Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1592/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: North East Equity Pty Ltd

1.3. Property details

Property: LOT 201 ON PLAN 55361 (WANERIE 6503)

Local Government Area: Shire Of Gingin

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
375.63		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 (Shepherd 2006). 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; and - Caladenia Complex: mosaic of vegetation from adjacent vegetation complexes of Karrakatta, Yanga and Bassendean (Heddle et al. 1980).	The proposal is to clear 375.63ha of native vegetation on a 560ha Lot for developing an olive farm. The applied area has previously been impacted by unlawful clearing activities and comprises of regenerated vegetation. The vegetation under application is located within the Shire of Gingin which has ~56.3% (Shepherd et al 2001) of native vegetation cover remaining, and is bordered to the north and east by the Moore River Nature Reserve. Adjacent properties to the south and west are extensively cleared. The area under application can be divided into three areas based on vegetation condition. The western section of the western portion of the applied area (Area 1) is ~ 70ha in size and ranges in condition from good to excellent. The vegetation under application within this area comprises of low woodland of Banksia sp., Adenanthos sp., Xanthorrhoea sp. and Nuytsia floribunda. A diverse shrub, sedge and herb layer occurs within portions of this area.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation clearing description is based on information obtained from aerial orthomosaics and during the site inspections undertaken 24/01/2007 (TRIM Ref. DOC15242), 17/12/2007 and 14/01/2008 (TRIM Ref. DOC44243). Conditions within the three distinct vegatation types varies, and therefore each area has been assigned a condition rating that corresponds with the predominant vegetation condition rating for that area.
	The second distinct area of vegetation (Area 2) covers an area of ~180ha. This	Completely Degraded: No longer intact; completely/almost	

area is divided by an existing vegetated windbreak and includes the eastern portion of the western half of the applied area (around the historic pivot sites) and the western portion of the eastern half of the applied area.	completely without native species (Keighery 1994)
A site inspection of the area undertaken in January 2007 identified sparse regeneration of Adenanthos sp., Jacksonia sp. and Xanthorrhoea sp. within Section 1, and was determined to be in a degraded to completely degraded condition. The vegetation within Section 2 was observed to comprise more dense regeneration (although still relatively sparse) of predominantly Adenanthos sp. and Jacksonia sp.. Macrozamia riedlei, Stirlingia latifolia and Conostylis sp. were also observed within this section. The vegetation within this section ranged from completely degraded to degraded, with the southern area almost void of any vegetation.	
A subsequent site inspection in January 2008 of Area 2 observed very sparse vegetation cover and regeneration of local species, with the area appearing to have been maintained as a cleared area. Weeds provided the predominant cover, and therefore the vegetation within this area is considered to be in a predominantly completely degraded condition.	
The third distinct area of vegetation (Area 3) is ~125ha in size and covers the eastern portion of the area east of the windbreak. Vegetation within this area ranged in condition from good to excellent, and comprised low open to dense woodland of Banksia sp., Nuytsia floribunda, Jacksonia sp., Eucalyptus sp. and Melaleuca spp.. A diverse shrub, sedge and herb layer was observed within this area. Understorey species observed included but were not limited to Scaevola sp., Patersonia sp., Hibbertia hypericoides, Stirlingia latifolia, Xanthorrhoea sp., Melaleuca sp. and Daviesia sp.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)
Areas of wetland vegetation were observed	

across the applied area.

Weed invasion was high in areas of high disturbance with weed invasion also observed on the perimeter of areas of vegetation in a good or better 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 at variance to this Principle

The vegetation under application has been impacted by historic clearing and comprises of regenerated local species. The area under application (totalling 375.63ha) can be divided into three areas based on vegetation condition. These are described as:

- Area 1 on the western boundary (~70ha) comprising low open Banksia woodland in good to excellent condition with a diverse shrub, sedge and herb layer;
- Area 2 (~180ha) comprising sparse to very sparse regeneration of predominantly Adenanthos sp, with dense weed cover in parts. Vegetation within this area appears to have been maintained as a cleared area (cleared again) and therefore the condition of vegetation within this area is best described as degraded to completely degraded with a low level of biological diversity. This area comprises two areas divided by an existing vegetated windbreak; and
- Area 3 (~125ha) comprising low open to dense Banksia woodland with a predominantly diverse understorey, in good to excellent condition (Site Inspection 2008).

Overall Areas 1 and 3 have been left to regenerate since the initial clearing (Areas 1 and 3) and comprise a high floral diversity (Site Inspection 2008). In addition both areas are considered to provide habitat for local indigenous fauna given presence of suitable foraging plants and presence of a dense understorey suitable for ground-dwelling fauna. The vegetation under application is also considered to comprise both upland and wetland vegetation communities, with localised groves of Melaleuca spp present across the applied area.

A flora and vegetation survey undertaken in August 2007 (Ecoscape 2007) identified a total of 71 native species over four survey sites within the areas under application, with the highest number of native species (35 species) recorded within Area 1 (Ecoscape 2007). Eleven Priority Flora species are also known to occur within a 10km radius of the vegetation under application, of which nine within the same vegetation community and soils as the area under application. No threatened flora was observed during the flora and vegetation survey (Ecoscape 2007) and the results of the survey indicate that the vegetation under application comprises a general low level of biological diversity. However, the Ecoscape (2007) report only surveyed and recorded species from four 10 metre by 10 metre quadrats over 375.63ha and the vegetation under application is considered to comprise a higher level of biological diversity than represented in the survey and may comprise Priority Flora populations. In addition, vegetation adjacent to the Moore River Nature Reserve within the diverse Area 3 was not included in the survey.

Given the good to excellent condition, diverse understorey, presence of wetland and upland vegetation communities within the area under application and possible presence of Priority Flora, the vegetation under application is considered to comprise a high level of floristic diversity. In addition these areas are considered to provide habitat for a number of local indigenous fauna and therefore the vegetation under application is considered to comprise an overall high level of biological diversity.

Methodology

References:
- Ecoscape (2007)
- Site Inspection (2008)
- Western Australian Herbarium (1998-)

GIS Databases:
- CALM Managed Lands and Waters
- DEC SAC Bio datasets, Date accessed 10/03/2008
- Heddle Vegetation Complexes
- Ledge Point Gingin 50cm Orthomosaic - Landgate03
- Pre-European_Vegetation
- Soils, Statewide

(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

The vegetation under application (375.63ha) can be divided into three areas based on vegetation condition. These areas range in condition from good to excellent (Areas 1 and 3, totalling ~195ha) to degraded to completely degraded (~180ha). All three areas have been impacted by historic clearing activities and comprise

regenerated vegetation. However Areas 1 and 3 have been left to regenerate since the initial clearing and comprise areas of high floral diversity and dense, high vegetation (Site Inspection 2008). Area 2 appears to have been maintained as a cleared area and therefore comprises very sparse, low vegetation cover (Site Inspection 2008).

Three fauna species of conservation significance have been recorded within the local area (10km radius), being:
- Carnaby's Black Cockatoo (Calyptorhynchus latirostris) (Endangered);
- Western Brush Wallaby (Macropus irma) (Priority 4), and
- Leioproctus contrarius (Insect) (Priority 3).

Carnaby's Black Cockatoo were observed foraging in trees adjacent to the application area during a site inspection of the property in 2007, in addition to observations of kangaroo droppings and a variety of passerine birds within the applied area (Site Inspection 2007). A subsequent site inspection of the vegetation under application identified Emu (Dromaius novaehollandiae novaehollandiae) and an Australian Bustard (Ardeotis australis) (Priority 4) within the applied area (Site Inspection 2008).

The vegetation under application within Area 2 provides little habitat value for local fauna due to continued disturbance and lack of vegetation cover. However vegetation within Areas 1 and 3 is considered to provide suitable habitat for a number of local native species due to the presence of areas of high floral diversity, structure of the vegetation and presence of upland and wetland vegetation communities. In particular the vegetation is considered to comprise suitable habitat for ground-dwelling species such as Quenda (Isooodon obesulus fusciventer) (Priority 5) that rely on dense vegetation cover and proximity to water (DEC 2007), as well as reptiles that rely on a mix of open and sheltered habitat for body thermoregulation. The vegetation under application also provides suitable foraging plants for a number of local species including Carnaby's Black Cockatoo, with the Northern Region of the Swan Coastal Plain considered to be an important area throughout the season for this species (Shah 2006).

The proposal to clear 375.63ha (~195ha in good or better condition) of native vegetation will result in a direct loss of habitat for local indigenous fauna. In addition, a flora and vegetation survey of the property (Ecoscape 2007) identified numerous birds within the vegetated windbreak on the property, and determined that the windbreak forms a north-south linkage from the Moore River National Park to a series of wetlands to the south. The area of vegetation under application is located directly adjacent to the Moore River Nature Reserve and is considered to provide further connectivity and ecological linkages to the reserve, facilitating the movement of fauna between areas of nearby remnant vegetation, wetlands and conservation areas.

Given the diversity and good to excellent condition of the majority of the area applied to be cleared (~195ha), presence of suitable habitat for a number of indigenous fauna species, sightings of fauna and conservation significant species within the area and values of the vegetation in the movement of fauna into and out of the adjacent Nature Reserve, the vegetation under application is considered to comprise significant habitat for local indigenous fauna.

Methodology

References:
- DEC (2007)
- Shah (2006)
- Site Inspection (2007)
- Site Inspection (2008)

GIS Databases:
- CALM Managed Lands and Waters
- Ledge Point Gingin 50cm Orthomosaic - Landgate03
- SAC Bio dataset, Date accessed 10/03/2008

(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 closest known population of Declared Rare Flora (DRF) is Dryandra mimica located ~12.3km from the vegetation under application. Dryandra mimica is known to occur within different vegetation communities and soils to the vegetation under application, and is therefore not considered likely to occur within the applied area.

Given the distance of the applied area to known DRF populations and presence of different vegetation communities and soil types, the vegetation under application is not considered to include, or be necessary for the continued existence of rare flora.

Methodology

GIS Databases:
- DEC SAC Bio datasets, Date accessed 10/03/2008
- Heddle Vegetation Complexes
- Pre-European_Vegetation
- 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 two known occurrences of Threatened Ecological Communities (TEC) within a 10km radius of the vegetation under application.

The closest known occurrence of a TEC is approximately 4.7kms east of the vegetation under application. This TEC is the vulnerable Floristic Community Type 7 which is described as 'Herb rich saline shrublands in clay pans' (Gibson et al 1994). A known occurrence of the Muchea Limestone TEC occurs ~9.9km from the vegetation under application.

The vegetation under application is associated with a subdued dune-swale landscape with chief soils of leached sands (Northcote et al 1960-68). Furthermore, no clay pans or exposed limestone was observed during site inspections of the applied area, with the soils in the applied area best described as grey/white Bassendean sands (Site Inspection 2007, Site Inspection 2008).

Given the distance to known TEC occurrences and geology of the area under application, the vegetation under application is not considered likely to comprise the whole or a part of, or be necessary for the maintenance of a Threatened Ecological Community.

Methodology

References:
- Gibson et al. (1994)
- Northcote et al. (1960-68)
- Site Inspection (2007)
- Site Inspection (2008)

GIS Databases:
- DEC SAC Bio datasets, Date accessed 10/03/2008
- Soils, Statewide

(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 under application is a component of Beard Vegetation Association 949 (Hopkins et al. 2001) and Heddle vegetation complexes Bassendean North and Caladenia (Heddle et al. 1980) of which 57.0%, 72.0% and 55.0% of Pre-European extent remain respectively (Shepherd 2006, Heddle et al 1980). The vegetation under application is located with the Shire of Gingin which has 56.3% pre-European vegetation extent remaining (Shepherd et al. 2001).

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

The vegetation communities associated with the area of vegetation under application are above the State Governments 30% biodiversity conservation target. In addition, the application area is adjacent to the Moore River Nature Reserve (~4,728ha) and connecting Moore River National Park (~17,239ha)

Therefore, whilst the area of vegetation under application is large (397.63ha) given the high representation of vegetation on a local scale the vegetation is not considered to be significant as a remnant of native vegetation in an extensively cleared area.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In CALM managed land
IBRA Bioregion:				
Swan Coastal Plain**	1,501,456	571,758	38.1	32.7
Shire of Gingin*	315,560	177,688	56.3	
Vegetation type:				
Beard: 949**	218,204	124,461	57.0	49.3
Heddle***:				
Bassendean Complex North	74,147	53,384	72.0	27.5
Caladenia Complex	9,660	5,309	55.0	12.6

* (Shepherd et al. 2001)
** (Shepherd 2006)

*** (Heddle et al 1980)

Methodology References:
- Commonwealth of Australia (2001)
- Heddle et al. (1980)
- Hopkins et al. (2001)
- Shepherd et al. (2001)
- Shepherd (2006)

GIS Databases:
- CALM Managed Lands and Waters
- Heddle Vegetation Complexes
- Interim Biogeographic Regionalisation of Australia
- Ledge Point Gingin 50cm Orthomosaic - Landgate03
- Local Government Authorities
- Pre-European_Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments

Proposal is at variance to this Principle

There is one Conservation Category Wetland (CCW) mapped within the vegetation under application in the north west portion and approximately four CCW directly adjacent to the vegetation under application on the north west corner and southern boundary. There are several additional wetland systems within a 5km radius, including CCW, Resource Enhancement and Multiple Use wetlands. Wetland vegetation and waterlogged areas were also observed outside the mapped wetland locations within the areas under application, with Melaleuca spp groves observed within Areas 1 and 3 (Site Inspection 2008).

CCW are wetlands with high ecological values and are the highest priority wetlands for protection. CCW are recognised under objective one of the Wetlands Conservation Policy for Western Australia (Government of Western Australia 1997) as valuable with the objective being to prevent the further loss or degradation of valuable wetlands and wetland types, and to promote wetland conservation, creation and restoration. A wetland buffer of 50-200m is recommended to all developments to protect wetland values and functions (Water and Rivers Commission 2001).

As the area under application comprises a mapped wetland, wetland vegetation communities and is located within close proximity to four additional mapped CCW (the closest point being within 20m) the vegetation under application is considered to be growing in, and in association with an environment associated with a wetland.

Methodology References:
- Government of Western Australia (1997)
- Site Inspection (2008)
- Water and Rivers Commission (2001)

GIS Databases:
- EPP, Lakes
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear
- Clearing Regulations - Environmentally Sensitive Areas

(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 area of vegetation under application is located within the Bassendean dune system, and is associated with a subdued dune-swale landscape with chief soils of leached sands (Northcote et al. 1960-68). Due to the high infiltration rates of the sandy soils combined with the low gradient on site, the proposed clearing is not considered likely to result in water erosion.

Bassendean sands are associated with predominantly loose, dry sands, and therefore DAFWA (2006) advise that land degradation in the form of wind erosion is likely to result from the proposed clearing of 375.63ha of native vegetation. Whilst a portion of the application area (Area 2, totalling ~ 180ha) is currently sparsely vegetated due to clearing impacts, the weed and sparse native vegetation cover within this area currently provides some relief from strong wind exposure. Further, the proposed clearing of Areas 1 and 3 (totalling ~195ha) of dense, deep rooted perennial vegetation and re-clearing of sparse vegetation cover within Area 2 will result in two large exposed surface areas (~200ha in size) subject to wind erosion. High risks of wind erosion within the application area were identified as a land degradation issue in 2005 when a Soil Conservation Notice was placed over the application area following the initial unlawful clearing activity. The aim of this notice was to prevent wind erosion by protecting remaining vegetation, allowing regeneration and replanting areas for windbreaks and crops. A cover crop between olive trees, particularly in the establishment phase would be required to reduce risk of wind erosion (DAFWA 2006).

Bassendean sands are known to have a low Phosphorus Retention Index (PRI), and it is considered that the proposed clearing of ~195 hectares of dense, deep-rooted perennial vegetation is likely to result in increased nutrient loss from the soil profile. This nutrient loss may result in eutrophication to nearby surface water areas (wetlands).

Given the high risk of wind erosion and potential impact of eutrophication on nearby wetlands, it is considered that the proposed clearing of 375.63 hectares is likely to cause appreciable land degradation Therefore, the proposed clearing is considered to be at variance to this Principle.

Methodology

References:
- DAFWA (2006)
- Northcote et al. (1960-68)

GIS Databases:
- Ledge Point Gingin 50cm Orthomosaic - Landgate03
- 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 is at variance to this Principle

The vegetation under application is bordered on the northern and eastern boundary by the Moore River Nature Reserve. The Moore River Nature Reserve is ~4728ha in size, and has been reserved for the purpose of flora and fauna conservation. The Nature Reserve is connected in the north to the Moore River National Park (~17,239ha).

A flora and vegetation survey of the property (Ecoscape 2007) identified numerous birds within the vegetated windbreak on the property, and determined that the windbreak forms a north-south linkage from the Moore River National Park to a series of wetlands to the south. The vegetation adjacent to the Nature Reserve (Area 3, ~125ha) comprises areas of diverse, dense vegetation in good to excellent condition (Site Inspection 2008), and is also considered to provide suitable habitat and significant linkage values for fauna movement in to, and out of, the Nature Reserve to nearby wetland areas. In addition the vegetation within Area 3 is considered to provide a significant buffer to the Nature Reserve (~600m wide across a 2km stretch) on the eastern boundary of the reserve, maintaining flora dispersal, and limiting the spread of weeds and reducing edge effects from adjacent cleared areas. Area 2, whilst being in a degraded to completely degraded condition (Site Inspection 2008), is also considered to provide some buffer values to the adjacent Reserve by reducing the additional spread of weeds from cleared areas in the south.

The proposed clearing of 375.63ha will result in a 4km open eastern border to the Moore River Nature Reserve and result in a direct loss of habitat for local fauna. The proposed clearing is likely to have adverse impacts on the adjoining Moore River Nature Reserve by limiting the dispersal of flora and fauna from the reserve to remnant vegetation areas to the south, and increasing edge effects. Loss of habitat, particularly within Area 3, is likely to lead to increased habitat squeeze within the Nature Reserve and greater competition between species for resources.

Given the proposal?s location directly adjacent to a Nature Reserve, proposed direct loss of 375.63ha habitat and the values of the application area as a buffer to the Reserve and ecological corridor, the proposed clearing is considered likely to have an impact on the environmental values of the Moore River Nature Reserve.

Methodology

Reference:
- Ecoscape (2007)
- Site Inspection (2008)

GIS Databases:
- CALM Managed Lands and Waters
- EPP, Lakes
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Ledge Point Gingin 50cm Orthomosaic - Landgate03

(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 vegetation under application is not located within any Public Drinking Water Source Areas (PDWSA) or PDWSA Protection Zones.

There is one Conservation Category Wetland (CCW) mapped within the vegetation under application in the north west portion and approximately four CCW directly adjacent to the vegetation under application on the north west corner and southern boundary. There are several additional wetland systems within a 5km radius, including CCW, Resource Enhancement and Multiple Use wetlands.

The area of vegetation under application is located within the Bassendean dune system, and is associated with a subdued dune-swale landscape with chief soils of leached sands (Northcote et al. 1960-68). Soils on site are best described as loose, grey/white Bassendean sands (Site Inspection 2008).

Bassendean sands are known to have a low Phosphorus Retention Index (PRI), and it is considered that the proposed clearing of ~195 hectares of dense, deep-rooted perennial vegetation (Areas 1 and 3) is likely to result in increased nutrient loss and nutrient mobilisation from the soil profile, as well as increased groundwater recharge (DAFWA 2006). Additional clearing of sparse vegetation within Area 2 may also contribute to nutrient loss and mobilisation and recharge.

As the vegetation under application contains wetland areas, the proposed clearing is considered likely to directly impact on the quality of water in these mapped and unmapped areas. In addition, lateral flow within the soil profile is generally in a southerly direction towards the larger wetland areas (Ecoscape 2007). Therefore, the proposed clearing and mobilisation of nutrients from 375.63ha in conjunction with increased recharge resulting from the clearing, may lead to eutrophication of nearby surface water areas (Conservation Category wetlands). Therefore the proposal may be at variance to this Principle.

Methodology

References:
- DAFWA (2006)
- Ecoscape (2007)
- Northcote et al. (1960-68)
- Site Inspection (2008)

GIS Databases:
- Clearing Regulations - Environmentally Sensitive Areas
- EPP, Lakes
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)
- Soils, Statewide

(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 of vegetation under application is located within the Bassendean dune system, and is associated with a subdued dune-swale landscape with chief soils of leached sands (Northcote et al. 1960-68). Soils on site are best described as loose, grey/white Bassendean sands (Site Inspection 2008).

Bassendean sands are considered to have a low risk of water logging due to high infiltration rates. Given the high infiltration rates of the sandy soils identified on site, it is not considered likely that the proposed clearing would cause or exacerbate the incidence or intensity of flooding.

Methodology

References:
- Northcote et al. (1960-68)
- Site Inspection (2008)

GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear
- Soils, Statewide

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

Comments

The vegetation under application comprises three distinct vegetated areas. One of these areas (Area 2) is in a completely degraded condition and appears to have been maintained as a cleared area (recleared) since the initial unlawful clearing activity and site inspection undertaken in 2007 (Site Inspection 2008). This area of vegetation is currently under investigation.

Eleven Priority Flora species are also known to occur within a 10km radius of the vegetation under application, of which nine within the same vegetation community and soils as the area under application. Whilst no threatened flora was observed during the flora and vegetation survey (Ecoscape 2007), given the limited area and locations surveyed the vegetation under application may comprise Priority Flora populations.

The vegetation under application is currently the subject of a Soil Conservation Notice (SCN). The Commissioner has advised that a varied SCN would only be considered in conjunction with the assessment of a clearing permit application (DAFWA 2006).

The proposed establishment of an olive grove adjacent to the Moore River Nature Reserve and within and adjacent to wetland areas is considered likely to impact directly and indirectly on these areas through weed seed and pesticide spray drift, nutrient application and changes to hydrology (Ecoscape 2007). The proposed

establishment of an olive grove also has the potential to significantly wetland values through groundwater abstraction and subsequent reduction of groundwater levels, impacting on groundwater dependent vegetation and modifying existing hydrological regimes (DEC 2008). The proposed clearing will result in no buffer to a Conservation Category Wetland (CCW) and less than the required minimum buffer to adjacent CCW. Appropriate buffers to the wetland areas and the Moore River Nature Reserve would be required if clearing was to be granted.

In 2007 the applicant commissioned a flora and vegetation survey of the area under application in response to correspondence from the Department outlining issues identified during the preliminary assessment of the clearing proposal. The results of the survey indicate that the vegetation under application comprises a general low level of biological diversity, and identify the majority of the area under application as being 'cleared land with very little vegetation' (Ecoscape 2007). In particular, the entire eastern half of the applied area was determined in the survey to comprise very open herbland in a completely degraded condition (Ecoscape 2007). Site inspections of the applied area confirm that ~195ha of the property is vegetated with areas of dense, diverse vegetation cover and a combination of upland and wetland vegetation communities (Site Inspection 2008). In particular, Area 3 (~125ha) within the eastern half of the applied area comprises vegetation in good to excellent condition with a high floral diversity. Given the limited area and locations surveyed (4 quadrats over 375.63ha) the vegetation under application is considered to comprise a higher level of biological diversity than represented in the survey. The Ecoscape (2007) report also provided a brief assessment against the clearing principles and land degradation issues outlined in the Department?s correspondence following the preliminary assessment of the clearing proposal, however these issues are not considered to have been adequately addressed in the survey.

The Shire of Gingin (2006) has no objection to the development of 675ha of irrigated horticulture (olives).

Two direct interest submissions were received.
The first submission opposes the clearing due to the following concerns:
- the area submitted for clearing is substantial;
- the proponent has not been required to discuss why already cleared land is unsuitable for the expansion of horticulture;
- the aerial photos and maps provided by the proponent are lacking in adequate information such as vegetation condition and communities, existing site conditions (topography, hydrology), management plans for the remaining vegetation and an overall site management plan; and
- Given the lack of information available, a comprehensive and appropriately timed flora and fauna survey of the site should be conducted before a decision on the proposed clearing is made (Submission 2006).

The second submission states that it is 'not strongly opposed to the application, however 375.63ha is a large loss of vegetation, particularly when it seems that considerable cleared areas of 1968 Beermullah Rd appear to be undeveloped and/or not in production' (Submission 2006a).

There are no Aboriginal Sites of Significance within the area under application. The area under application is within a Native Title Claim area. However, as the land is privately owned, the clearing as proposed does not fall under the future acts process of the Native Title Act 1993.

The area under application lies within a Rights in Water and Irrigation Act 1914 (RIWI) groundwater area. A water licence sufficient for approximately 245ha of olive trees has previously been granted for this property.

Methodology

References:
- DAFWA (2006)
- DEC (2008)
- Ecoscape (2007)
- Shire of Gingin (2006)
- Site Inspection (2008)
- Submission (2006)
- Submission (2006a)
- Western Australian Herbarium (1998-)

GIS Databases:
- Aboriginal Sites of Significance
- DEC SAC Bio datasets, Date accessed, 10/03/2008
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Heddle Vegetation Complexes
- Native Title Claims
- Soils, Statewide

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Horticulture	Mechanical Removal	375.63	The assessable criteria have been addressed and the clearing as proposed is at variance to Principles (a), (b), (f), (g) and (h); and may be at variance to Principle (i).

5. References

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

DAFWA (2006) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DEC TRIM Ref. DOC12365.

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

DEC (2008) Wetlands Advice for Clearing Permit Application CPS 2252/1. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC47991).

Ecoscape (2007) Lot 201 Beermullah Road West, Wanerie - Interim Report. Prepared for North East Equity. Ecoscape (Australia) Pty Ltd. July 2007.

Gibson et al. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management.

Government of Western Australia (1997) Wetlands Conservation Policy for Western Australia, Department of Conservation and Land Management and the Water and Rivers Commission, Perth WA.

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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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)