Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2280/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Co-operative Bulk Handling Ltd**

1.3. Property details

Property: LOT 15 ON PLAN 22892 (Lot No. 15 STABLE CHADWICK 6450)
Local Government Area: Shire Of Esperance
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
18		Mechanical Removal	Building or Structure
		Mechanical Removal	Building or Structure
		Mechanical Removal	Building or Structure

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 proposed to be cleared is mapped as Beard Vegetation Complex 42 is described as shrublands of mallee & acacia scrub on south coastal dunes.	The vegetation proposed to be cleared consists of vegetation communities S1, G1, S3, R1 and E1 as identified by Cardno BSD (2007). The majority of the site consists of the S1 community which is described as a shrubland of Acacia cochlearis, Spyridium globulosum and Templetonia retusa with Acacia saligna and Acacia rostellifera over mixed introduced grasses and Desmocladus flexuosus. This community occurs in white to grey sands. The majority of vegetation proposed to be cleared was recorded as being in Very Good (Keighery 1994) condition (Cardno BSD 2007).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	

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 is at variance to this Principle

The vegetation under application is comprised of a vegetation complex that is well represented. The data suggests that the Shire and Bioregion are also reasonably well vegetated. However, the property is with 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 ~25% of vegetation remaining. The position statement does not support broad scale clearing, such as proposed in this application, within this area.

The Lake Warden wetlands suite is recognised internationally via the Ramsar convention and nationally via the ANCA Directory of Important Wetlands in Australia. The Lake Warden wetland suite is regularly visited by

approximately 20 000 waterbirds and a significant portion of the worlds Hooded Plover's (Thinornis rubricollis tregellasi) population (a Priority 4 species) (Jaensch et al. 1988). Threats to this system include broad scale vegetation clearing, changed hydrology including salinity, pollution and urban encroachment (DEC 2002). The proposed clearing will incrementally contribute to these threatening processes affecting the Lake Warden wetlands suites.

This vegetation is situated adjacent to an industrial subdivision (to the east) and the town of Esperance to the south. The vegetation is part of a south east to north west corridor close to the south side of the Pink Lake and Lake Warden wetland suites. Due to the proximity to the town of Esperance the condition and function of this corridor is limited. Vegetation in the north of the property is part of the corridor and if the proposed clearing were granted, this northern area would maintain the connectivity.

A revegetation condition will be placed on the permit to minimise the effects the clearing will have on biodiversity.

Methodology

DEC (2002)
EPA (2000)
Jaensch et al. (1988)
GIS database:
- ANCA wetlands - Environment Australia 26/3/99
- CALM Managed Lands and Waters - CALM 01/06/05
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- Ramsar wetlands - DEC 03
- SAC Biodatasets - accessed 18 Mar 08

(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

Within the local area (10km radius) thirty occurrences from seven Threatened and Priority fauna species have been recorded. Of these, four species are associated with a marine and/ or island environment and are not likely to be impacted by the proposed clearing. Two of the species have no current sightings after having been initially recorded in 1950.

The Hooded Plover's (Thinornis rubricollis tregellasi) is a Priority four species and nearly qualifies as threatened (under criteria C2a(i)) of the IUCN Red List (the International Union for the Conservation of Nature and Natural Resources. Benstead et al. 2006). This species favours wetlands (inland) - permanent freshwater lakes (over 8ha), wetlands (inland) - permanent freshwater marshes/ pools (under 8ha) and marine coastal/ supratidal - coastal brackish/ saline lagoons/ marine lakes (BirdLife International 2007).

The Lake Warden Wetland suite is (644m) north of the property (spanning to the east and west) is the likely habitat for this species that has been recorded in the local area. Threats to this system include broad scale vegetation clearing, changed hydrology including salinity, pollution and urban encroachment (DEC 2002).

Fox, cat and dog predation is considered the most significant threat for the Hooded Plover. Around human settlements, artificially high numbers of Silver Gull Larus novaehollandiae and Raven Corvus spp. are responsible for an increasing number of predation events and human disturbance increases the likelihood of predation and thermal stress (Weston 2000). Oil spills represent an additional threat (Western 2003). Breeding success is affected by off-road vehicles, livestock and ill-considered beach erosion management (Weston and Morrow 2000; Weston 2001). This wetland suite supports a significant proportion of the world's Hooded Plover population and is listed as a Ramsar wetland (Jaensch et al. 1988).

The vegetation proposed to be cleared is large (18 ha) in Very Good (Keighery 1994) condition (Cardno BSD 2007). Clearing of this vegetation may incrementally impact the habitat of the Hooded Plover (namely the nearby Lake Warden Wetland suite). The clearing will impact on other indigenous fauna species in the immediate area as the area will be further fragmented.

Methodology

Benstead et al. (2006)
BirdLife International (2007)
Cardno BSD (2007)
DEC (2002)
Jaensch et al. (1988)
Keighery (1994)
Weston (2003)
Weston (2001)
Weston (2000)
Weston and Morrow (2000)

GIS database:

- CALM Managed Lands and Waters - CALM 01/06/05
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- Ramsar wetlands - DEC 03
- SAC Biodatasets - accessed 18 Mar 08

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

Comments

Proposal is not likely to be at variance to this Principle

The vegetation proposed to be cleared is mapped as Beard Vegetation Association 42 (Fanny Cove). This vegetation is described as shrublands; mallee & acacia scrub on south coastal dunes. The soil type mapped for the property is A15 which is described as coastal dunes and their intervening swales with saline flats, swamps, and lakes; some lunettes; some estuarine areas: chief soils seem to be calcareous sands on the recent dunes fronting the coast, and siliceous sands on the older dunes and lunettes. There are various undescribed soils around the saline flats and swamps, around estuarine areas, and on aeolianite. As mapped, areas of unit Ca26 are included, particularly on headlands.

Within the local area (10 km radius) no Declared Rare Flora have been recorded, however, thirty records of seventeen Priority species have been found. This includes five P1, one P2, six P3 and five P4 species. Of these twelve occur on the same soil and vegetation type.

Cardno BSD undertook a flora survey of the property (including areas not proposed to be cleared) in October 2007. The site was traversed by foot and the vegetation assessed at 23 survey sites. Species present and environmental data (including vegetation disturbance) was recorded. This information was combined with a previous study of the site, undertaken in 2000. A total of 131 taxa fromm 100 genera and 48 families were recorded. Thirty-eight introduced (weed and cultivated) taxa were recorded. Twelve vegetation types were identified, consisting of nine plant communities of intact native vegetation, two types of rehabilitation and a grassland of introduced species.

The vegetation proposed to be cleared consisted of vegetation communities labelled S1, G1, S3, R1 and E1. The majority of the site consists of the S1 community which is described as a shrubland of Acacia cochlearis, Spyridium globulosum and Templetonia retusa with Acacia saligna and Acacia rostellifera over mixed introduced grasses and Desmocladus flexuosus. This community occurs in white to grey sands.

One Priority three taxon, Melaleuca incana subsp. tenella, was recorded within community S2 in the western sumpland. This community (and species) do not occur within the area under application.

No DRF were recorded in the site during the survey (Cardno BSD 2007).

The proposed clearing is not at variance to this Principle.

Methodology

Cardno BSD (2007)
GIS database:
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 18 Mar 08
- Soils, Statewide DA 11/99

(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 may be at variance to this Principle

Pink Lake, a Threatened Ecological Community, occurs within the local area (10km radius) of the vegetation under application. The boundary is 2.7km west (and the buffer is 2.3km west) of the vegetation proposed to be cleared. Threats to Pink Lake include broad scale vegetation clearing, changing hydrology (water becoming hyposaline and leaching of water from Lake Warden system) and pollution (nutrient enrichment and eutrophication) (DEC 2002).

The proposed clearing may incrementally contribute to this threatening process via the increased runoff of water on site, entering into the nearby Pink Lake system.

A revegetation condition will be placed on the permit to minimise the effects the clearing will have on Pink Lake. The revegetation site lies between the proposed clearing and Pink Lake and will enhance the values of already existing vegetation and act as a buffer to these impacts.

Methodology

DEC (2002)
GIS Database:
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- SAC Biodatasets - accessed 18 Mar 08

(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 may be at variance to this Principle

The property in question has approximately 32.5 ha (47%) of native vegetation remaining on the property. After the proposed clearing there will be 14.5 (21%) of vegetation remaining. There is 25% of vegetation remaining in the local area (10km radius).

	Pre-European (ha)	Current extent (ha)	Remaining (%)
IBRA Bioregions**			
Esperance Plains^	2 899 949	1 482 950	51.1
Shire*			
Esperance	4 242 884	3 011 033	71
Beard Vegetation Complex**			
42 Fanny Cove	310 084	296 496	95.6

* (Shepherd et al. 2006)
** (Shepherd et al. 2001)
^ Area within Intensive Land Use Zone

Beard Vegetation Complex 42 is described as shrublands of mallee & acacia scrub on south coastal dunes.

The vegetation proposed to be cleared consists of vegetation communities S1, G1, S3, R1 and E1 as identified by Cardno BSD (2007). The majority of the site consists of the S1 community which is described as a shrubland of Acacia cochlearis, Spyridium globulosum and Templetonia retusa with Acacia saligna and Acacia rostellifera over mixed introduced grasses and Desmocladus flexuosus. This community occurs in white to grey sands.

The majority of vegetation proposed to be cleared was recorded as being in Very Good (Keighery 1994) condition (Cardno BSD 2007).

The vegetation under application is comprised of a vegetation complex that is well represented. The data suggests that the Shire and Bioregion are also reasonably well vegetated. However, the property is with the EPA Position Statement No. 2 (2000) agricultural area that has been extensively cleared. This is evident when examining the local area which has 25% of vegetation remaining. The position statement does not support broad scale clearing, such as proposed in this application, within this area.

This vegetation is situated adjacent to an industrial subdivision (to the east) and the town of Esperance to the south. The vegetation is part of a south east to north west corridor close to the south side of the Pink Lake and Lake Warden wetland suites. Due to the proximity to the town of Esperance the condition and function of this corridor is limited. Vegetation in the north of the property is part of the corridor and if the proposed clearing were granted, this northern area would maintain the connectivity.

The proposed clearing is in a highly cleared area of the State and is of a large size in mostly Very Good (Keighery 1994) condition (Cardno BSD 2007) but due to the proximity to the town of Esperance the condition and function of this corridor is limited. Therefore, the proposal may be at variance to this Principle.

A revegetation condition will be placed on the permit to minimise the effects the clearing will have on the loss of vegetation in a highly cleared area.

Methodology

Cardno BSD (2007)
EPA (2000)
Hopkins et al. (2001)
Shepherd (2006)
Shepherd et al (2001)
GIS Databases:
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 18 Mar 08

(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 may be at variance to this Principle

Within the local area (10km) there are a number of significant wetlands, part of the Lake Warden Wetland suite. Various lakes within this suite of wetlands are Internationally and Nationally recognised and protected under Ramsar, ANCA and Register of the National Estate requirements. Threats to this system include broad scale vegetation clearing, changed hydrology including salinity, pollution and urban encroachment (DEC 2002). This suite runs east west and is at closest 644 north of the vegetation under application. Lakes within the suite that are protected under Ramsar, ANCA and the Register of the National Estate include Windabout Lake, Lake Warden, Station Lake, Mullet Lake, Ewans Lake, Wheatfield Lake and Woody Lake. Another suite of ANCA wetlands (Pink Lake suite) occurs 2.6km west of the area under application.

Cardno BSD (2007) identified a vegetation community associated with a wetland within the property and 170m north of the proposed clearing. The vegetation community (S2) is described as a tall shrubland of Melaleuca cuticularis over Baumea juncea in freshwater with fringing Acacia Cyclops over Fincinia nodosa and Gahnia trifida in shallow water. The deeper water supports a dense overstorey of Melaleuca cuticularis while Baumea juncea donminates the edge of the open water.

Buffers requirements land developments are generally in the order of 500m for a wetland (DoW 2005). The proposed clearing falls outside this buffer requirement, however, the clearing will incrementally contribute to the threatening processes affecting the Lake Warden wetlands suites (DEC 2002).

A revegetation condition will be placed on the permit to minimise the effects the clearing will have on Lake Warden. The revegetation site lies between the proposed clearing and Lake Warden and will enhance the values of already existing vegetation and act as a buffer to these impacts.

Methodology

Cardno BSD (2007)
DEC (2002)
DoW (2005)
GIS Databases:
- ANCA wetlands - Environment Australia 26/3/99
- CALM Managed Lands and Waters - CALM 01/06/05
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06
- Ramsar wetlands - DEC 03
- Register of National Estate - Environment Australia, Australian and world heritage division 12 Mar 02

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

Comments

Proposal is at variance to this Principle

The Bandy Creek, Esperance coast catchment (of which this application is a part) is highly cleared (~75%). The groundwater salinity is mapped at 500 to 1000 TDS/mg/L. The annual rainfall is 600mm and evaporation is 1800mm. The area under application is low lying and flat with some coastal dunes. There are wetlands present on the property (Cardno BSD 2007). Parts of the property are mapped at having a high salinity risk. This is likely to occur in the low lying areas. Clearing of 18ha is likely to incrementally contribute to a highly cleared and salinity affected catchment.

The soil type mapped for the property is A15 which is described as coastal dunes and their intervening swales with saline flats, swamps, and lakes; some lunettes; some estuarine areas: chief soils seem to be calcareous sands on the recent dunes fronting the coast, and siliceous sands on the older dunes and lunettes. There are various undescribed soils around the saline flats and swamps, around estuarine areas, and on aeolianite. As mapped, areas of unit Ca26 are included, particularly on headlands.

As the vegetation proposed to be cleared occurs on sands (Cardno BSD 2007) there is a risk of wind erosion following clearing. This risk is evident due to the already existing blowouts within the property.

Therefore, the proposed clearing is likely to exacerbate salinity and has a high risk of wind erosion.

A revegetation condition will be placed on the permit to minimise the effects of salinity. A condition will be placed on the permit to minimise the effects of wind erosion.

Methodology

Cardno BSD (2007)
Northcote et al. (1968)
GIS database:
- Annual Evaporation Contours (Isopleths) - WRC 29/09/98
- Average Annual Rainfall Isohyets - WRC 29/09/98
- Esperance Townsite 20cm Orthomosaic - Landgate 07

- Hydrographic catchments, catchments - DoW 01/06/07
- Hydrographic catchments, subcatchments - DoW 01/06/07
- Hydrography, linear - DOW 13/7/06
- Salinity Risk LM 25m - DOLA 00
- Topographic contours statewide - DOLA and ARMY 12/09/02
- Soils, Statewide DA 11/99

(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

Within the local area (10km radius) there are six conservation areas. This includes four Nature Reserves that are on the Register of the National Estate. They are Lake Warden Nature Reserve (644m north), Mullet Lake Nature Reserve (also a System 3 reserve 5.4km northeast), Woody Lake Nature Reserve (1.9km northeast) and Recherche Archipelago Nature Reserve (islands of the coast 6.9km south).

The first three mentioned Nature Reserves make up the Lake Warden wetland suite and are listed under Ramsar and ANCA as significant wetlands. Threats to this system include broad scale vegetation clearing, changed hydrology including salinity, pollution and urban encroachment (DEC 2002).

The South Coast, a System 3 reserve, is 3.3km south west of the area proposed to be cleared.

This vegetation is situated adjacent to an industrial subdivision (to the east) and the town of Esperance to the south. The vegetation is part of a south east to north west corridor close to the south side of the Pink Lake and Lake Warden wetland suites. Due to the proximity to the town of Esperance the condition and function of this corridor is limited. Vegetation in the north of the property is part of the corridor and if the proposed clearing were granted, this northern area would maintain the connectivity.

Buffers requirements land developments are generally in the order of 500m for a wetland (DoW 2005). The proposed clearing falls outside this buffer requirement, however, the clearing will incrementally contribute to the threatening processes affecting the Lake Warden wetlands suites (DEC 2002).

A revegetation condition will be placed on the permit to minimise the effects the clearing will have on Lake Warden. The revegetation site lies between the proposed clearing and Lake Warden and will enhance the values of already existing vegetation and act as a buffer to these impacts.

Methodology

DEC (2002)
DoW (2005)
GIS Databases:
- ANCA wetlands - Environment Australia 26/3/99
- CALM Managed Lands and Waters - CALM 01/06/05
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- Ramsar wetlands - DEC 03
- Register of National Estate - Environment Australia, Australian and world heritage division 12 Mar 02
- System 1 to 5 and 7 to 12 areas - DEC 11/7/06

(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 at variance to this Principle

The Bandy Creek, Esperance coast catchment (of which this application is a part) is highly cleared (~75%). The groundwater salinity is mapped at 500 to 1000 TDS/mg/L. The annual rainfall is 600mm and evaporation is 1800mm. The area under application is low lying and flat with some coastal dunes. There are wetlands present on the property (Cardno BSD 2007). Parts of the property are mapped at having a high salinity risk. This is likely to occur in the low lying areas. Clearing of 18ha is likely to incrementally contribute to a highly cleared and salinity affected catchment.

The soil type mapped for the property is A15 which is described as coastal dunes and their intervening swales with saline flats, swamps, and lakes; some lunettes; some estuarine areas: chief soils seem to be calcareous sands on the recent dunes fronting the coast, and siliceous sands on the older dunes and lunettes. There are various undescribed soils around the saline flats and swamps, around estuarine areas, and on aeolianite. As mapped, areas of unit Ca26 are included, particularly on headlands.

No data exists for this area with regard to Acid Sulfate Soils (ASS). It is possible that ASS occur in this area due to the proximity to wetland areas. The disturbance of the soil profile with respect to clearing of vegetation is unlikely to disturb ASS which generally occurs (>3m - DEC 2006)

The proposed clearing is likely to exacerbate salinity and increase runoff in this highly cleared catchment. This may incrementally affect the nearby Lake Warden wetlands suite due to identified threats including broad scale vegetation clearing, changed hydrology including salinity, pollution and urban encroachment (DEC 2002).

A revegetation condition will be placed on the permit to minimise the effects the clearing will have on salinity and increased runoff.

Methodology DEC (2002)
Northcote et al. (1968)
GIS database:
- Annual Evaporation Contours (Isopleths) - WRC 29/09/98
- Average Annual Rainfall Isohyets - WRC 29/09/98
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- Hydrographic catchments, catchments - DoW 01/06/07
- Hydrographic catchments, subcatchments - DoW 01/06/07
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide DA 11/99

(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 is not likely to be at variance to this Principle**
Esperance is within a flood prone area with floods affecting the Shire as recently as January 2007.

The property under application is low lying, however, water is likely to drain into the on site wetland or the nearby Lake Warden.

Methodology GIS database:
- Esperance Townsite 20cm Orthomosaic - Landgate 07
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments
The proponent requires a Development approval from the Shire of Esperance.

The property is currently zoned for Industry (CRN160452).

Methodology GIS database:
- Environmental Impact Assessments - EPA 22/2/07

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Building or Structure	Mechanical Removal	18	The assessable criteria have been addressed and the clearing as proposed is at variance to Principles (a), (e), (g) and (i), may be at variance to Principles (b), (d), (f) and (h) and is not likely to be at variance to Principles (c) and (j). Conditions on the Permit address the Principles that are at variance.
Building or Structure	Mechanical Removal		
Building or Structure	Mechanical Removal		

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)