Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1834/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: PMR Quarries P/L

1.3. Property details

Property:
LOT 103 ON DIAGRAM 41362 (HOPE VALLEY 6165)
LOT 53 ON DIAGRAM 35196 (HOPE VALLEY 6165)
LOT 55 ON DIAGRAM 38261 (HOPE VALLEY 6165)
LOT 712 ON PLAN 250228 (HOPE VALLEY 6165)
PART LOT 650 ON PLAN 251250 (HOPE VALLEY 6165)
PART LOT 651 ON PLAN 253746 (HOPE VALLEY 6165)
LOT 102 ON PLAN 46051 (House No. 25 LUSSKY HOPE VALLEY 6165)

Local Government Area: City Of Cockburn & Town Of Kwinana

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
30.38		Mechanical Removal	Extractive Industry

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
Heddle Vegetation Complex: Cottesloe Complex Central and South - Mosaic of woodland of Eucalyptus gomphocephala and open forest of E. gomphocephala, E. marginata, Corymbia calophylla, closed heath on limestone outcrops. Beard Vegetation Association: 998 - Medium woodland; tuart	The proposal is to clear 30.38ha of native vegetation for the purpose of limestone extraction. The vegetation in the eastern area under application comprises Eucalyptus gomphocephala and E. marginata over an understorey comprising Xanthorrhoea preissii, Acacia rostellifera, Melaleuca spp, Hardenbergia spp, Jacksonia spp, and Hardenbergia species. In addition non-native grasses have extensively colonised the area under application, particularly in open areas within the applied area. An existing quarry located in the middle portion of the applied area is in a degraded to completely degraded condition with regrowth restricted to an occasional Acacia plant. The vegetation in the western area under application comprises Eucalyptus gomphocephala and E. marginata over an understorey dominated by	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation clearing description based on site visit conducted by DEC officers on 21/06/2007. The area under application falls within the southern portion of The Hope Valley Wattleup Redevelopment Area (HVWRA), a 1,422ha parcel of land located between Fremantle and Rockingham which has been identified for future industrial use (Western Australian Land Authority, 2006). A flora and vegetation survey was conducted by Weston (2005) and a fauna survey was undertaken by Bamford (2005) as part of a Ministerial Condition for a Biodiversity Strategy for the HVWRA (Western Australian Land Authority, 2006). The majority of the area to be cleared is in a degraded condition, with some areas of good condition which were confined to the northwest portion of the eastern area under application. Due to a recent fire in the western area under application, it is difficult to assign a condition rating, however it is likely to be degraded to good.

Dryandra sessilis, Acacia rostellifera, Xanthorrhoea preissii, Macrozamia riedlei and Hardenbergia spp. This area has been extensively burnt, with large expanses of bare soil, however given time the vegetation may have the ability to regenerate back to good condition.

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 not likely to be at variance to this Principle

The majority of the area under application is in a degraded condition with some areas confined to the northwest portion of the eastern applied area being in good condition. During the flora survey that included the applied area, Weston (2005) recorded a total of 55 native plant species, but did not record any Declared Rare Flora (DRF) or Priority flora species.

Given that the vegetation under application is mostly in a degraded condition, has low species diversity and no DRF, it is not considered likely that the vegetation under application comprises a high level of biodiversity.

Methodology

References:
- DEC (2007)- Bamford Consulting Ecologists (2005)
- Weston (2005)

(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

A desktop and fauna assessment undertaken by Bamford Consulting Ecologists (2005) identified 118 bird species, 41 reptile species, 21 mammal species and 9 amphibian species with the potential to occur within the HVWRA site, which includes the applied area.

Bamford (2005) advised that of the identified local bird species, the Fairy-wrens (Malurus spp.), Weebills (Smicrornis spp.), White-browed Scrubwren (Sericornis frontalis) and the Scarlet Robin (Petroica boodang) have a limited distribution range and are particularly sensitive to habitat loss. In addition, Bamford (2005) reported that the habitat within the HVWRA site may be used for breeding by the EPBC Act (Migratory) listed Rainbow Bee-Eater, which nests in burrows excavated in sandy ground during the spring and summer months. Although this species was not observed during the fauna survey, clearing of native vegetation within the area under application during the spring and summer months may destroy any burrows of the Rainbow Bee-eater that are present.

The Western False Pipistrelle (Falsistrellus mackenzei) (P4) and the Masked Owl (Tyto novae-hollandiae nova) (P1) have been recorded within a 3km radius of the area under application and are known to roost and nest in hollows in Tuart trees (Eucalyptus gomphocephala). During the site inspection no hollows were observed in trees that could potentially be utilised as habitat, with the Tuarts under application not considered to be of hollow-bearing age.

The DEC Priority 5 species Quenda (Isoodon obesulus fusciventer) has been recorded within a 2km radius of the area under application and is considered to be prevalent throughout the HVWRA study site (Bamford, 2005). During the DEC site visit numerous Quenda diggings were observed to be confined within the northwest portion of the eastern applied area in dense understorey comprising Xanthorrhoea preissii, Hardenbergia spp, Melaleuca spp and grasses; and a juvenile Bobtail (Tiliqua occipitalis) was observed amongst a limestone outcrop. The western area under application has been extensively burnt with no understorey present and the vegetation is unlikely to provide suitable habitat for ground dwelling fauna such as Quenda in that particular locality.

In view of the proposed limestone extraction within the applied area, consideration may need to be given to subterranean fauna such as Stygofauna and Troglofauna species. 'Stygofauna are obligate aquatic subterranean animals that live within fresh or saline groundwater systems associated with karst (limestone caves/fissures) whereas Troglofauna are obligate fauna that live in air chambers in caves and/or rock fissures above such systems' (Humphreys, 2006). Storey (2007) advises the limestone/calcrete systems associated with the area under application is 'very likely to support both Stygofauna and Troglofauna species.' According to Humphreys (2006) the identified fauna 'are constrained to small geographic areas and are particularly vulnerable to mining activities.' Although the clearing of native vegetation may not directly impact subterranean fauna, the removal of trees may have a detrimental impact on Stygofauna and Troglofauna if the tree roots had

been utilised as a food source. In addition, the activities associated with limestone extraction would impact these species if they are present in this location.

The Environmental Protection Authority (EPA 2008) advise that the area under application falls within the Hope Valley - Wattleup Redevelopment Area which was previously assessed through Bulletin 1133; and as such, the EPA did not consider that Stygofauna and karsts to be a significant issue for the Hope Valley area. Given the above, it is not considered likely that the proposed clearing would have an impact on subterranean fauna species.

Although the proposed clearing is unlikely to impact upon subterranean fauna species (EPA 2008), given that the vegetation under application is likely to be utilised by a number of fauna species including species of conservation significance; and given that the area under application is located within a landscape which has been significantly cleared for industrial development, it is considered that it may comprise some significant habitat.

In order to minimise the impact of the clearings, conditions have been imposed on the permit requiring the trapping and relocation of Quenda prior to clearing.

Methodology

References:
- DEC (2007)
- Bamford Consulting Ecologists (2005)
- EPA (2008)
- Humphreys (2006)
- Storey (2007)

GIS Databases:
- Geology, 250K - DOIR 21/12/01
- Potential Groundwater Dependant Ecosystems - DOE 2004
- SAC BIO Datasets - 02/05/07
- Surface Geology - DOW

(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

There are no known populations of rare flora (DRF) within a 5km radius of the area under application. However, there is one species of the priority listed flora Dodonaea hackettiana (P4), of which there are seven known populations in the local area, with the closest located approximately 2.3km northeast of the eastern area under application.

Although Dodonaea hackettiana is located in close proximity to the area under application, it is found within a different vegetation complex and soil association to the applied area and is therefore not considered likely to be present on site.

A flora and vegetation survey conducted at different times throughout the year by Weston (2005), did not find any DRF or Priority species within the (HVWRA) site, which includes the applied areas.

Given that Weston (2005) did not record any rare or priority species during the flora survey, and given the lack of rare flora in the local area, it is unlikely to include habitat that is suitable for D. hackettiana; and it is not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology

References:
- DEC (2007)
- Weston (2005)

GIS Databases:
- Heddle Vegetation Complexes - DEP 21/06/95
- Soils, Statewide - DA 11/99
- SAC BIO Datasets - 02/05/07

(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

The nearest Threatened Ecological Community (TEC) is located approximately 2.5km southeast of the western area under application and is found within the same soil association and landform as the applied area. This TEC has been described as Floristic Community Type (FCT 26a) Melaleuca huegelii and Melaleuca acerosa shrublands on limestone ridges.

A flora and vegetation assessment conducted by Weston (2005) identified the potential for FCT 26a to be

present at three unspecified locations within the HVWRA industrial site. Further flora assessment and PATN analysis by Griffin and Associates (2005) of these identified sites, found the vegetation corresponds with FCT 24 which is described as Northern Spearwood shrublands and woodlands (Gibson et al, 2004) and is not a TEC.

Given that the vegetation under application was not identified as a TEC during a flora survey and PATN analysis and given the distance to the nearest recorded TEC, it is not considered likely to comprise, or be necessary for the maintenance of, a TEC.

Methodology References:
- Gibson et al (2004)
- Griffin and Associates (2005)
- Weston (2005)

GIS Databases:
- SAC BIO Datasets - 02/05/07

(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 not likely to be at variance to this Principle**

Heddle et al (1980) defines the vegetation under application as Cottesloe Complex Central and South of which there is 41.1% of pre-European extent remaining. The vegetation under application is also described as Beard vegetation associations 998 of which there is 41.6% of pre-European extent remaining (Shepherd, 2007).

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present pre-European settlement (Commonwealth of Australia, 2001).

The identified vegetation complexes have representations above the minimum 30% of pre-European extent and given the degraded condition of the vegetion on site and better vegetation within the bushforever sites in the local area, it is not considered likely that the vegetation under application is significant as a remnant.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain^	1,501,204	583,141	38.8	32.5
Heddle vegetation complex** Cottesloe Complex Central and South	44,995	18,474	41.1	8.8
Beard vegetation type*				
998	51,015	21,225	41.6	29.2

* (Shepherd, 2007)
** (Shepherd et al, 2001)
*** (EPA, 2006)
^ Area within Intensive Land Use Zone

Methodology GIS Databases:
- Commonwealth of Australia (2001)
- EPA (2006)
- Heddle et al. (1980)
- Shepherd et al. (2001)
- Shepherd (2007)

(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 likely to be at variance to this Principle**

There are no mapped watercourses or wetlands within the area under application. The nearest wetland is a Conservation Category Wetland (CCW), Long Swamp, which is located approximately 600m southeast of the western applied area. The nearest watercourse to the proposed area is the Peel Main Drain which is located approximately 4.4km southeast of the western applied area.

Given the distance to the nearest wetland or watercourse, and that no wetland dependent vegetation was observed during the site visit, the vegetation under application is not considered likely to include vegetation growing in, or in association with a watercourse or wetland.

Methodology

References:
- DEC (2007)

GIS Databases:
- EPP, Lakes - DEP 1/12/92
- EPP, Wetlands 2004 (DRAFT) - DOE 21/07/04
- Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
- Hydrography, linear (hierarchy) - DOW
- RAMSAR, Wetlands - CALM 14/02/03

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

Comments

Proposal may be at variance to this Principle

Soils within the area under application are described as well-drained Spearwood sands which have a low risk of land degradation from water erosion and water logging, and a nil to low risk of salinity and acid sulphate soils (State of Western Australia, 2005).

The main land degradation risk associated with this sandy soil type is considered to be nutrient export and wind erosion (State of Western Australia, 2005). The proposed clearing of native vegetation is not considered likely to impact on the export of nutrients.

The high wind erosion potential is due to the sandy nature of the soil and without appropriate vegetation cover, windbreaks or adequate dust suppression on exposed surfaces, the proposal may result in appreciable land degradation and may be at variance to this Principle.

Although the Department of Agriculture and Food (2007) has identified the potential for land degradation in the form of wind erosion, if the land clearing is completed in a cell clearing manner and is subsequently rehabilitated, it is considered likely that the risk of wind erosion would be low.

Given the area under application is for a proposed limestone mine, wind erosion issues should be addressed and managed through the extractive industries licence. In addition, a condition will be imposed on the permit requiring that clearing not be conducted unless actively mining the cleared area within 6 months.

Methodology

References:
- DEC (2007)
- Department of Agriculture and Food (2007)
- State of Western Australia (2005)

GIS Databases:
- Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
- Salinity Mapping LM 25m - DOLA 00
- 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 is not likely to be at variance to this Principle

There are six areas reserved for conservation purposes within a 5km radius of the area under application, with the closest being Bush Forever site 346 which is located approximately 355m west of the western applied area. There are also two System 6 Conservation Reserves and a number of Conservation Category Wetlands (CCW) located within a 5km radius of the area under application.

The area under application has industrial development immediately to the south and east and is located in the southern portion of the HVWRA site which has been identified for future industrial use (Western Australian Land Authority, 2006). In considering the surrounding land uses and the fragmentation of the area under application from local conservation reserves and remnant vegetation, it is unlikely to provide a corridor to these areas.

Given the distance to these reserves, it is not considered likely that the proposed clearing would have a direct or indirect impact on the environmental values of any adjacent or nearby conservation reserves.

Methodology

References:
- Western Australian Land Authority (2006)

GIS Databases:
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 1/07/05

- EPP, Lakes - DEP 1/12/92
- EPP, Wetlands 2004 (DRAFT) - DOE 21/07/04
- Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
- RAMSAR, Wetlands - CALM 14/02/03

(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

Public Drinking Water Source Area (PDWSA). Due to the porous nature and the high infiltration rates of sand, it is not considered likely that the proposed clearing would result in water erosion causing deterioration in surface water quality.

The nearest Wetland is Long Swamp which is situated approximately 600m southeast of the western applied area and Thomson Lake is located approximately 3.2km northeast of the eastern area under application. The nearest watercourse is the Peel Main Drain which is located approximately 4.4km southeast of the western applied area.

Long Swamp has been identified as having a high vulnerability to groundwater contamination (Weston, 2005). The identified wetland is located 600m southeast of the applied area and groundwater within the local area generally flows in a westerly direction towards the ocean (Western Australian Land Authority, 2006). Given that the proposed land use is for limestone extraction which will not require any fertilizer application, it is not considered likely that the proposed clearing would result in runoff causing deterioration in surface or groundwater quality.

Given that there is a nil to low risk of salinity and acid sulphate soils, and given the distance to the wetlands and watercourse and the high infiltration rates of the sand, it is not considered likely that the proposed clearing would cause deterioration in the quality of surface or underground water.

Methodology

References:
- DEC (2007)
- Western Australian Land Authority (2006)
- Weston (2005)

GIS Databases:
- Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
- Hydrography, linear (hierarchy) - DOW
- Public Drinking Water Source Areas (PDWSA) - DOW
- Salinity Mapping LM 25m - DOLA 00

(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

The area under application is located approximately 600m northeast of the closest wetland. The nearest watercourse to the applied area is the Peel Main Drain which is located approximately 4.4km to the southwest.

Given the sandy soils on site are associated with a low to nil risk of waterlogging due to their high infiltration rates (State of Western Australia, 2005), the location on a sandy rise; and the distance to the nearest wetland or watercourse, it is not considered likely that the removal of vegetation would cause or exacerbate the incidence of flooding.

Methodology

References:
- DEC Site visit - 21/06/07
- State of Western Australia 2005

GIS Databases:
- Geomorphic Wetlands (Mgt.Categories), Swan Coastal Plain - DEC
- Hydrology, linear (hierarchy) - DOW

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

Comments

The proposed clearing is for the purpose of limestone extraction, with the area under application being located in the southern portion of The Hope Valley Wattleup Redevelopment Area (HVWRA), which is zoned Industrial.

Due to the locality of the area under application, the issue of subterranean fauna habitat was identified and preliminary advise was sought from Andrew Storey from the University of Western Australia and Bill Humphreys from the Western Australian Museum. Further advice was sought from the Environmental Protection Authority (EPA) who advised that since the area under application had previously been assessed under Bulletin 1133, the EPA did not consider that Stygofauna and karsts to be a significant issue for the Hope

Valley area (TRIM DOC66947).

The Environmental Authority (EPA) advised that no appeals were received against the EPA's determination that the proposal should be treated as Not Assessed - Public Advice Given and Managed under Part V (Clearing). (TRIM DOC66947).

The Environmental Authority (EPA) advised that The Hope Valley - Wattleup Redevelopment Project Biodiversity Strategy identified locations for primary and secondary linkages to ensure the retention and enhancement of ecological values and that the proposed clearing may impact upon some linkages (TRIM DOC66947). The south-eastern portion of the eastern area under application and the northern portion of the western applied areas encroach into an identified primary linkage, and as such, these portions have been excluded from the areas under application.

The State Administrative Tribunal (SAT) has granted development approval for the areas under application. (TRIM DOC66052).

The Town of Kwinana advise that PMR Quarries (applicant) were issued with an Extractive Industry Licence on 1st July 2008 which is valid until 30th June 2009. (TRIM DOC66991).

The Town of Kwinana advise that Lot 102 on Plan 46051 (formerly Lot 652), located in the north-western portion of the western area under application, is covered under the current Extractive Industry Licence (TRIM DOC 67544).

Methodology

References:
- EPA (2008)
- SAT (2007)

GIS Databases:
- Native Title Claims - DLI 7/11/05

4. Assessor's comments

Comment

The assessable criteria have been addressed and the proposed clearing:
may be at variance to principles (b) and (g)

5. References

Bamford Consulting Ecologists (2005) Hope Valley Wattleup Redevelopment Project: Biodiversity Fauna Assessment. Unpublished report prepared fro RPS Bowman Bishaw Gorham.

Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.

DAFWA (2008) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. TRIM Ref DOC31803.

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EPA (2008) Advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, received 24/10/2008. Environmental Protection Authority, Western Australia (TRIM ref: DOC 66947).

Gibson N., Keighery B., Keighery G., Burbidge A. and Lyons M. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management and the Western Australian Conservation Council.

Griffin, E.A. & Associates. (2005) FCT Analysis Hope Valley Sites. Unpublished report for A.S. Weston, Perth.

Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

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Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

Site Inspection. (2008). Site Inspection Report, Department of Environment and Conservation (DEC). Perth, Western Australia. TRIM Ref. DOC67002.

State Administrative Tribunal (2007) - Development Approval (TRIM ref. DOC66052).

Storey, A., pers.comm. (UWA) (DEC TRIM ref. DOC30444)

Trosic, A., pers. comm. (Town of Kwinana) (DEC TRIM ref. DOC36295).

Western Australian Land Authority (2006) Hope Valley Wattleup Redevelopment Project: Biodiversity Strategy. For Public Comment. Western Australian Land Authority, Perth.

Weston, A. (2005) Draft Vegetation and Flora Survey and Condition Assessment and Rare Flora Search: Hope Valley-Wattleup Redevelopment Project Area. Unpublished report prepared fro RPS Bowman Bishaw Gorham.

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)