kangaroos and emus regularly graze on agricultural land.

Taking into account the applicant's additional advice, it is considered that based on the extent of conservation areas at a regional scale the impact of the proposed clearing to the macro habitat corridor might not be perceived as significant. However it is considered that the application area is still of a substantial size and

includes foraging habitat for Carnaby's cockatoo, and noting the likelihood of appreciable land degradation in the forms of salinity, waterlogging and wind erosion it is still considered that the proposed clearing may have an impact on the functionality of the macro habitat corridor.

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

Methodology

References:
DotE (2016)
Garnett et al (2011)
Jaensch (2004)
Keighery (1994)
Parks and Wildlife (2007-)
Parks and Wildlife (2016b)
Saunders (1990)
Saunders and Ingram (1998)
Shah (2006)
Smallwood (2015)
Valentine and Stock (2008)
Wilkins et al (2006)

GIS Databases:
- Carnaby's cockatoo confirmed roost sites
- SAC bio datasets accessed January 2016

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

Comments

Proposed clearing may be at variance to this Principle
Three rare flora species have been mapped within the local area (20 kilometre radius).

The closest mapped record of rare flora is located approximately 12 kilometres south of the proposed clearing area, within Cape Le Grand National Park. This species is listed as endangered under the *Wildlife Conservation Act 1950* (WC Act) and federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and has been recorded in the local area twelve times. The nearest record is mapped within the same vegetation type as found within the application area. This species has been recorded from a variety of soil types including grey sand, granite rock crevices and steep slope dark brown granite loam. Commonwealth Conservation Advice for this species reported that it has been recorded along a watercourse (TSSC, 2008a). Soils of the application area appear to be grey sand (DER, 2015). Based on the soil type within the application area, it is considered that the vegetation under application may include suitable habitat for this species.

The second rare flora species is listed as critically endangered under the WC Act and endangered under the EPBC Act. It has been recorded in the local area 23 times with the nearest record approximately 13 kilometres from the application area. This record occurs on the same mapped vegetation and soil type as the application area and has been found on a variety of soil types including white-grey sand. It is reported to occur within coastal heath vegetation (TSSC, 2008b). Based the habitat types within the application area, it is considered that the vegetation under application may include suitable habitat for this species.

The third species of rare flora is known from different vegetation and soil types as those mapped within the application area, and is therefore unlikely to be impacted by the proposed clearing.

Regional officer-level advice from Parks and Wildlife (2016b) indicated that an additional critically endangered rare flora species has been recorded approximately three kilometres from the application area, on the same combination of mapped vegetation and soil types as found within the application area. Based on this, it is considered that suitable habitat for this species may occur within the application area.

Taking into consideration the vegetation's ability to regenerate post-bushfire, the extent of the proposed clearing and the condition of the vegetation under application, it is considered that the application area may include rare flora.

In response to environmental concerns raised by DER in respect to this principle, the applicant submitted that the local area is more than 70 per cent developed for agricultural purposes, that the application area had been grazed by stock and subsequently used as a plantation until approximately 20 years ago, and that the likelihood of rare or priority flora is debatable.

Taking into account the applicant's additional advice, it is considered that there is insufficient evidence to confirm whether or not rare flora is present within the application area, however noting vegetation types present there is a possibility that rare flora may be present.

Given the above, the proposed clearing may be at variance to this principle.

Methodology

References:
DER (2015)

Keighery (1994)
Parks and Wildlife (2016a)
Parks and Wildlife (2016b)
TSSC (2008a)
TSSC (2008b)

GIS Databases:
- SAC bio datasets accessed January 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 may be at variance to this Principle

The application area is located within the mapped extent of a nationally listed threatened ecological community (TEC) known as 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Kwongkan Shrublands). This TEC is listed as endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. In Western Australia, the ecological community has been afforded Priority 3 conservation status by Parks and Wildlife.

The Kwongkan Shrublands is predominantly located within the Esperance Sandplains and Mallee bioregions. The community typically occurs on sandplains, occupying lower and upper slopes and ridges, as well as uplands, where rainfall ranges from 400 to 800 millimetres a year. It largely occurs on duplex soils and deep to shallow soils on the sandplains (TSSC, 2014).

Kwongkan Shrublands are dominated by plants from the family Proteaceae, including plants from the genera *Adenanthos*, *Banksia*, *Grevillea*, *Hakea*, *Isopogon* and *Lambertia* (TSSC, 2014). *Banksia speciosa* and *Lambertia inermis* are two species listed as plant species likely to occur within this TEC (TSSC, 2014) and have both been identified on site (DER, 2015).

The Kwongkan Shrublands occur within a global hotspot of biodiversity which is home to an array of unique plant species, and provides habitat for a number of native fauna species. In total, fifty-four plant and eighteen animal species that are listed as threatened, either by the state or nationally, are known to occur within the Kwongkan Shrublands (TSSC, 2014).

The community has a fragmented geographic distribution whereby a significant portion of its mapped distribution has been lost, with remaining areas left vulnerable to the impacts of land clearing, dieback, changing fire regimes, climate change and invasive species (TSSC, 2014). The community is intolerant of frequent disturbance due to land modification and clearance, and the intention of the community's listing as a TEC is to protect it from further fragmentation.

Although the application area is wholly contained within the mapped extent of the Kwongkan Shrublands TEC, the Commonwealth Department of the Environment noted that detailed mapping of this community is not available and ground-truthing is required to verify if the vegetation meets the criteria to be the TEC (Commonwealth of Australia, 2013). A site inspection identified that the application area is dominated by flowering shrub species from the Proteaceae family (DER, 2015), therefore it is considered that the application area is likely to include the Kwongkan Shrublands TEC.

Should the Kwongkan Shrublands nationally listed TEC occur on site, as mapped, the proposed clearing of 400 hectares of native vegetation in predominantly excellent (Keighery, 1994) condition, would increase fragmentation locally and contribute towards the continued degradation of this TEC.

In addition, soil disturbance and removal of native vegetation increases the risk of weeds and pathogens, such as the introduction or spread of *Phytophthora* species dieback. Therefore vegetation in the areas proposed to be retained around the watercourses, wetlands and sandy rises on the property may be indirectly impacted. The proposed clearing may also lead to deterioration of adjacent vegetation within the neighbouring Crown reserve which also contains this TEC.

In response to environmental concerns raised by DER in respect to this principle, the applicant submitted that the Kwongkan Shrublands TEC is not delineated on any map.

Extent mapping of this TEC is available on the Commonwealth Department of the Environment's website at: https://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=126&status=Endangered

Taking into account the applicant's additional advice, it is considered that there is insufficient evidence to confirm whether or not the TEC is present within the application area, however noting vegetation types present there is a possibility that this TEC may be present within the application area.

Given the above, the proposed clearing may be at variance to this principle.

Methodology

References:
Commonwealth of Australia (2013)
DER (2015)
Keighery (1994)

Parks and Wildlife (2016a)
Parks and Wildlife (2016b)
TSSC (2014)

GIS Databases:
- SAC bio datasets accessed January 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 may be at variance to this Principle

The application area is located within the Esperance Plains Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 51 per cent of the pre-European vegetation extent remains (Government of Western Australia, 2014).

The vegetation under application is mapped as Beard vegetation association 7048, which has 78 per cent of its pre-European extent remaining in the Esperance Plains IBRA Bioregion (Government of Western Australia, 2014).

The application area is located within the Shire of Esperance, which retains approximately 72 per cent of its pre-European vegetation extent (Government of Western Australia, 2014).

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). On the basis that the native vegetation types and extents present within the application area, the local government and the IBRA bioregion retains more than 30 per cent representation, it is considered that the vegetation under application is not located within an extensively cleared area.

Although not located within an extensively cleared area, the application area is within 'Zone A' of a macro habitat corridor defined in the Western Australian South Coast Macro Corridor Network (Wilkins et al, 2006). Vegetation within Zone A "potentially form the most strategic link between major protected areas" (Wilkins et al, 2006). It is considered that the application area is likely to be important for the maintenance of the macro habitat corridor, and that the clearing of large areas of native vegetation will increase the landscape fragmentation and decrease the effectiveness of the macro habitat corridor. On this basis, it is considered that the vegetation under application is significant as a remnant.

Given the above, the proposed clearing may be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Esperance Plains	2,899,940	1,495,049	51	54
Local government*				
Shire of Esperance	4,459,670	3,211,004	72	30
Beard Vegetation Association in Bioregion*				
7048	134,614	106,268	78	82

Methodology

References:
Commonwealth of Australia (2001)
*Government of Western Australia (2014)
Wilkins et al (2006)

GIS Databases:
- SAC bio datasets accessed January 2016
- NLWRA, Current Extent of Native Vegetation

(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

Numerous swamps are mapped adjacent and nearby to the application area. Aerial imagery indicates numerous damp areas and drainage lines within the application area, and soil subsystem mapping identifies approximately 6.5 hectares in the north-east corner of the application area as "paperbark swamp".

The applicant advised that the application area was designed to avoid the swampy areas on the property and has advised swamps will not be developed (Smallwood, 2015).

A DER (2015) site inspection identified areas of vegetation growing in association with drainage lines and swamp areas within the application area. A land degradation assessment conducted for the Commissioner of Soil and Land Conservation (CSLC) noted the land generally occupies the lower slope positions in the landscape and that the application area has several defined waterways with areas that are not well drained, with ponding and inundation occurring in these areas during the wetter seasons (CSLC, 2016).

Based on the above, it is considered that the vegetation under application includes vegetation growing in association with wetlands and watercourses.

In addition to direct clearing of riparian vegetation, the proposed clearing may result in indirect impacts to adjacent native vegetation growing in association with a wetland or watercourse. Noting the extent of the proposed clearing, it is likely the proposed loss of vegetation will lead to altered local hydrology, such as increased water flow and depth. The CSLC advised that the proposed clearing is also likely to result in secondary salinity (CSLC, 2016).

Soil disturbance and removal of native vegetation increases the risk of weeds and pathogens, such as the introduction or spread of *Phytophthora* species dieback. It is considered, therefore, that the proposed clearing may indirectly impact vegetation in the areas proposed to be retained around the watercourses and wetlands on and adjacent to the property.

In response to environmental concerns raised by DER in respect to this principle, the applicant submitted that:
- waterways and areas with paperbarks, and potential future problem areas identified during development, are not intended to be cleared; and
- a bluegum plantation has had an effect on local hydrology, and was due to be harvested in December 2015 if not burnt in the November 2015 fires.

Taking into account the applicant's additional advice, and noting that the application area includes vegetation growing in association with drainage lines and swamp areas, it is considered that the vegetation under application includes vegetation growing in association with wetlands and watercourses.

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

Methodology

References:
CSLC (2016)
DER (2015)
Smallwood (2015)

GIS Databases:
- Hydrography, hierachy
- Hydrography, linear
- Soils subsytems

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

Comments

Proposed clearing is seriously at variance to this Principle

The application area is mapped as six soil landscape map units. The Commissioner of Soil and Land Conservation (CSLC) advised these map units include areas of poorly drained winter wet flats, longitudinal dunes, undulating and level plain. The soils are mainly derived from quaternary Aeolian sands and support a mixture of *Melaleuca*, *Nuytsia*, *Banksia* and proteaceous shrubland and low closed forest vegetation (CSLC, 2016). Approximately two thirds of the application area occurs within the Gore 4G5 Phase (map unit 245Go_4G5) and Gore 4G3c Phase (map unit 245Go_4G3c).

Map unit 245Go_4G5 is described as 'poorly drained winter-wet flats with less than one per cent slope, on quaternary Aeolian sands over sediments in the grey, duplex saline soil (Mullet)' (CSLC, 2016). This soil type is mapped over approximately one third of the application area. A land degradation assessment report states that, while no salinity was observed on site, the extent of any existing salinity is unclear as the vegetation was completely burnt at the time of inspection (CSLC, 2016). Seventy-five per cent of this map unit has a high risk of salinity or is presently saline and the land degradation assessment report indicated some areas of lesser vegetation around areas of inundation, which may indicate secondary salinity (CSLC, 2016). The CSLC (2016) advised clearing vegetation within this map unit has a high risk of salinity causing land degradation and that significant change is expected with extensive clearing.

The CSLC (2016) advised that 85 per cent of the map unit 245Go_4G5 has a high to very high risk of waterlogging. A land degradation assessment report states the application area has several defined waterways with areas that are not well drained and that ponding and inundation occurs in these areas during the wetter seasons (CSLC, 2016). Desktop mapping indicated areas of inundation which have general poor drainage due to lack of slope and most likely a shallow/perched water table (CSLC, 2016). Clearing of significant areas of vegetation within this map unit has a high risk of increasing waterlogging (CSLC, 2016). The proposed

extensive clearing is expected to result in significant change and the risk of waterlogging causing land degradation is high (CSLC, 2016).

Map unit 245Go_4G3c is described as 'longitudinal dunes with two to six per cent slope on quaternary Aeolian sands over sediments in the deep uniform sand (Corinup)' (CSLC, 2016). Fifty per cent of this map unit has a very high risk of wind erosion. This soil type is mapped over approximately one third of the application area. The land degradation assessment (CSLC, 2016) report advised the risk of wind erosion on this soil type is very high and that, if the land is used for livestock, maintaining a full pasture cover in all seasons may not be possible. Therefore the risk of wind erosion causing land degradation is very high and significant change is expected if a full ground cover is not maintained (CSLC, 2016).

A land degradation assessment identified that, based on the soil landscape map units and soils identified on site, the risk of water erosion and eutrophication causing appreciable land degradation is low (CLSC, 2016).

The CSLC (2016) concluded that the areas of map unit 245Go_245 have a low capability for agriculture and also have a high risk of land degradation in the forms of salinity and waterlogging. Additionally the areas mapped as 245Go_4G3c have a very high risk of wind erosion if cleared and developed for grazing (CSLC, 2016). The CSLC advised the proposed clearing is likely to cause appreciable land degradation, and was of the view that the proposed clearing is seriously at variance to this principle (CSLC, 2016).

Based on the above, it is considered that the proposed clearing is likely to lead to significant appreciable land degradation in the forms of salinity, waterlogging and wind erosion.

In response to environmental concerns raised by DER in respect to this principle, the applicant submitted that:
- rural developments on over 5,000 hectares of land north of Fisheries Road and south of Merivale, which have similar vegetation and soil types as found within the application area, have not caused land degradation in the forms of salinity, wind erosion or water erosion; and
- very sandy rises that can be subject to soil loss, and potential future problem areas identified during development, are not intended to be cleared.

Taking into account the applicant's additional advice, and noting the significant risks identified by the CSLC, it is still considered that the proposed clearing will cause appreciable land degradation.

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

Methodology

References:
CSLC (2016)

GIS Databases:
- Hydrography, linear
- Hydrography, hierachy
- Soils, subsytems

(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 may be at variance to this Principle

Cape Le Grand National Park is located approximately seven kilometres south of the application area.

The application area is adjacent to Crown reserve 28170 (R28170), immediately south. Crown reserve R28170 is identified in the recently released 'Esperance and Recherche parks and reserves management plan 84' for future inclusion into Cape Le Grand National Park (Parks and Wildlife 2016c).

The current edge of the Cape Le Grand National Park is approximately seven kilometres south of the application area and the proposed clearing is unlikely to directly impact on the National Park, however the application area is contiguous with the native vegetation in the National Park through Crown reserve 28170.

The application area is within 'Zone A' of a macro habitat corridor defined in the Western Australian South Coast Macro Corridor Network (Wilkins et al, 2006). Vegetation within Zone A "potentially form the most strategic link between major protected areas" (Wilkins et al, 2006). It is considered that the application area is likely to be important for the maintenance of the macro habitat corridor, and that the clearing of large areas of native vegetation will increase the landscape fragmentation and decrease the effectiveness of the macro habitat corridor.

Soil disturbance and removal of native vegetation increases the risk of weeds and pathogens, such as the introduction or spread of *Phytophthora* species dieback. The proposed clearing may lead to the deterioration of the vegetation within Crown reserve R28170 and a macro habitat corridor. On this basis, it is considered that the proposed clearing may have an impact on the environmental values of adjacent or nearby conservation areas.

In response to environmental concerns raised by DER in respect to this principle, the applicant submitted that:
- the proposed clearing of 400 hectares located adjacent to a Crown reserve estimated to be 56,000

hectares in area is unlikely to increase landscape fragmentation and decrease the effectiveness of a macro habitat corridor; and
- *Phytophthora* sp. Dieback has not been identified within the application area or in the bluegum plantation, but could be spread by kangaroos, emus and other animals and vehicles travelling between Crown lands and agricultural lands.

Taking into account the applicant's additional advice, it is considered that based on the extent of conservation areas at a regional scale the impact of the proposed clearing to the macro habitat corridor might not be perceived as significant. However it is considered that the application area is of a substantial size, and noting the likelihood of appreciable land degradation in the forms of salinity, waterlogging and wind erosion it is still considered that the proposed clearing may have an impact on the environmental values of adjacent or nearby conservation areas.

Given the above, the proposed clearing may be at variance to this principle.

Methodology

References:
Parks and Wildlife (2016c)
Wilkins et al (2006)

GIS Databases:
- NLWRA, Current Extent of Native Vegetation
- Parks and Wildlife Tenure
- SAC bio datasets accessed January 2016

(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 at variance to this Principle

Aerial imagery indicates numerous damp areas and drainage lines across the application area and the soil subsystem mapping identifies approximately 6.5 hectares in the northeast corner of the application area as "paperbark swamp". A DER site inspection (2015) identified vegetation growing in association with drainage lines and swamp areas within the application area. There are also numerous swamps mapped adjacent and nearby to the application area.

A land degradation assessment (CSLC, 2016) conducted for the Commissioner of Soils and Land Conservation (CSLC) advised the land generally occupies the lower slope positions in the landscape and that the application area has several defined waterways with areas that are not well drained. Ponding and inundation occurs in these areas during the wetter seasons (CSLC, 2016).

Approximately one third of the application area is mapped as soil type map unit 245Go_4G5 and 75 per cent of this map unit has a high risk of salinity or is presently saline. A land degradation assessment report states that, while no salinity was observed on site, the extent of any existing salinity is unclear as the vegetation was completely burnt at the time of inspection (CSLC, 2016). The report also advised desktop mapping indicates some areas of lesser vegetation around areas of inundation, which may indicate the presence of secondary salinity (CSLC, 2016). The CSLC (2016) advised that clearing vegetation within this map unit has a high risk of salinity causing land degradation and that significant change is expected with extensive clearing. Therefore the proposed clearing is also likely to result in deterioration of water quality through increased salinity.

The extent of the proposed clearing is likely to lead to changes in local hydrology, such as increased water flow and depth. In addition, one third of the application area is mapped as soil type 245Go_4G5, which has high to very high risk of waterlogging over 85 per cent of the map unit. The land degradation assessment report advised the application area has several defined waterways with areas that are not well drained and that ponding and inundation occurs in these areas during the wetter seasons (CSLC, 2016). Desktop mapping indicated areas of inundation which have general poor drainage due to lack of slope and most likely a shallow/perched water table (CSLC, 2016). Clearing of significant areas of vegetation within this map unit has a high risk of increasing waterlogging (CSLC, 2016). As waterlogging increases surface water flow, this is likely to exacerbate the effect of salinity causing deterioration in surface water quality.

The CSLC land degradation assessment (CLSC 2016) identified that, based on the soil landscape map units and soils identified on site, the risk of water erosion and eutrophication is low. Therefore the proposed clearing is considered unlikely to result in the deterioration of water quality through sedimentation or eutrophication.

Noting the extent of the proposed clearing and the CSLC's advice, it is considered that the proposed clearing will lead to degradation of groundwater and surface water quality through increased salinity and changes to local hydrology.

In response to environmental concerns raised by DER in respect to this principle, the applicant submitted that:
- waterways and areas with paperbarks, and potential future problem areas identified during development, are not intended to be cleared; and
- a bluegum plantation has had an effect on local hydrology, and was due to be harvested in December 2015 if not burnt in the November 2015 fires.

Taking into account the applicant's additional advice, and noting the risks identified by the CSLC, it is still considered that the proposed clearing will lead to degradation of groundwater and surface water quality.

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

Methodology References:
CSLC (2016)
DER (2015)

GIS Databases:
- Hydrography, linear
- Hydrography, hierachy

(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**
The annual rainfall of the area is relatively low (700 millimetres). A land degradation assessment report indicates that the risk of flooding within the application area is low (CSLC, 2016).

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

Methodology References:
CSLC (2016)

GIS Databases:
- Rainfall, annual

Planning instruments and other relevant matters.

Comments

The proposed clearing of 400 hectares of native vegetation within Lot 1740 on Deposited Plan 208028, Merivale, is for the purpose of pasture and grazing.

The applicant lodged a notice of intent to clear 240 hectares of native vegetation within the south-east portion of the application area, and advice provided by the Western Australian Department of Agriculture on 21 August 1990 made no objection to the proposed development. The applicant advised that development of the area did not occur (Smallwood, 2015).

The application was advertised in *The Western Australian* newspaper on 28 December 2015 for a 21-day submission period. Two submissions have been received from the public, objecting to this clearing permit application. The submissions identify a number of environmental impacts of the proposed clearing (Submission, 2016a; Submission, 2016b). These concerns have been addressed under principles (a), (b), (c), (g) and (h).

The application area is zoned general agriculture under the Shire of Esperance's town planning scheme. The Shire of Esperance (2016) advised an application for Planning Approval would need to be made for the proposed clearing and that, to date, no application has been received from the landowner. The Shire identified a number of potential environmental impacts with the proposed clearing (Shire of Esperance, 2016). In subsequent correspondence received on 20 May 2016 (DER ref. A1101817), the Shire of Esperance advised that subject to recent legislative reform with the introduction of the *Planning and Development Regulations 2015*, Planning Approval would not be required for the proposed clearing.

The application area is located within the agricultural area defined in Environmental Protection Authority (EPA) Position Statement No.2 (EPA 2000), which states that significant clearing of native vegetation has already occurred on agricultural land, leading to a reduction in biodiversity and increase in land salinisation. Therefore there is a general presumption against clearing within this area for agricultural purposes (EPA, 2000). In exceptional circumstances the EPA would consider supporting clearing for agriculture within this region if:

- there are alternative mechanisms for protecting biodiversity;
- the area to be cleared is relatively small, depending on the scale at which biodiversity changes over the area, including extent of vegetation in the surrounding area and recognising that values will vary for different ecosystems;
- the proponent demonstrates that the elements set out in Section 4.3 of this Position Statement are being met; this will require extensive local and regional biodiversity work; and
- land degradation, including aquatic environments and threatening processes, such as dieback, salinisation or disruption of catchment processes, on-site and off-site would not be exacerbated.

There are no Aboriginal Sites of Significance mapped within the application area.

DER wrote to the applicant on 28 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 advice in respect to these matters (DER ref. A1089803).

The applicant's response to DER's letter indicated a view that DER's assessment findings are unjustified and unreasonable, and providing reasons supporting this view (DER ref. A1100246). The applicant advised that the property was purchased because of its location in an area with reliable rainfall, and concluded that the State government can purchase the property for a specified amount. In summary, the applicant submitted that:

- black cockatoos forage within a pine plantation on Merivale Road, however over the past 40 years there have been no black cockatoo sightings within the application area or adjacent agricultural land;
- the Australasian bittern does not occur within the application area;
- populations of kangaroos and emus regularly graze on agricultural land;
- the local area is more than 70 per cent developed for agricultural purposes, that the application area had been grazed by stock and subsequently used as a plantation until approximately 20 years ago, and that the likelihood of rare or priority flora is debatable;
- the Kwongkan Shrublands TEC is not delineated on any map;
- waterways and areas with paperbarks are not intended to be cleared;
- rural developments on over 5,000 hectares of land north of Fisheries Road and south of Merivale, which have similar vegetation and soil types as found within the application area, have not caused land degradation in the forms of salinity, wind erosion or water erosion;
- very sandy rises that can be subject to soil loss are not intended to be cleared;
- the proposed clearing of 400 hectares located adjacent to a Crown reserve estimated to be 56,000 hectares in area is unlikely to increase landscape fragmentation and decrease the effectiveness of a macro habitat corridor;
- *Phytophthora* sp. Dieback has not been identified within the application area or in the bluegum plantation, but could be spread by kangaroos, emus and other animals and vehicles travelling between Crown lands and agricultural lands;
- a bluegum plantation has had an effect on local hydrology, and was due to be harvested in December 2015 if not burnt in the November 2015 fires; and
- potential future problem areas identified during development are not intended to be cleared.

The applicant's response also raised matters considered to be beyond the scope of this assessment of the

impacts of the proposed clearing, including in relation to the State government's management of the November 2015 fires and the need for sufficient firebreaks on Crown lands adjoining agricultural lands.

The applicant's response was considered in the context of this assessment. It is considered that the proposed clearing is still likely to cause significant land degradation in the form of salinity, waterlogging and wind erosion, and continues to have unacceptable environmental impacts.

Methodology

References:
EPA (2000)
Shire of Esperance (2016)
Smallwood (2015)
Submission (2016a)
Submission (2016b)

GIS Databases:
- Aboriginal Sites Register System
- Town Planning Scheme Zones

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