Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1327/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Shire of West Arthur**

1.3. Property details

Property: LOT 14870 ON PLAN 206465 (ARTHUR RIVER 6315)
KOJONUP LOCATION 9222 (MOODIARRUP 6393)
Local Government Area: Shire Of West Arthur
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
6.7		Mechanical Removal	Miscellaneous

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
Beard Unit 4: Medium woodland; marri & wandoo ; Beard Unit 3: Medium forest; jarrah-marri ; Beard Unit 992: Medium forest; jarrah & wandoo (Eucalyptus wandoo)	Gravel Pits - Consists of intact vegetation with some edge effect due to disturbance by weed and pasture species and disturbance from existing gravel pits.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Ref: Site Visit (Dec 2005) Dinninup 1m Orthomosaic - DOLA 01 Bunbury 1m Orthomosaic - DOLA 11/00 Bridgetown 1m Orthomosaic - DOLA 01 Darkan 1m Orthomosaic - DOLA 03/01 Kojonup 1.4m Orthomosaic - DOLA 01 Wagin 1.4m Orthomosaic - DOLA 01

3. Assessment of application against clearing principles

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

Comments

Proposal may be at variance to this Principle

The vegetation within the applied area is in very good condition (Keighery, 1994; Site Visit 2005), comprising of a Medium woodland; marri & wandoo of Marri (E. calophylla), Wandoo (E. Wandoo), York Gum (E. loxophleba) and Salmon Gum (E. salmonophloia). (Shepherd, 2006; Site Visit, 2005). The biodiversity value of this area of vegetation is likely to be significant given that the applied area is part of a large remnant bush land in a highly cleared area (Area 1) and is bordered by Conservation areas to the North, West and East (Area 2) in a medium remnant of bush land in a similarly highly cleared area.

The application areas are both within the EPA Position Statement No 2 (2000) agricultural area that has been extensively cleared. This is evident when examining the local area (10km radius) which has ~12% of vegetation remaining. The position statement does not support further clearing within this area.

The areas to be cleared are 1.43% and 2.54% of the surrounding vegetation and have some disturbance from the existing gravel pits.

On this basis, the proposed clearing of the applied area maybe at variance to this principle as the vegetation may represent an area of high biodiversity in a local context.

Methodology

- Keighery (1994)
- Site Visit (2008)
- Shepherd (2006)
- EPA (2000)

GIS Database:
- Wagin 50cm Orthomosaic (Landgate06)
- Dinninup 50cm Orthomosaic (DLI2004)
- Pre-European Vegetation
- EPA Position Statement No. 2 Area
- Local Government Authorities

(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

Proposal may be at variance to this Principle

There are 2 recorded occurrences (Area 1) and 3 recorded occurrences (Area 2) of Declared Threatened Fauna within the local area (10km radius), namely Forest Red-Tailed Black Cockatoo (6.1km E, VU) and Western Brush Wallaby (10km SW, P4) of Area 1 and Western Rosella (5.9km N, VU), Tammar Wallaby (7.1km NE, P5) and Water-Rat Rakali (4.1km S, P4) of Area 2.

Of these, all are associated with Beard Vegetation Association 4 (Medium woodland; marri & wandoo) and are therefore likely to be impacted by the proposed clearing.(Beard et al, 2001)

The Forest Red-Tailed Black Cockatoo (Calyptorhynchus banksii naso) is a declared vulnerable fauna of Western Australia and favours Jarrah Forests with scattered Marri trees. C. banksii naso has also been seen feeding on Yarri, Albany Blackbutt, Karri, Sheoak, Banksia grandis and Personia longifolia. (Nature Base, 2008a)

The Western Brush Wallaby (Macropus irma) is a Priority 4 fauna of Western Australia and favours open forest or woodland. The Brush Wallaby particularly occupies open, seasonally wet flats with low grasses and open scrubby thickets, though it is also found in some areas of Mallee and Heathland but is uncommon in Karri Forest. (Maxwell et al, 1996; Nature Base, 2008b)

The Western Rosella (Platycerus icterotis xanthogenys) is a declared vulnerable fauna of Western Australia and favours Eucalypt and Sheoak woodlands and scrubs. The Western Rosella particularly occupies habitats containing Wandoo (E. wandoo), Flooded Gum, Salmon Gum (E. salmonophloia) tall Mallee and Rock Sheoak (Allocasuarina huegeliana). They are known to nest in the hollows of Marri, Wandoo, York Gum (E. loxophleba), Flooded Gum and Salmon Gum. (Saunders & Curry, 1990; Higgins, 1999) Subspecies P.i. xanthogenys is very rare and is likely to become extinct and therefore may not be destroyed under any circumstance. (Nature Base, 2008c)

The Tammar Wallaby (Macropus eugenii derbianus) is a Priority 5 fauna of Western Australia that favours thickets in Mallee and woodland. The Tammar Wallaby prefers dense, low vegetation for day time shelter and open grassy areas for feeding.(Nature Base, 2008d; Maxwell et al, 1996)

The Water-Rat (Hydromys chrysogaster) is a Priority 4 fauna of Western Australia that favours fresh brackenish water habitats. The Water-Rat or Rakali nests in constructed logs or at the ends of tunnels dug into banks. Rakali are opportunistic feeders and eat a varied diet from large aquatic insects to birds. (Nature Base, 2008e; Watts & Aslin, 1981; Braithwaite et al., 1995)

The application areas are both within the EPA Position Statement No 2 (2000) agricultural area that has been extensively cleared. This is evident when examining the local area (10km radius) which has ~12% of vegetation remaining. Therefore the value of this remnant of vegetation maybe a significant habitat for fauna indigenous to Western Australia.

The vegetation proposed to be cleared is in very good condition (Keighery, 1994; Site Visit, 2005). Clearing of this vegetation may impact the habitat of the Forest Red-Tailed Black Cockatoo and Western Brush Wallaby of Area 1 and Western Rosella (inland sp), Tammar Wallaby and Water-Rat Rakali of Area 2.

Therefore the clearing as proposed may represent a significant habitat for indigenous fauna and maybe at variance to this principle.

Methodology

References:
- Beard et al (2001)
- Nature Base (2008a)
- Nature Base (2008b)
- Nature Base (2008c)
- Nature Base (2008d)
- Nature Base (2008e)
- Maxwell et al (1996)
- Saunders & Curry (1990)
- Higgins (1999)

- Watts & Aslin (1981)
- Braithwaite et al (1995)
- EPA (2000)

GIS Database:
- SAC Bio datasets (Fauna)
- Pre-European Vegetation
- EPA Position Statement No 2 Agricultural Zone

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

Comments

Proposal is at variance to this Principle

The vegetation proposed to be cleared is mapped as Beard Vegetation Association 4. This vegetation is described as Medium woodland; Marri & Wandoo. (Beard et al., 2001) The soil type mapped for the applied area (Ub90) is described as generally rolling to hilly country with tors; lateritic mesas and buttes on some interfluve areas: chief soils are hard neutral and acidic yellow mottled soils sometimes containing ironstone gravels. Associated are variable areas of hard acidic and neutral red soils on slopes; soils containing moderate to large amounts of ironstone gravels on ridges, crests of hills, and upper slopes; and many small areas of other soils. As mapped, areas of adjoining units may be included. (Northcote et al., 2001)

Within the local area (10km radius) 3 Declared Rare Flora and 3 Priority Flora have been recorded.

Of those recorded all Declared Rare Flora and 2 of the Priority Flora do not occur on the same vegetation type as the area under application, it is therefore considered unlikely that these flora species would occur within the areas under application.

Thomasia sp Arthur River (P1) typically occurs on Sand plain in the South West and Jarrah Forest Regions. It is a shrub with Pink/Purple flowers which bloom in September. As this subspecies only occurs in the Arthur River region little is known about its preferred habitat. (Nature Base, 2008f)

The application areas are both within the EPA Position Statement No 2 (2000) agricultural area that has been extensively cleared. This is evident when examining the local area (10km radius) which has ~12% of vegetation remaining. Therefore the recorded occurrence of Thomasia sp Arthur River (P1) within the same soil and vegetation type as the applied area suggests that the value of this remnant of vegetation is significant.

The proposal is likely to be at variance to this principle due to the applied area being suitable for locally identified Priority Flora.

A flora survey is the only way to identify if Rare or Priority flora occur within the application area.

Methodology

References:
- EPA (2000)
- Northcote et al. (2001)
- Beard et al. (2001)
- Nature Base (2008f)

GIS Database:
- Pre European Vegetation
- EPA Position Statement No 2 Agricultural Zone
- Soils, statewide

(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

Proposal is not likely to be at variance to this Principle

There are no Threatened Ecological Communities (TEC) within a 10km radius of the applied area.

There are also no Priority Ecological Communities (PEC) within a 10km radius of the applied area.

The clearing as proposed is not likely to be at variance to this principle as there are no TECs or PECs associated with the applied area.

Methodology

GIS Database:
- Threatened Ecological Communities

(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

Proposal is at variance to this Principle

The vegetation within the application area is a component of Beard Vegetation Association 4 (Hopkins et al. 2001) of which there is approximately 23% of the pre-European extent remaining (Shepherd, 2006). This vegetation type is therefore greatest concern for biodiversity conservation. (Department of Natural Resources and Environment, 2002)

The local area is sparsely vegetated, of which there are 2 CALM managed lands (Nature Reserve and National Estate) within 10km of Area 1 and 1 CALM managed land (C Class Timber Reserve) bordering the North, West and East of Area 2.

The vegetation under application is comprised of a vegetation complex that isnt well represented in the Shire of West Arthur (12.3% of the pre-European extent remaining).The data suggests that the total vegetation cover of the Shire of West Arthur is sparse (27.9% of the pre-European extent remaining).

The property is also within the EPA Position Statement No 2 (2000) agricultural area that has been extensively cleared. This is evident when examining the local area (10km radius) which has ~12% of vegetation remaining. The position statement does not support further clearing within this area.

Given the pre-European extent remaining of the aforementioned vegetation association and the relatively low proportion of vegetation remaining within the local area (10km radius) the clearing as proposed is at variance to this principle.

Methodology

References:
- Hopkins et al. (2001)
- Shepherd (2006)
- Department of Natural Recourses and Environment, 2002)

GIS Database:
- Pre-European Vegetation
- Wagin 50cm Orthomosaic (Landgate06)
- Dinninup 50cm Orthomosaic (DLI2004)
- CALM managed lands
- Register of National Estate
- Local Government Authorities
- EPA Position Statement No 2 Agricultural Zone

(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

Proposal is not at variance to this Principle

The clearing application area is located within the Hardy Estuary/ Blackwood River catchment. The application are includes one major (1.7km East) and one minor (140m South West) watercourses associated with Area 1 and 1 major (2.8km South West) and 4 minor (all approximately 1km NW, NE, SE, SW) watercourses associated with Area 2.

There are no wetlands within a 10km radius of the clearing application area.

The vegetation community identified as being associated with the watercourse, Beard Vegetation Association 4, (Hopkins et al., 2001) is described as Medium woodland; Marri & Wandoo (Beard et al., 2001) comprising of Marri (E. calophylla), Wandoo (E. Wandoo), York Gum (E. loxophleba) and Salmon Gum (E. salmonophloia).

The proposed clearing may incrementally contribute to the threatening processes affecting the nearby (1.7 km, Area 1; 2.8km, Area 2) watercourse system however the likelihood of this is low due to the distance between the applied area and the watercourse acting as a buffer.

The clearing as proposed is not at variance to this principle as the applied area is outside the buffer recommended for waterways.

Methodology

References:
- Hopkins et al. (2001)
- Beard et al. (2001)

GIS Database:
- Hyrdography, linear
- Hydrogeographic catchment (Catchments)

- Pre-European Vegetation
- ANCA Wetlands
- Ramsar Wetland

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

Comments

Proposal is not likely to be at variance to this Principle

The Hardy Estuary / Blackwood River catchment (of which this application is a part) is considerably cleared (~ 12%) (Shepherd, 2006)

The groundwater salinity is mapped as 14,000 to 35,000 TDS/mg/L. The annual rainfall is 500-600 mm and evaporation is 500 mm.

The application area is 300-330m AHD (Area 1) and 270-275m AHD (Area 2) and there are no wetlands in the local area (10km radius).

The application areas are not mapped as having a salinity risk.

The soil type mapped for the application area is described as generally rolling to hilly country with tors; lateritic mesas and buttes on some interfluve areas: chief soils are hard neutral and acidic yellow mottled soils sometimes containing ironstone gravels. Associated are variable areas of hard acidic and neutral red soils on slopes; soils containing moderate to large amounts of ironstone gravels on ridges, crests of hills, and upper slopes; and many small areas of other soils. As mapped, areas of adjoining units may be included. (Northcote et al., 2001). The sands described are at a high risk of wind erosion following clearing.

Clearing of 6.7 ha/trees is not likely to incrementally contribute to land degradation of the local area.

The proposed clearing is therefore not likely to be at variance to this principle as clearing is not expected to cause appreciable land degradation.

Methodology

References:
- Northcote et al. (2001)
- Shepherd (2006)

GIS Database:
- Hyrdography, linear
- Hydrogeographic catchment (Catchments)
- Pre-European Vegetation
- ANCA Wetlands
- Ramsar Wetland
- Groundwater salinity, statewide
- Topographic contours, statewide
- Soils, statewide
- Rainfall, mean annual
- Evaporation, Areal Actual

(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

Proposal may be at variance to this Principle

There are 2 CALM managed lands (Nature Reserve and National Estate) within 10km of Area 1 and 1 CALM managed land (C Class Timber Reserve) bordering the North, West and East of Area 2.

Given the relatively unconsolidated condition of the surrounding conservation areas, the value of the applied area as ecologically significant is increased.

As the vegetation within the application area 2 borders conservation area (C Class Timber Reserve) the vegetation may be providing some buffering capacity against the spread of weeds/dieback into the aforementioned conservation area.

CALM Advice provided in 2006 draws attention to the method of access to Area 2 for gravel extraction as Pit Road does not currently exist. If the road is to be utilised it will need to be gazetted as a road or carriageway and a separate clearing permit will be required.

The clearing as proposed may be at variance to this principle due to the close proximity of Area 2 to a conservation area and as a result of it is possible significance as an ecological buffer.

Methodology

CALM Report (2006)

GIS Database:
- CALM Managed Lands
- Wagin 50cm Orthomosaic (Langate06)
- Dinninup 50cm Orthomosaic (DLI2004)

(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

Proposal is not likely to be at variance to this Principle

The Hardy Estuary / Blackwood River catchment (of which this application is a part) is considerably cleared (~ 12%) (Shepherd, 2006)

The groundwater salinity is mapped as 14,000 to 35,000 TDS/mg/L. The annual rainfall is 500-600 mm and evaporation is 500 mm.

The application area is 300-330m AHD (Area 1) and 270-275m AHD (Area 2) and there are no wetlands in the local area (10km radius).

The application areas are not mapped for salinity risk and Acid Sulphate Soil Risk.

The soil type mapped for the application area is described as generally rolling to hilly country with tors; lateritic mesas and buttes on some interfluve areas: chief soils are hard neutral and acidic yellow mottled soils sometimes containing ironstone gravels. Associated are variable areas of hard acidic and neutral red soils on slopes; soils containing moderate to large amounts of ironstone gravels on ridges, crests of hills, and upper slopes; and many small areas of other soils. As mapped, areas of adjoining units may be included. (Northcote et al., 2001). The sands described are at a high risk of wind erosion following clearing.

This soil type has poor nutrient retention ability; therefore water runoff has the potential to contain high levels of nutrients.

The clearing application area is located within the Hardy Estuary/ Blackwood River catchment. The land surrounding the application area includes one major (1.7km East) and one minor (140m South West) watercourses near Area 1 and 1 major (2.8km South West) and 4 minor (all approximately 1km NW, NE, SE, SW) watercourses near Area 2.

The proposed clearing may exacerbate eutrophication in this comparatively cleared (~ 12%) catchment. Therefore the proposed clearing may incrementally contribute to the threatening processes affecting the nearby (1.7 km, Area 1; 2.8km, Area 2) watercourse system however the likelihood of this is low due to the distance between the applied area and the watercourse acting as a buffer.

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

Methodology

References:
-Northcote et al. (2001)
-Shepherd (2006)

GIS Database:
- Hyrdography, linear
- Hydrogeographic catchment (Catchments)
- Pre-European Vegetation
- ANCA Wetlands
- Ramsar Wetland
- Groundwater salinity, statewide
- Topographic contours, statewide
- Soils, statewide
- Rainfall, mean annual
- Evaporation, Areal Actual

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

Comments

Proposal may be at variance to this Principle

The vegetation under application is located on soil type Ub90 and is associated with soils are hard neutral and acidic yellow mottled soils sometimes containing ironstone gravels. Associated are variable areas of hard acidic and neutral red soils on slopes; soils containing moderate to large amounts of ironstone gravels on ridges, crests of hills, and upper slopes; and many small areas of other soils. As mapped, areas of adjoining units may be included (Northcote et al., 1968) which usually have a high waterlogging risk (Commonwealth of Australia, 2001).

The Hardy Estuary/Blackwood River catchment (of which this application is a part) is well cleared (~ 12%). Further clearing in this area may lead to as increase the incidence and/or intensity of flooding.

The applied area occurs in a low lying area and this contributes to the susceptibility of the area to flooding, however the limited area of clearing may mitigate the possible increase in the incidence and intensity of flooding.

The proposal may be at variance with this principle despite the limited proposed area for clearing due to the susceptible soils; low topography and low proportion of remaining vegetation which may contribute to the incidence and/or intensity of flooding.

Methodology

References:
- Northcote et al (1968)
- Commonwealth of Australia (2001)

GIS Database:
- Soils, statewide
- Hydrogeographic Catchment (Catchments)
- Pre European Vegetation
- Wagin 50cm Orthomosaic (Langate06)
- Dinninup 50cm Orthomosaic (DLI2004)
- Topographic Contours, statewide

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

The property is currently zoned as Rural (Area 1) and Public Purposes (Area 2).

There is currently a registered claim of native title over the applied area for the Gnaala Karla Booja peoples; however as the land is vested with the Shire of West Arthur all native title claims are extinguished.

There is currently a Soil Conservation Notice over the applied area. Contact Andrew Watson for comment.

Methodology

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Miscellaneous	Mechanical Removal	6.7	The clearing as proposed has been assessed against the clearing principles and has been found to be: - at varinace to Principles C and E - maybe at variance to Principles A, B, H & J - not likely to be at variance to Principles D, G & I - not at variance to Principle F

5. References

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6. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)