



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number: CPS 5398/1
Permit Holder: Shire of Goomalling
Duration of Permit: 8 March 2013 to 8 March 2015

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of upgrading the Goomalling airstrip.

2. Land on which clearing is to be done

Lot 3000 on Deposited Plan 46670 (GOOMALLING 6460)

3. Area of Clearing

The Permit Holder must not clear more than 4 hectares of native vegetation within the area hatched yellow on attached Plan 5398/1.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition #1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

6. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

7. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

8. Weed control

- (a) When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:
 - (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
 - (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.
- (b) At least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.

9. Fauna management

- (a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* who shall identify *habitat tree(s)* that contain hollows suitable to be utilised as *habitat tree(s)* by fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice*.
- (b) Prior to clearing, any *habitat tree(s)* identified by condition 9(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice*.
- (c) Where fauna are identified in relation to condition 9(b) of this Permit, the Permit Holder shall ensure that no clearing of the identified *habitat tree(s)* occurs, unless first approved by the CEO.

10. Offsets

As part or all of the clearing to be done is or may be at variance with one or more of the clearing principles the Permit Holder must prepare and submit an *offset proposal* prior to 8 September 2013 and implement the *offset* in accordance with conditions 10(a) and 10(b) of this Permit.

- (a) Determination of *offsets*:
 - (i) in determining the *offset* to be implemented with respect to a particular area of native vegetation proposed to be cleared under this Permit, the Permit Holder must have regard to the *offset* principles contained in condition 10(b) of this Permit;
 - (ii) once the Permit Holder has developed an *offset proposal*, the Permit Holder must provide that *offset proposal* to the CEO for the CEO's approval prior implementing the *offset*;
 - (iii) the Permit Holder shall implement the *offset proposal* approved under condition 10(a)(ii); and
 - (iv) the *offset proposal* shall include a *direct offset*, timing for implementation of the *offset proposal* and may additionally include *contributing offsets*.
- (b) For the purpose of this condition, the *offset* principles are as follows:
 - (i) *direct offsets* should directly counterbalance the loss of the native vegetation;
 - (ii) *contributing offsets* should complement and enhance the *direct offset*;
 - (iii) *offsets* are implemented only once all avenues to avoid, minimise, rectify or reduce environmental impacts have been exhausted;
 - (iv) the environmental values, habitat, species, *ecological community*, physical area, ecosystem, landscape, and hydrology of the *offset* should be the same as, or better than, that of the area of native vegetation being *offset*;
 - (v) a ratio greater than 1:1 should be applied to the size of the area of native vegetation that is *offset* to compensate for the risk that the *offset* may fail;
 - (vi) *offsets* must entail a robust and consistent assessment process;
 - (vii) in determining an appropriate *offset*, consideration should be given to ecosystem function, rarity and type of *ecological community*, vegetation *condition*, habitat quality and area of native vegetation cleared;
 - (viii) the *offset* should either result in no net loss of native vegetation, or lead to a net gain in native vegetation and improve the *condition* of the natural environment;
 - (ix) *offsets* must satisfy all statutory requirements;
 - (x) *offsets* must be clearly defined, documented and audited;
 - (xi) *offsets* must ensure a long-term (10-30 year) benefit; and
 - (xii) an *environmental specialist* must be involved in the design, assessment and monitoring of *offsets*.

PART III - RECORD KEEPING AND REPORTING

11. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the species composition, structure and density of the cleared area;
 - (ii) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to fauna management pursuant to condition 9 of this Permit:
 - (i) the location of each habitat tree identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the species name of fauna reasonably likely to utilise, or that have been observed utilising, the habitat/habitat tree(s);
 - (iii) the location and date where relocated fauna was released, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
 - (iv) a copy of the fauna specialist's report.
- (c) In relation to the offset of areas pursuant to condition 10:
 - (i) the location of any area of *offsets* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the *offset* activities undertaken; and
 - (iii) the size of the *offset* area (in hectares).

12. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 11 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 8 December 2014, the Permit Holder must provide to the CEO a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

condition means the rating given to native vegetation using the *Keighery scale* and refers to the degree of change in the structure, density and species present in the particular vegetation in comparison to undisturbed vegetation of the same type;

contributing offset/s has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9: Environmental Offsets*, January 2006;

direct offset/s has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9: Environmental Offsets*, January 2006;

ecological community/ies means a naturally occurring biological assemblage that occurs in a particular type of habitat (English and Blythe, 1997; 1999);

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

fill means material used to increase the ground level, or fill a hollow;

habitat tree(s) means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater, that contains or has the potential to develop hollows or roosts suitable for native fauna;

Keighery scale means the vegetation condition scale described in *Bushland Plant Survey: A Guide to Plant Community Survey for the Community (1994)* as developed by B.J. Keighery and published by the Wildflower Society of WA (Inc). Nedlands, Western Australia;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

offset proposal means an *offset* determined by the Permit Holder in accordance with condition 10 of this Permit;

offset/s means an offset required to be implemented under condition 10 of this Permit;

weed/s means any plant -

- (a) that is declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*; or
- (b) published in the Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
- (c) not indigenous to the area concerned;

Wildlife Conservation (Specially Protected Fauna) Notice means those fauna taxa gazetted as rare fauna pursuant to section 14(4)(a) of the *Wildlife Conservation Act 1950* (as amended).



M Warnock
A/MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

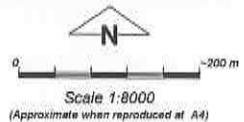
14 February 2013

Plan 5398/1



LEGEND

- | | |
|-------------------------|---|
| Clearing Instruments | Local Government Authorities |
| Areas Approved to Clear | Goomalling 50cm Orthomosaic - Landgate 2006 |
| Road Centrelines | |
| Cadastre | |
| Cadastre for labelling | |



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

M Warnock Date 14/2/13
 M Warnock

Officer with delegated authority under Section 20 of the Environmental Protection Act 1985

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation

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1. Application details

1.1. Permit application details

Permit application No.: 5398/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Goomalling

1.3. Property details

Property: LOT 3000 ON DEPOSITED PLAN 46670 (GOOMALLING 6460)
Local Government Area: Shire of Goomalling
Colloquial name: Goomalling Airstrip

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4		Mechanical Removal	Infrastructure Maintenance

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 14 February 2013

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: 1049 - Medium Woodland: Wandoo, York Gum, Salmon Gum, Morrel and Gimlet (Shepherd et al, 2001).	The application is to clear 4 hectares of native vegetation for the purpose of upgrading the Goomalling airstrip. The proposed clearing is to extend the existing airstrip to include an extra 200 metres to the north and an extra 30 metres in width. The vegetation under application is in very good (Keighery 1994) condition and consists of open woodland containing predominantly Wandoo, Gimlet, York Gum and Salmon Gum trees. Most of the trees are 10-25 metres tall and some such as Wandoo contain potential fauna hollows (DEC 2013).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The condition and description of the vegetation has been determined by a site inspection by a Department of Environment and Conservation officer (DEC 2013) on 16 January 2013 and aerial imagery (Goomalling 50cm Orthomosaic - Landgate 2006).

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 application proposes to clear 4 hectares of native vegetation for the purpose of upgrading the Goomalling airstrip. The 4 hectares of clearing is to extend the old airstrip to include an extra 200 metres to the north and an extra 30 metres in width.

The vegetation under application is in very good (Keighery 1994) condition and consists of open woodland containing predominantly Wandoo, Gimlet, York Gum and Salmon Gum trees. Most of the trees within the application area are 10-25 metres tall and some such as Wandoo contain potential hollows for local and threatened fauna species (DEC 2013). In particular, providing nesting habitat for Carnaby's Cockatoo (*Calyptorhynchus latirostris*). The area under application also provides suitable habitat for the threatened fauna species *Idiosoma nigrum* (Shield-backed Trapdoor Spider), previously recorded 800 metres to the east of the application area (DEC 2013).

The application area is mapped as Beard Vegetation Association 1049 which is significantly under-represented within the Avon Wheatbelt region due to historic clearing. The conservation of this woodland association is of critical importance as it is restricted to and hence endemic to the Wheatbelt region. Approximately 7 percent of

the original extent of this vegetation association remains, with less than 6 percent of this being protected within DEC estate (Government of Western Australia 2011). As the application area is in very good (Keighery 1994) condition, it is considered for the vegetation to represent this highly cleared vegetation association.

No threatened or poorly known flora species are known to occur within or adjacent to the application area. However, this lack of data may be due to a lack of historic survey effort. There are numerous records of priority flora occurring within a 10 kilometre radius of the application area, some occurring within the same soil and vegetation association as the application area.

More than half of the application area (southern half) is located within the buffer zone for the Priority 1 Ecological Community (PEC) known as Red Morrell (*Eucalyptus longicornis*) Woodland. This Wheatbelt PEC consists of tall open woodlands found on lateritic, ironstone and granite profiles along valley floors usually adjacent to saline areas (DEC 2013). It is characterised by very little understorey (DEC 2013). The Red Morrell Woodland is one of the most poorly reserved woodland types in the Wheatbelt and the remaining fragments are under increasing threat from rising water tables, water logging, salinity, clearing, weed invasion, grazing and inappropriate fire regimes. Due to the valley floor location of the PEC it is particularly vulnerable to any clearing within the buffer zone and the associated impacts of secondary salinity (DEC 2013).

The Red Morrell PEC occurs in the same Beard Vegetation Association (1049) and soil mapping unit as the area proposed for clearing and therefore the application area may be representative of the PEC. An appropriately timed flora survey is necessary to establish if this PEC occurs within the application area. Keighery (2000) recommends that "considerable effort should be put into protecting and rehabilitating all known Red Morrell communities in the Western Australian Wheatbelt".

Considering the vegetation under application is of a vegetation association that is endemic to the Western Australian Wheatbelt, significantly under-represented in the local area, within the buffer zone of a PEC and in very good (Keighery 1994) condition containing potential hollow-bearing habitat trees and habitat for threatened fauna, the application area comprises a high level of biodiversity.

Therefore, the application is at variance to this principle.

Methodology

References

- DEC (2013)
 - Government of Western Australia (2011)
 - Keighery (1994)
 - Keighery (2000)
- ##### GIS Databases
- SAC Bio Datasets - accessed December 2012
 - Pre-European Vegetation

(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

Five conservation significant fauna species have been recorded in the local area (10 kilometre radius) including *Dasyurus geoffroii* (Chuditch), *Idiosoma nigrum* (Shield-backed Trapdoor Spider), *Macrotis lagotis* (Bilby), *Myrmecobius fasciatus* (Numbat) and *Merops ornatus* (Rainbow Bee-eater) (DEC 2007-). Although none of these species have been recorded within the application area, this may be due to lack of surveys conducted.

The vegetation under application is in very good (Keighery 1994) condition and provides suitable habitat for the above species, as well as other local fauna. A site inspection identified a number of trees containing potential fauna hollows (DEC 2013).

A population of *Idiosoma nigrum* (Shield-backed Trapdoor Spider) (Threatened) has been recorded approximately 800 metres to the east of the proposed clearing area. The vegetation under application is of the same Beard Association and soil mapping unit as the area where the record was made. Although the application area may contain suitable habitat for the Shield-backed Trapdoor Spider, the clearing is unlikely to affect the conservation status of the species due to the availability of suitable habitat in the surrounding 250 hectares of remnant vegetation.

The application area may also provide significant habitat for *Calyptorhynchus latirostris* (Carnaby's Cockatoo), endemic to south-western Australia and classified as Endangered under the federal Environment Protection and Biodiversity Conservation Act 1999 and the Wildlife Conservation ACT 1950. Preferred nesting habitat for Carnaby's Cockatoo is in the hollows of live or dead trees in uncleared or remnant areas of eucalypt woodland, mainly within the Wheatbelt region (Cale 2003). Nesting occurs in trees such as Salmon Gum, Wandoo, Red Morrell, York Gum, Gimlet, Tuart, Flooded Gum, Swamp Yate and Marri (Cale 2003). Many of these tree species occur within the application area, with some being large enough to contain nesting hollows (DEC 2013). Therefore, the proposed clearing may contain significant nesting habitat for this species.

There is approximately 10 percent native vegetation remaining within a 10 kilometre radius of the application area. The vegetation to be cleared is part of a larger remnant (approximately 250 hectares) which provides

significant fauna habitat and protection in the extensively cleared landscape. The clearing of the application area will reduce the fauna habitat available within this larger remnant and also the local area.

Considering the vegetation under application is in very good (Keighery 1994) condition, occurs in a highly cleared area and contains suitable habitat for threatened fauna it is considered to be significant fauna habitat.

Therefore, the application is at variance to this principle. Fauna management measures will reduce this impact.

Methodology **References**
- Cale (2003)
- DEC (2007-)
- DEC (2013)
- Keighery (1994)
GIS Databases
-NWLRA, extent of native vegetation

(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 records of rare flora occurring within or immediately adjacent to the application area, though this may be due to a lack of historic survey effort in this area (DEC 2013).

Three species of rare flora have been recorded within the local area (10 kilometre radius), however these species all have different habitat profiles to that occurring in the application area, and have been recorded in different soil types and vegetation associations than the application area (DEC 2013).

Considering the above, it is unlikely that the application area contains rare flora, and therefore is not likely to be at variance to this principle.

Methodology **References**
- DEC (2013)
GIS Databases
- SAC Bio Datasets - accessed December 2012
- Soils, statewide
- Pre-European Vegetation

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments **Proposal is not likely to be at variance to this Principle**
There are no threatened ecological communities recorded within the local area (10km radius).

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

Methodology **GIS Databases**
-SAC Bio Datasets - accessed December 2012

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments **Proposal is at variance to this Principle**
The vegetation under application is mapped as Beard Vegetation Association (BVA) 1049 which retains approximately 7 per cent (56,953 hectares) of the pre-European extent within the Avon Wheatbelt IBRA bioregion (Government of Western Australia, 2011). Approximately 6 per cent of the current extent is held in conservation estate (Government of Western Australia, 2011).

The Shire of Goomalling is highly cleared, with less than 16 per cent of the pre-European vegetation cover remaining (Government of Western Australia, 2011), and there is approximately 10 per cent native vegetation cover remaining within the local area (10 kilometre radius).

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

BVA 1049 is endemic to the Western Australian Wheatbelt and is poorly protected and represented. It is under threat from clearing, grazing, weed invasion and salinity. BVA 1049 was included in the highest priority category for ecosystem protection (category 1) in 2007 (Richardson 2007).

The application area occurs within the 50 metre buffer to the Priority 1 Red Morrel Woodland Community (PEC)

which is particularly vulnerable to salinity risk due to the low lying valley location. The proposed clearing within the buffer zone of this community poses a threat to its integrity; therefore, all vegetation within the buffer zone is of high significance as a vegetation remnant. Vegetation outside the buffer zone that is representative of BVA 1049 is also considered a significant remnant of vegetation due to the extensively cleared landscape and the restriction of the woodland community to the Wheatbelt region.

Given the close location of the application to this PEC, that the entire application area consists of vegetation representative of BVA 1049, and occurs on the same soil type as the PEC, the vegetation under application may also be representative of the PEC.

The vegetation under application is part of a larger fragment (approximately 250 hectares) which may act as an ecological stepping stone between conservation areas and other limited patches of native vegetation on privately owned land in the local area. These stepping stones provide security and resources to assist the movement of fauna and dispersal of flora. The proposed clearing has the potential to impact upon the integrity of this larger remnant, subsequently reducing its longer term viability as a remnant and the ability to act as an ecological stepping stone.

Considering the above, the vegetation under application is a significant remnant within a highly cleared landscape and is therefore at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Avon Wheatbelt	9,517,109	1,732,026	18	10
Shire*				
Shire of Goomalling	183,541	29,680	16	1
Beard Vegetation Association in Bioregion*				
1049	833,384	56,953	7	6

* Government of Western Australia (2011)

Methodology

References

- Government of Western Australia (2011)
 - Richardson (2007)
 - Shepherd et al, (2001)
- GIS Databases**
- Pre-European vegetation
 - SAC Biodatasets, accessed December 2012

(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 six minor non-perennial watercourses arising within close proximity to the application area. Two of the watercourses occur within 100 metres of the application area, two of the watercourses occur within 500 metres and the other two occur within 1 kilometre. The application area is on an elevated area of land and the watercourses flow away from the application area.

There are no watercourses passing through the application area and there is no riparian vegetation present.

Therefore, the application is not likely to be at variance to this principle.

Methodology

GIS Databases

- Hydrography, linear

(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 soils within the application area are described as rolling to hilly with some steep slopes; gneissic rock outcrops common: chief soils are hard neutral red soils and variable areas of other soils are likely (Northcote et al 1960-1968).

Deep rooted native vegetation acts as a natural water pump and the extensive clearing in agricultural areas such as the Wheatbelt causes a rise in the water table, bringing underground salt to the surface. This results in appreciable land degradation, as the land becomes unviable for agriculture and very few native species will

survive in severe salt affected areas. Given the level of salinity in the local area (10 kilometre radius) is already very high, at 14000-35000mg/L, the remaining fragments of vegetation are under considerable threat from further increasing salinity levels.

The clearing of 8 hectares of vegetation in such an extensively cleared landscape poses a risk of contributing to further salinity level increase and land degradation in the local area.

The application is on a slightly elevated area of land, with six watercourses arising nearby and flowing away from the application area. A rise in salinity level at this point in the landscape may cause flow-on effects to surrounding watercourse areas.

Appreciable land degradation may result from a rise in salinity levels caused by the proposed clearing; therefore the application may be at variance to this principle.

Methodology

References

- Northcote et al. (1960-68)
- DEC (2013)
- GIS Databases
- Groundwater Salinity, statewide
- 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 no conservation areas mapped within the local area (10 kilometre radius) however there are several conservation areas mapped within a 25 kilometre radius. The closest conservation area is Walyormouring Nature Reserve occurring 13 km to the north and there are unnamed nature reserves occurring to the east and south of the proposed clearing.

The vegetation under application is part of a larger fragment (approximately 250 hectares) which may act as an ecological stepping stone between conservation areas and other limited patches of native vegetation on privately owned land in the local area. These stepping stones provide security and resources to assist the movement of fauna and dispersal of flora. The proposed clearing has the potential to impact upon the integrity of this larger remnant, subsequently reducing its longer term viability as a remnant and the ability to act as an ecological stepping stone. This may have an impact on the security of fauna and flora populations within nearby conservation reserves.

A study by Abensperg-Traun and Smith (1999) concluded that remnant woodlands, of all sizes, are important in sustaining small native animals such as arthropods (e.g. scorpions and beetles) and reptiles (skinks and geckos) as a stepping stones for dispersing individuals or providing habitat to sustain populations, and as such should be protected.

Considering the potential for the proposed clearing to reduce the ability of the larger fragment of vegetation to act as an ecological stepping stone between conservation areas, the application may be at variance to this principle.

Methodology

References

- Abensperg-Traun and Smith (1999)
- GIS Databases
- DEC, tenure

(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 clearing under application is within the Avon River Catchment Area as proclaimed under the Rights in Water and Irrigation Act 1914.

The application is on a slightly elevated area of land, with six watercourses arising nearby and flowing away from the application area. Two watercourses occur within 100 metres of the application area, two watercourses occur within 500 metres and the other two occur within 1 kilometre.

The application area is subject to an extremely high salinity level of 14000-35000mg/L. The clearing of 8 hectares of vegetation within such an extensively cleared landscape may further increase the level of salinity and may also have the potential to affect the quality of the surface water.

Therefore, the application may be at variance to this principle.

Methodology

GIS Databases

- Groundwater Salinity, statewide
- Hydrography, linear

(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 on sloping topography and subject to a low average annual rainfall of 400mm. Considering this, the proposed clearing is unlikely to cause or exacerbate flooding.

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

- Methodology** GIS Databases
- Rainfall, Mean Annual
 - Topographic Contours, Statewide

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

Comments

The application is to clear 4 hectares of native vegetation for the purpose of upgrading the airstrip in Goomalling. This air strip is to be used by the Royal Flying Doctors Service and recreational flights by superlight planes. The application area may also be used for training and commercial flights if required.

The proposed clearing of 4 hectares includes remnant vegetation surrounding an existing existing airstrip, in order to widen and lengthen the airstrip to meet the Royal Flying Doctor Service safety standards.

The existing airstrip is not currently in use and was revegetated in 2007 by the Shire of Goomalling. This area of revegetation (approximately 4 hectares) is not classified as 'native vegetation' under the Environmental Protection Act 1986, therefore not requiring a permit to be cleared.

No submissions have been received from the public.

The application area is within Avon River Catchment Area as proclaimed under the Rights in Water and Irrigation Act 1914. No water is required for the purpose of the proposed clearing and therefore no approvals from Department of Water are required.

The application area is zoned "public purposes" under the Town Planning Scheme Zones. The Shire of Goomalling holds a management order for the application area for the purpose of Aerial Landing Ground.

There are no known Aboriginal Sites of Significance within the application area.

- Methodology** GIS Databases
- Aboriginal Sites of Significance
 - RIWI Act, Areas
 - Town Planning Scheme Zones

4. References

- Abensperg-Traun M. and Smith G.T. (1999). How Small is too Small for Small Animals- Four Terrestrial Arthropod Species in Different-Sized Remnant Woodlands in Agricultural Western Australia. *Biodiversity and Conservation*, 8, pages 709-726. Accessed <http://www.springerlink.com/content/1v179530260tx230/fulltext.pdf> 20 May 2010.
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5. 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)