Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3074/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Kallamar Estate Ltd**

1.3. Property details

Property: LOT 5 ON PLAN 13245
Local Government Area: Shire Of Gingin
Colloquial name:

1.4. Application

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

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 vegetation association: 949- Low woodland; banksia. (SAC Bio Datasets 12/05/2009; Shepherd, 2007)	The 14.9 hectares under application is located within Lot 5 (507.5ha property) (zoned rural). The proposed clearing is for irrigated horticulture to expand the existing olive grove area.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The condition of the native vegetation under application was sourced from the Site Inspection (DEC, 2009) and Consultant's report (Cardno BSD, 2008).
Heddle Vegetation Complexes: Bassendean Complex - North: Vegetation ranges from a low open forest and low open woodland of Banksia species - E. todtiana to low woodland of Melaleuca species and sedgelands which occupy the moister sites. (Heddle et al, 1980)	Ten plant communities were identified within the areas surveyed by Cardno BSD (2008) across Lots 5 and 6 (which includes the 14.9 ha under application), of which one plant community was identified within the area under application being: Plant Community W1: Open Woodland of Corymbia calophylla and Eucalyptus todtiana with Banksia menziesii, Banksia attenuata and Banksia ilicifolia over Xanthorrhoea preissii and Calothamnus quadrifidus over Hibbertia hypericoides on grey loamy sands on low hills and rises.		

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

A flora and vegetation survey (Cardno BSD, 2008) undertaken in October 2007 identified 275 native flora species and 18 weed species within a ~480 ha subject site (~440ha within Lot 6 and ~40ha within Lot 5), which included the 14.9 ha under application. The species richness for the area under application is estimated to be 85 - 145 species (Cardno BSD, 2009).

The vegetation under application has been identified as plant community W1:
- Open Woodland of Corymbia calophylla and Eucalyptus todtiana with Banksia menziesii, Banksia attenuata and Banksia ilicifolia over Xanthorrhoea preissii and Calothamnus quadrifidus over Hibbertia hypericoides on grey loamy sands on low hills and rises (Cardno BSD, 2008).

This plant community has been inferred as Floristic Community Type (FCT) 23b (Cardno BSD, 2008). FCT 23b (Northern Banksia attenuata - Banksia menziesii woodlands as defined by Gibson et al, 1994) is listed as a priority ecological community (Priority 3) in Western Australia (DEC, 2008).

Furthermore, the vegetation under application is considered to be in excellent condition and is predominantly Banksia woodland (Banksia spp.), which is considered to provide foraging habitat for Carnaby's Black-Cockatoo. A site inspection (DEC, 2009) observed the vegetation as comprising a dense mid-storey and a dense understorey with very little disturbance. The dense understorey of the vegetation to be cleared may

contain significant habitat for ground-dwelling fauna such as the Western Brush Wallaby and Chuditch.

Given the vegetation under application is inferred as FCT 23b, which is listed as a priority ecological community; the potential habitat value of the vegetation; and the structurally intact native vegetation in excellent condition, the vegetation applied to be cleared is considered to comprise a high level of biological diversity. Therefore, the clearing is considered to be at variance to this Principle.

Methodology References:
- Cardno BSD (2008)
- Cardno BSD (2009)
- DEC (2008)
- DEC (2009)
- Gibson et al (1994)

(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 is at variance to this Principle**

There are three fauna species of conservation significance recorded within the local area (5km radius). The nearest known fauna record is Carnaby's Black-Cockatoo (Calyptorhynchus latirostris) located approximately 3.1km north-east of the area under application.

The Black-Cockatoo is known to feed on a large variety of plants including Proteaceous species (e.g. banksia, dryandra and grevillea), marri nuts (Corymbia calophylla), jarrah (Eucalyptus marginata) and tuart (Eucalyptus gomphocephala) (Shah, 2006).

DEC (2007) Fauna Habitat Notes indicate that Chuditch occupy large home ranges, is highly mobile and appears able to utilise bush remnants and corridors and that Western Brush Wallaby occur in areas of forest and woodland supporting a dense shrub layer.

A site inspection (DEC, 2009) of the area under application identified the vegetation as predominantly Banksia woodland with a dense shrub layer and a dense herb layer, in excellent condition. This area would be utilised as foraging habitat for Carnaby's Black-Cockatoo and may also provide habitat for ground dwelling fauna such as Chuditch.

It is acknowledged that there are large remnants of native vegetation in the local area; however the cumulative impacts from the reduction of Carnaby's foraging habitat on the Swan Coastal Plain has resulted in vegetation that provides a food source for Carnaby's cockatoos being considered as significant habitat. The continual net loss of critical habitat will result in additional pressure on the current population of Carnaby's cockatoos.

Given the occurrence of approximately 14.9 ha of native vegetation, being Banksia woodland in excellent condition, and the vegetated connectivity to surrounding native vegetation; it is considered that the vegetation under application is likely to comprise significant habitat for fauna indigenous to Western Australia, including Carnaby's Black Cockatoo and is therefore, considered at variance to this Principle.

Methodology References:
- Shah (2006)
- DEC (2007)
- DEC (2009)
- DEC (2009a)

GIS Database:
- SAC Bio Datasets 12/05/2009

(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 known records of four species of rare flora in the local area (5km radius), being Paracaleana dixonii located ~3.3km south-east of the area under application, on the same soils and within the same vegetation complex; and Darwinia acerosa, Darwinia carnea and Asterolasia nivea located ~2.8km north-west of the area under application, on the same soils, but within different vegetation complex as those of the area under application.

A targeted flora survey (Cardno BSD, 2008) undertaken in October 2007 did not identify any rare flora within the area under application. Therefore, it is not considered that the clearing is likely to be at variance to this Principle.

Methodology Reference:
- Cardno BSD (2008)

GIS Databases:

- Heddle Vegetation Complexes
- SAC Bio Datasets 12/05/2009
- 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 known occurrences of Threatened Ecological Communities (TEC) located within the local area (5km radius). The nearest recorded TEC is located ~19km south of the areas under application. This TEC has been identified as being Community type 7: Herb rich saline shrublands in claypans.

In addition, a flora survey identified Plant Community S2: Low shrubland of Kunzea micrantha subsp. micrantha with Hakea marginata over Meeboldina cana and Dampiera teres on seasonally wet grey clays, which occurs approximately 500m from the vegetation under application and covers an area of approximately 0.2ha, (Cardno BSD, 2008). This Plant Community S2 is inferred as FCT 8: Herb rich shrublands in clay pans, which is a ground water dependent community, is recognised as being a threatened ecology community (Cardno BSD, 2008).

The plant community W1 identified within the area under application has been inferred as Floristic Community Type (FCT) 23b (Cardno BSD, 2008). FCT 23b (Northern Banksia attenuata - Banksia menziesii woodlands as defined by Gibson et al, 1994) is listed as a priority ecological community (Priority 3) in Western Australia (DEC, 2008).

Given the vegetation under application has been identified as FCT 23b; it is not considered likely that the vegetation comprises or is necessary for the maintenance of a threatened ecological community.

Methodology

References:
- Cardno BSD (2008)
- DEC (2008)
- Gibson et al (2008)

GIS Database:
- SAC Bio Datasets 12/05/2009

(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

The vegetation within the area under application is identified as a component of Beard vegetation type 949, and Heddle Complexes Bassendean Complex North, of which there is 58.4% and 72.0% of Pre-European extent remaining respectively (Shepherd, 2007; EPA, 2006). Further, the Beard vegetation type and the Heddle vegetation complexes are well represented in secure tenure (49.4% and 27.5%) (Shepherd, 2007; EPA, 2006). In addition, vegetation mapping of the local area (5km radius) shows approximately 70% remnant vegetation to be remaining.

The National Objectives and Targets for Biodiversity Conservation include 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 Beard vegetation type and Heddle complex are above the recommended minimum of 30% representation.

Given the high representations of the vegetation associations and the ~70% native vegetation remaining in the local area; the vegetation applied to be cleared is not considered significant as a remnant of native vegetation. Therefore, the clearing as proposed is considered not likely to be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain^	1,501,208	583,140	38.8	
Shire of Gingin*	319,671	168,783	52.8	
Local area (5km radius)	7,850	~5,500	~70	
Beard type in Bioregion 949*	209,983	122,677	58.4	49.4
Heddle vegetation complex**				
Bassendean - North	74,147	53,384	72.0	27.5

* (Shepherd, 2007)

*** (EPA, 2006)
^ Area within Intensive Land Use Zone

Methodology

References:
- Commonwealth of Australia (2001)
- EPA (2006)
- Shepherd (2007)

GIS Databases:
- Heddle Vegetation Complexes
- Interim Biogeographic Regionalisation of Australia
- NLWRA, Current Extent of Native Vegetation
- SAC Bio Datasets 12/05/2009

(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

The nearest wetland is a Conservation Category Wetland (CCW) located ~200m west of the area under application. This wetland is located outside of the critical zone of influence (within 50m of mapped wetlands) and the secondary zone of influence (within 200m of mapped wetlands) (Hill et al, 1996).

The nearest watercourses, Moore River and Whitfield Brook, are located approximately 1.7km north and 3.6km south-east of the area under application, respectively.

The vegetation under application has been identified as Open Woodland of Corymbia calophylla and Eucalyptus todtiana with Banksia menziesii, Banksia attenuata and Banksia ilicifolia over Xanthorrhoea preissii and Calothamnus quadrifidus over Hibbertia hypericoides on grey loamy sands on low hills and rises (Cardno BSD, 2008), which is representative of upland vegetation.

Given the distance to the nearest wetland and the presence of upland vegetation this clearing proposal is not considered likely to be at variance to this Principle.

Methodology

References:
- Cardno BSD (2008)
- Hill et al (1996)

GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Rivers

(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

The landscape of the area under application and surrounds can be described as subdued dune-swale terrain (Northcote et al, 1960). The chief soils are leached sands on the low dunes and small areas of other sandy soils (Northcote et al, 1960). These soils are known to have a low Phosphorus Retention Index (PRI), and it is considered that the proposed clearing of deep-rooted perennial vegetation is likely to result in increased nutrient loss from the soil profile (McPharlin et al, 1990).

Soils within the applied area are part of the Bassendean Dune System, which are described as deep pale sands that are deep light grey sand over yellow sand (DAFWA, 2008). These soils have a high to very high risk of wind erosion and phosphorus export, which may contaminate groundwater and wetlands (DAFWA, 2008). The high erosion potential is due to the sandy nature of the topsoil and without appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces the proposal would be likely to cause land degradation.

Given the sandy soils, it is considered that the proposed clearing of approximately 14.9ha of native vegetation is likely to cause appreciable land degradation in the form of wind erosion and eutrophication; however, these risks may be managed in the short-term through wind-break fencing and hydromulching (Cardno BSD, 2009). Therefore, it is considered that clearing as proposed may be at variance to this Principle.

Methodology

References:
- Cardno BSD (2009)
- DAFWA (2008)
- McPharlin et al (1990)
- Northcote et al (1960)

GIS Database:
- Soils, Statewide

(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 two conservation reserves within the local area (5km radius) being Moore River National Park, located ~1.2km south and Namming Nature Reserve, located approximately 5km north-west of the area under application.

A site inspection (DEC, 2009) of the area under application identified the vegetation as Banksia woodland in excellent condition. Aerial imagery of the local area shows some vegetated connectivity in an east-west and north-south direction, which is likely to provide an ecological linkage from the 14.9ha of native vegetation to the adjacent vegetated areas and the nearby conservation area. This vegetation under application may support fauna utilising the conservation areas and maintain fauna movement and migration across the local landscape.

Given the occurrence of 14.9ha of native vegetation in excellent condition with some connectivity to the nearby conservation areas, it is considered that the clearing as proposed may have an impact on the environmental values of nearby conservation areas through restricting fauna movement.

Methodology

Reference:
- DEC (2009)

GIS databases:
- DEC Managed Lands and Waters
- Gingin 50cm Orthomosaic - Landgate06

(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 may be at variance to this Principle

The nearest wetland is a Conservation Category Wetland (CCW) located ~200m west of the area under application. This wetland is located outside of the critical zone of influence (within 50m of mapped wetlands) and the secondary zone of influence (within 200m of mapped wetlands) (Hill et al, 1996). Although the area under application is outside of the secondary zone of influence, the cumulative effect of clearing within the local area may contribute to rising groundwater levels. This may result in an increase in salinity in the nearby wetland.

The nearest watercourses, Moore River and Whitfield Brook, are located approximately 1.7km north and 3.6km south-east of the area under application, respectively.

The area under application is not located in a Public Drinking Water Source Area. The area under application is considered to have approximately 1 ha of low to moderate salinity risk and approximately 4.5 ha of high salinity risk.

DAFWA (2008) has advised that there is a high risk of eutrophication. In addition, there will be increased recharge associated with the clearing and phosphorous loss across the area to be cleared (DAFWA, 2008).

Given the vegetation under application is in excellent condition, and there is a high risk eutrophication and increased recharge; the clearing as proposed may cause deterioration in the quality of ground water or surface water.

Methodology

References:
- DAFWA (2008)
- Hill et al (1996)

GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Public Drinking Water Source Areas (PDWSAs)
- Rivers
- Salinity Risk 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 nearest wetland is a Conservation Category Wetland (CCW) located ~200m west of the area under application. The nearest watercourses, Moore River and Whitfield Brook, are located approximately 1.7km north and 3.6km south south-east of the area under application, respectively.

Given the distance to the nearest wetland and watercourses the proposed clearing is not considered likely to cause or increase the incidence or intensity of localised waterlogging and flooding.

Methodology

GIS Databases:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Rivers

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

Comments

The Department sent a letter to the applicant on the 21 May 2009. A response letter was received from the applicant on 22 June 2009. The applicant's (RPS Environment Pty Ltd) summary response to the identified environmental issues was:

- The subject area does not provide significant fauna habitat due to the subject areas small size, poor interface with surrounding bushland and proximity to agricultural operations.
- Prevention of soil erosion is easily achievable through measures regularly employed in the agricultural industry including the use of wind break fencing and hydro mulching.
- The DEC considered the biological diversity of the application with reference to the whole subject area previously survey by Cardno. The level of actual biodiversity within the subject area is not 'significantly' high for Northern Banksia Woodland.

The assessment of the clearing principles has considered the additional information provided.

A submission (2009) for the area under application was received. The submission considered land degradation issues including moisture availability and phosphate eutrophication risk. These issues were considered as part of the assessment. The vegetation proposed to be cleared was considered to contain high conservation banksias and E. todtiana woodland.

DAFWA (2008) advised that there is a potential of contamination of the groundwater and possibly wetlands due to the high risk of phosphorous loss from the site. Therefore, the fertiliser applications and irrigation practices associated with horticultural activities require careful management.

Carnaby's Black-Cockatoo (Calyptorhynchus latirostris) is classified as Endangered under Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act 1999. The clearing as proposed may result in a loss of habitat and foraging sites for this species; therefore, the proposal is likely to require referral to the Commonwealth Department of Environment Heritage Water and the Arts (DEHWA) under the EPBC Act 1999 for Carnaby's Black Cockatoo.

The area under application is within the Proclaimed Groundwater Area of Gingin. Therefore any abstraction of groundwater would require a licence. As the proposed purpose of the clearing is for irrigated olive groves a groundwater licence is required. The Department has been advised that there is a current groundwater licence for lot 5 for the irrigation of 400 ha of olives and 1.5 ha of grapes (Water Direct Pty Ltd, 2008).

The Shire of Gingin Planning (2009) has advised that planning consent for an extension to the existing irrigated horticulture on Lot 5 is supported subject to in-principle support from the Department.

There is no other RIWI Act Licence, Works Approval or EP Act Licence that affects the area under application.

Lot 5 on Plan 13245 is freehold land, zoned Rural under the local Town Planning Scheme.

Methodology

References:

- DAFWA (2008)
- RPS Environment Pty Ltd (2009)
- Shire of Gingin (2009)
- Submission (2009)
- Water Direct Pty Ltd (2008)

GIS databases:

- RIWI Act, Groundwater Areas
- Town Planning Scheme Zones

4. Assessor's comments

Comment

The assessable criteria have been addressed and the clearing as proposed is at variance to Principles (a) and (b); and may be at variance to Principles (g), (h) and (i).

5. References

Cardno BSD (2008) Lot 5 Orange Springs Road and Lot 6 Brand Highway, Gingin: Flora and Vegetation Survey and Wetland Assessment; Version 3, Cardno BSD. TRIM Ref DOC51147

Cardno BSD (2009) Additional information supplied in response to DEC letter, Cardno BSD. TRIM Ref DOC88182

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 DOC48655

DEC (2007) DEC Fauna Habitat Notes.xls. February 2007. Department of Environment and Conservation, Western Australia.

DEC (2008) Priority ecological communities list (August 2008), Department of Environment and Coservation [online] http://www.dec.wa.gov.au/management-and-protection/threatened-species/wa-s-threatened-ecological-communities.html (Accessed 12 May 2009).

DEC (2009) Site Inspection Report for Clearing Permit Application CPS 3074/1, Lot 5 Orange Springs Road. Site inspection undertaken 23/04/2009. Department of Environment and Conservation. TRIM Ref DOC82934

DEC (2009a) Fauna advice for CPS 3074/1; Species and Communities Branch, Department of Environment and Conservation. TRIM Ref DOC92367

EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.

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.

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.

Hill, A.L., Semenuik, C. A, Semenuik, V. Del Marco, A. (1996) Wetlands of the Swan Coastal Plain. Volume 2b, Wetland mapping, classification and evaluation. Wetland Atlas. WRC and DEP. Perth WA.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

McPharlin, I., Delroy, N., Jeffrey, B., Dellar, G. and Eales, M. (1990) Phosphorous retention of sandy horticultural soils on the Swan Coastal Plain, W.A. Journal of Agriculture, Volume 31, 1990.

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

RPS Environment Pty Ltd (2009) Additional information supporting an application for a clearing permit - Lot 5 Orange Springs Road, Orange Springs. TRIM Ref DOC88182

Shah, B. (2006) Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.

Shepherd, D.P. (2007). Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

Shire of Gingin (2009) Advice form Shire of Gingin regarding Planning Consent for Lot 5 Orange Springs Road. TRIM Ref DOC85008

Submission (2009) Direct Interest Submission. TRIM Ref DOC82698

Water Direct Pty Ltd (2008) Information on Licence to Take water for Lot 5 and Lot 6 (Letter), Water Direct Pty Ltd. TRIM Ref DOC55228

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)