



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 4095/1
Permit Holder:	Greenbase Enterprises Pty Ltd
Duration of Permit:	17 January 2011 to 17 January 2016

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 constructing a footpath.

2. Land on which clearing is to be done

Lot 104 on Deposited Plan 222866 (350 Gill Street Mundaring)

3. Area of clearing

The Permit Holder shall not clear more than 0.0308 hectares of native vegetation within the area shaded yellow on attached Plan 4095/1.

4. Application

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

5. 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

6. Dieback and 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* and *dieback*:

- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (ii) shall only move soils in *dry conditions*;
- (iii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (iv) 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.

Definitions

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

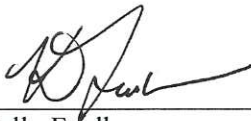
dieback means the effect of *Phytophthora* species on native vegetation;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

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

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;

weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.



Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

23 December 2010

Plan 4095/1



LEGEND

- Clearing Instruments**
- Areas Approved to Clear
 - Road Centrelines
 - Cadastre

Perth Metropolitan Area
North 20cm Orthomosaic -
Landgate 2007



Scale 1:1588
(Approximate when reproduced at A4)
Geocentric Datum Australia 1994

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

[Signature] Date 23/12/10
K. Faulkner

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

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



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Environment and Conservation
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1. Application details

1.1. Permit application details

Permit application No.: 4095/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Greenbase Enterprises Pty Ltd

1.3. Property details

Property: LOT 104 ON PLAN 222866 (House No. 350 GILL MUNDARING 6073)
Local Government Area: Shire of Mundaring
Colloquial name:

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 23 December 2010

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
Mapped Beard vegetation type is described as: medium forest; Eucalyptus marginata (Jarrah) and Corymbia calophylla (Marri) (Shepherd, 2009).	A survey undertaken by Bamford Consulting Ecologists in October 2009 identified that the native vegetation within the area under application is growing in association with a watercourse and includes the native species Corymbia calophylla (Marri), Eucalyptus marginata (Jarrah), Eucalyptus patens (Swan River Blackbutt), Nyssia floribunda (WA Christmas Tree), Taxandria linearifolia (Swamp Peppermint), Astartea fascicularis, Hypocalymma angustifolium (White Myrtle), Banksia nivea (Honeypot Dryandra), and Hakea varia (Variable-leaved Hakea).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The condition of the vegetation under application was determined via digital imagery (Perth Metropolitan Area North 20cm Orthomosaic - Landgate 2007) and through a survey undertaken by Bamford Consulting Ecologists in October 2009.
E.M. Heddle (1980) mapped the vegetation within the area under application as Yarragil Complex (minimum development / permanent swamps) in medium to high rainfall.			
E. Mattiske (1998) mapped the vegetation within the area under application as Yarragil Yg1: open forest of Eucalyptus marginata subsp. marginata (Jarrah) - Corymbia calophylla (Marri) on slopes with mixtures of Eucalyptus patens (Blackbutt) and Eucalyptus megacarpa (Bullich) on the valley floors in humid and subhumid zones.			

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments **Proposal is not likely to be at variance to this Principle**

The proposal is to clear 0.0308 hectares of native vegetation within Lot 104 on Plan 222866, Mundaring, for the purpose of constructing a footpath. The area under application comprises riparian vegetation which is in a good (Keighery, 1994) condition.

In June 2010 a clearing permit (CPS 3677/1) was granted on the same property allowing clearing of 0.3196 hectares for the construction of dwellings. This current proposal to construct a footpath is related to this previously granted permit.

The property under application includes a minor perennial watercourse, being a tributary of Bugle Tree Creek which is located approximately 240 metres north of the area under application and enters Jane Brook. Aerial photography indicates that the area under application is part of a riparian corridor within an area zoned for 'Urban' development, and within a broader landscape that has approximately 80% vegetative cover within a five kilometre radius.

There are no known occurrences of priority ecological communities (PECs) within a five kilometre radius of the area under application. The nearest PEC surveyed site is 'central granite shrublands' (priority 4) located approximately 5.6 kilometres north west of the area under application.

As part of the previous application (CPS 3677/1) over this property Bramford Consulting Ecologists (2010) conducted a habitat survey over Lot 104. This survey identified that the riparian vegetation under application is predominantly in a good condition and likely to provide habitat for a variety of native fauna including *Isoodon obesulus fusciventer* (Quenda or Southern Brown Bandicoot, priority 5) (Bamford Consulting Ecologists, 2010).

Department of Environment and Conservation (DEC) databases indicate that there are 12 records of priority flora within the local area (5km radius). The closest records are *Acacia oncinophylla* subsp. *oncinophylla*, *Adenanthos cygnorum* subsp. *chamaephyton*, *Grevillea pimeleoides* and *Lasiopetalum bracteatum*, all located approximately 400 metres south east of the area under application. Other species include *Halgania corymbosa*, *Boronia tenuis*, *Templetonia drummondii*, *Pimelea rara*, *Lepyrodia heleocharoides*, *Caladenia arrecta*, *Tetratheca pilifera*

The proposed clearing of 0.0308 hectares is not likely to comprise a high level of biodiversity.

Therefore, this proposal is not likely be at variance with this principle.

Methodology

References:

Bamford Consulting Ecologists (2010)

GIS datasets:

- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2009
- Hydrography, linear - DOW 2004
- Hydrography, linear (medium scale, 250K GA) - DOW 1999
- Pre-European Vegetation - Beard 1980
- SAC Biodatasets - Accessed May 2010

(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 not likely to be at variance to this Principle

Aerial photography indicates that the area under application is part of a riparian corridor that continues through adjacent properties to the north and south and which is intersected by four road crossings. Aerial photography also indicates that the landscape has approximately 80% vegetative cover within a five kilometre radius of the area under application.

The native vegetation within the area under application is growing in association with a watercourse (Bramford Consulting Ecologists, 2010). The survey identified that the vegetation present is predominantly in good condition and is likely to provide habitat for a variety of native fauna. In particular, the survey identified that the property under application comprises ideal habitat for *Isoodon obesulus fusciventer* (Quenda or Southern Brown Bandicoot, priority 5), that diggings of this species were observed, and that this species is likely to use the riparian zone as a corridor for movement through the landscape (Bamford Consulting Ecologists 2010).

There are approximately 80 recorded occurrences of fauna of conservation significance within a five kilometre radius of the area under application. The nearest is a 2007 record for Southern Brown Bandicoot approximately 300 metres south east of the area under application. Other records include *Hydromys chrysogaster* (Water-rat, priority 4), *Acanthophis antarcticus* (Southern Death Adder, priority 3), *Dasyurus geoffroii* (Chuditch, threatened). It is likely that *Calyptorhynchus latirostris* (Carnaby's Black-Cockatoo, threatened), *Calyptorhynchus banksii naso* (Forest Red-tailed Black-Cockatoo, threatened), *Morelia spilota imbricata* (Carpet Python, specially protected), *Falco peregrinus* (Peregrine Falcon, specially protected) and *Macropus irma* (Western Brush Wallaby, priority 4) occur within the local area. Some may use the area under application as a corridor for movement through the landscape.

Given the extensive vegetation cover in the local area it is unlikely that the proposed clearing of 0.0308 hectares will comprise significant habitat for fauna indigenous to Western Australia.

Therefore, the clearing as proposed is not likely to be at variance to this principle.

Methodology

References:

Bamford Consulting Ecologists (2010)

GIS datasets:

- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2009
- Hydrography, linear - DOW 2004
- SAC biodatasets - Accessed May 2010

(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

DEC databases indicate that there are a combined 9 recorded occurrences of rare flora within a five kilometre radius of the area under application. Of these, 8 records are of *Acacia aphylla* (Leafless Rock Wattle) and 1 record is of *Grevillea flexuosa* (Tangled Grevillea). The nearest record is for *Acacia aphylla* and is located approximately 2 kilometres north east of the area under application.

Acacia aphylla grows in sand, loam and clay loam soils associated with granite outcrops and hills (WA Herbarium 1998+). *Grevillea flexuosa* grows in red-brown sand with laterite and gravel, and sand over granite, associated with ridgetop plateaus and breakaways (WA Herbarium 1998+). It is unlikely that either of these species occurs within the riparian habitat of the area under application.

It is unlikely that the area under application includes, or is necessary for the continued existence of, rare flora.

Therefore, this proposal is not likely to be at variance with this principle.

Methodology References:
WA Herbarium (1998+)

GIS datasets:
- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2009
- SAC Biodatasets - accessed April 2010

(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 surveyed occurrences of threatened ecological communities (TECs) within a five kilometre radius of the area under application. It is unlikely that the area under application comprises a TEC, or is necessary for the maintenance of one.

Therefore the clearing as proposed is not likely to be at variance with this principle.

Methodology GIS datasets:
- SAC Biodatasets - accessed April 2010

(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

Aerial photography indicates that the area under application is part of a riparian corridor that continues through adjacent properties to the north and south and which is intersected by four road crossings. Aerial photography also indicates that the landscape has approximately 80% vegetative cover within a five kilometre radius of the area under application.

The area under application is mapped as Beard vegetation association 3 (Shepherd, 2009). In 2009 this vegetation association had approximately 70% of its pre-clearing extent remaining within the Jarrah Forest bioregion, with approximately 80% of the remaining vegetation held in secure land tenure (National Parks, Conservation Parks, Nature Reserves and CALM Managed Lands) (Shepherd, 2009).

Mattiske and Havel (1998) mapped the vegetation within the area under application as Yarragil Yg1. In 1998 this vegetation type had approximately 87.9% of its pre-clearing extent remaining within the Regional Forest Agreement boundary, and is likely to have less pre-clearing extent remaining in 2010.

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).

The statistics available indicate that the vegetation association present within the area under application retains more than 30% pre-clearing extent within the bioregion.

In the context of its size, 0.0308 hectares of native vegetation within a well-vegetated landscape is unlikely to comprise a significant remnant in an area that has been extensively cleared.

Therefore, this proposal is not likely to be at variance with this principle.

Methodology References:
Commonwealth of Australia (2001)
Mattiske and Havel (1998)
Shepherd (2009)

GIS datasets:
- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2009
- IBRA WA (Regions - Sub Regions) - DEH 2004
- Pre-European Vegetation - Beard 1980
- Mattiske Vegetation - CALM 1998

(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**

Aerial photography indicates that the area under application is part of a riparian corridor that continues through adjacent properties to the north and south and which is intersected by four road crossings. The property under application includes a minor perennial watercourse, being a tributary of Bugle Tree Creek. Bugle Tree Creek is located approximately 240 metres north of the area under application, and enters Jane Brook.

A survey undertaken by Bamford Consulting Ecologists in October 2009 identified that the native vegetation within the area under application is growing in association with a watercourse. Native species that grow in association with watercourses or seasonally wet areas (WA Herbarium 1998+) and that were identified within the area under application during this survey include *Taxandria linearifolia* (Swamp Peppermint), *Astartea fascicularis*, *Hypocalymma angustifolium* (White Myrtle), *Eucalyptus patens* (Swan River Blackbutt), *Hakea varia* (Variable-leaved Hakea). In addition the introduced species present indicate a riparian habitat (Bamford Consulting Ecologists, 2010).

Therefore, this proposal is at variance with this principle.

Methodology References:
Bamford Consulting Ecologists (2010)
WA Herbarium (1998+)

GIS datasets:
- Hydrography, linear - DOW 2004
- Hydrography, linear (medium scale, 250K GA) - DOW 1999
- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2009

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

Comments **Proposal is not likely to be at variance to this Principle**

The landform of the area under application is relatively flat and is approximately 265-270 metres above sea level.

The soils and landform within the area under application are mapped as type JZ1, described as dissected plateau having a strongly undulating relief, and with some moderately incised valleys, comprising much of the western part of the Darling Range south of the Swan River, and characterised by lateritic gravels and block laterite with chief soils being ironstone gravels with sandy and earthy matrices (Northcote et al 1960-8).

Groundwater salinity within the area under application is mapped as 500-1000mg/L. Salinity mapping indicates that the area under application sits on a creekline that does not appear to be currently saline. Salinity risk mapping indicates that the area under application sits on a creekline that does not appear to be at risk of increasing salinity.

It is unlikely that this proposal to clear 0.0308 hectares of native vegetation will result in significant land degradation.

Therefore, the clearing as proposed is not likely to be at variance with this principle.

Methodology References:
Northcote et al (1960-8)

GIS datasets:
- Topographic Contours, Statewide - DOLA 2002
- Soils, Statewide - AGWA 1999
- Salinity Risk LM 25m - DOLA 00

- Salinity Mapping LM 25m - DOLA 00
- Groundwater Salinity, Statewide - DOW 2000

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments Proposal is not likely to be at variance to this Principle

The area under application is located approximately 800 metres north of Beelu National Park. Other conservation tenures within a five kilometre radius of the area under application include John Forrest National Park, Parkerville Nature Reserve, an un-named section 5(1)(h) (of the Conservation and Land Management Act 1984) Reserve and Mundaring State Forest.

There are more than 50 Land for Wildlife sites managed for conservation within a five kilometre radius of the area under application. The nearest of these is located approximately 1 kilometre from the area under application.

The area under application is located approximately 1.5 kilometres from a DEC nature conservation covenant site managed for conservation.

Given that the area under application is situated at approximately the same or slightly lower elevation than the nearest conservation areas, and given the distance and landuse between these conservation areas and the area under application, it is unlikely that the proposed clearing will have an impact on these areas in terms of water runoff and sedimentation.

This proposal is not likely to be at variance with this principle.

Methodology

- GIS datasets:
- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2009
 - CALM Managed Lands and Waters - CALM 2005
 - SAC Biodatasets - Accessed May 2010
 - Topographic Contours, Statewide - DOLA 2002

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments Proposal is not likely to be at variance to this Principle

Aerial photography indicates that the area under application is part of a riparian corridor that continues through adjacent properties to the north and south and which is intersected by four road crossings. The area under application includes a minor perennial watercourse, being a tributary of Bugle Tree Creek. Bugle Tree Creek is located approximately 240 metres north of the area under application, and enters Jane Brook.

The area under application occurs within the Swan River and Tributaries Catchment Area listed under the Rights in Water and Irrigation Act 1914. The area under application is located approximately 700 metres north of the Middle Helena Catchment Area Public Drinking Water Supply Area.

Groundwater salinity within the area under application is mapped as 500-1000mg/L. Salinity mapping indicates that the area under application sits on a creekline that does not appear to be currently saline.

The proposed clearing of 0.0308 hectares is not expected to cause deterioration in the quality of surface or underground water.

This proposal is not likely to be at variance with this principle.

Methodology

- GIS datasets:
- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2009
 - Public Drinking Water Source Areas (PDWSAs) - DOW 2009
 - RIWI Act, Groundwater Areas - DOW 2006
 - Hydrography, linear - DOW 2004
 - Hydrography, linear (medium scale, 250K GA) - DOW 1999
 - Topographic Contours, Statewide - DOLA 2002
 - Salinity Risk LM 25m - DOLA 00
 - Salinity Mapping LM 25m - DOLA 00
 - Groundwater Salinity, Statewide - DOW 2000

(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 landform of the area under application is relatively flat with a slope, and approximately 265-270 metres above sea level. The soils are lateritic gravels (Northcote et al 1960). Aerial photography indicates that the area under application is part of a riparian corridor within a landscape that has approximately 80% vegetative cover within a five kilometre radius.

The area under application has an average annual rainfall of 1000 millimetres and an average annual evapotranspiration of 800 millimetres, resulting in an average annual recharge of 200 millimetres.

The proposal to clear 0.0308 hectares of native vegetation is not likely to increase the incidence or intensity of flooding.

Therefore, the clearing as proposed is not likely to be at variance to this principle.

Methodology

References:

Northcote et al (1960)

GIS datasets:

- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2009
- Soils, Statewide - AGWA 1999
- Topographic Contours, Statewide - DOLA 2002
- Rainfall, Mean Annual - BOM 2001
- Evapotranspiration, Areal Actual - BOM 2001

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

Comments

A separate clearing permit (CPS 3677/1) has been granted on this property for the development of 19 aged or dependent persons dwellings.

The proposal was referred to the Shire of Mundaring for development approval on 13 October 2008. The Shire of Mundaring approved the proposed development of 19 aged or dependent persons dwellings (including footpaths) on 23 June 2009 (Shire of Mundaring 2009), subject to conditions, including:

- Revegetation and Weed Management Plan
- Southern Brown Bandicoot Plan
- Nutrient and Irrigation Management Plan
- Drainage Management Plan
- Fire Management Plan
- Dust Management Plan

The land is identified as 'Urban' in the Metropolitan Region Scheme. The land is owned in freehold and therefore native title notification is not necessary. There are no native title claims over the land. There are no Aboriginal sites of significance within the area under application, the nearest is approximately 350 metres south.

Methodology

References:

Shire of Mundaring (2010)

GIS datasets:

- Metropolitan Region Scheme - DPI 2005
- Aboriginal Sites of Significance - DIA 2010
- Native Title Claims - DOJ 2007

4. References

- Bamford Consulting Ecologists (8 January 2010) Habitat Assessment and Management Plan for Southern Brown Bandicoots and their Stream-zone Habitat at Lot 104 (350) Gill Street, Mundaring. Report to Greenbase Enterprises Pty Ltd on a survey undertaken on 28 October 2009.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Hedde, 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.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- 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.
- Shepherd, D.P. (2009) 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.
- Shire of Mundaring (2010) Development Approval for 350 (Lot 104) Gill Street, Mundaring (DEC Ref: A351566).
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed April 2010).

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)