



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 6649/1

File Number: DER2015/001602-1

Duration of Permit: 14 November 2015 to 14 November 2017

PERMIT HOLDER

Gold Right Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 805 on Deposited Plan 38251, Karnup

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 3.91 hectares of native vegetation within the area cross-hatched yellow on attached Plan 6649/1.

CONDITIONS

1. Type of Clearing Authorised/Method

The Permit Holder shall not clear native vegetation unless sewer installation is commenced within one month of the authorised clearing being undertaken.

2. 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.

3. Dieback, Weed & Soil Control

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*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

DEFINITIONS

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

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

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; and

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*;
or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



M Warnock
SENIOR MANAGER
CLEARING REGULATION





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

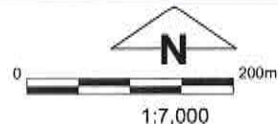
15 October 2015

Plan 6649/1



Legend

-  Roads
-  Local Government Authority
-  Imagery
-  Clearing Instruments Activities



1:7,000
 (Approximate when reproduced at A4)
 GDA 94 (Lat/Long)
 Geocentric Datum of Australia 1994

M Warnock Date *25/10/15*
 M Warnock

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





1. Application details

1.1. Permit application details

Permit application No.: 6649/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Gold Right Pty Ltd

1.3. Property details

Property: LOT 805 ON PLAN 38251, KARNUP
Colloquial name:
Local Government Authority: ROCKINGHAM, CITY OF
DER Region: Greater Swan
DPaW District: SWAN COASTAL
Localities: KARNUP

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 15 October 2015

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
Two Beard vegetation associations and two Heddle vegetation complexes have been mapped within the application area:	Gold Right Pty Ltd (Gold Right) proposes to clear up to 3.91 hectares of native vegetation for the purpose of installing a sewer.	Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The proposed clearing is for the purpose of installing a sewer to facilitate residential development for 'The Vista' residential development within adjacent Lot 806 Mandurah Road.
Beard Vegetation Association 1001 is described as medium very sparse woodland; jarrah, with low woodland; banksia and casuarina (Shepherd et al., 2001);			The central portion of the application area occurs within an area previously disturbed by sand and gravel extraction. A majority of the application area (approximately 2.6 hectares) is in a degraded - completely degraded (Keighery, 1994) condition, with approximately 1.05 hectares in good (Keighery, 1994) condition and 0.25 hectares in very good (Keighery, 1994) condition (Emerge, 2015).
Beard Vegetation Association 998 is described as medium woodland; tuart (Shepherd et al., 2001);			
Heddle Vegetation Cottesloe Complex-Central And\South is comprised of woodland and open forest and closed heath (Heddle et al., 1980); and			
Heddle Vegetation Yoongarillup Complex is comprised of woodland to tall woodland and open forest (Heddle et al., 1980).			

Emerge Associates (Emerge, 2011; 2014) recorded three vegetation communities within the application area, being:

EgSg: Woodland of *Eucalyptus gomphocephala*, *Banksia attenuata* and *Allocasuarina fraseriana* over open shrubland of *Spyridium globulosum* and *Hibbertia hypericoides* over grassland of **Briza maxima* and **Avena barbata* on light brown sands on flats;

MhDa: Open shrubland of *Melaleuca huegelii*, *Templetonia retusa* and *Grevillea preissii* subsp. *preissii* over forbland of *Desmocladius asper*, *Conostylis candicans* subsp. *calcicola* and *Bromus diandrus* on shallow grey sands on limestone ridges; and

HtBd: Shrubland of *Hakea trifurcata*, *Templetonia retusa* and *Spyridium globulosum* over grassland of **Bromus diandrus* and ** Avena barbata* on lower slopes and flats.

3. Assessment of application against clearing principles

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

Comments

Proposed clearing is not likely to be at variance to this Principle

Vegetation proposed to be cleared consists of 3.91 hectares within a linear area in Lot 805 on Deposited Plan 38251, Karnup. The application area is bordered by a main road (Mandurah Road) to the west, Paganoni Road to the north, and a rail line to the east that separates the application area from a Bush Forever site and land associated with Rockingham Lakes Regional Park. A portion of the application area occurs over land previously cleared for quarrying activities, and is in a degraded to completely degraded (Keighery, 1994) condition (Emerge, 2015). The majority of the vegetation in good to very good (Keighery, 1994) condition occurs within the southern portion of the application area (Emerge, 2015).

A flora survey conducted by Emurge Associates (Emerge, 2011) recorded 164 native and 55 introduced flora taxa within the application area and surrounds, including *Pimelea calcicola* (Priority 3), *Beyeria cinerea* subsp. *cinerea* (Priority 3) and *Jacksonia sericea* (Priority 4). One individual of *Pimelea calcicola* and *Beyeria cinerea* subsp. *cinerea* (very edge of application area) were recorded within the application area with further occurrences in adjoining vegetation. *Jacksonia sericea* was recorded from three locations within the application area with further occurrences outside of the application area. Given the conservation status of these species, the limited number recorded and representation within adjoining vegetation the proposed clearing is not likely to impact the conservation status of these species (Emerge, 2014).

A fauna assessment conducted by Harewood (2014) over the pipeline corridor advised that the application area contained two habitat types and may be inhabited by a total of 78 bird, 13 mammal, 35 reptile and two amphibian species, including two threatened, two priority, one other specially protected and one migratory native fauna species. The northern portion of the application area contains suitable foraging habitat for Carnaby's cockatoo, including sheoak, banksia spp., hakea spp., grevillea spp. and eucalyptus spp.. The forest red-tailed black cockatoo may also utilise this habitat for foraging activities. However, similar habitat in better condition occurs within the Bush Forever site adjacent to the application area, and is likely to support a higher diversity of fauna than the vegetation proposed to be cleared.

There are no Threatened Ecological Communities mapped within the application area. The application area occurs within the buffer area for four Priority 3 Ecological Communities (PEC), including two occurrences of the 'FCT24 - Northern Spearwood shrublands and woodlands' ecological community and two occurrences of the 'FCT29a - coastal shrublands on shallow sands' ecological community. The Department of Parks and Wildlife (Parks and Wildlife) (2015a) advise that the proposed clearing appears to intersect approximately one hectare of the Northern Spearwood shrublands and woodlands ecological community and approximately two hectares of the coastal shrublands on shallow sands ecological community, both of which are in good (Keighery, 1994) condition.

The local occurrence of the Northern Spearwood shrublands and woodlands ecological community is mapped as covering approximately 100 hectares, however it is likely that a portion of this area within Lot 805 on Deposited Plan 38251 instead represents the PEC 'coastal shrublands on shallow sands'. Approximately one-third of this area has been recently cleared for residential development and previously disturbed by quarrying activities, while approximately one-third occurs within Bush Forever site 395. The clearing of approximately one hectare of Northern Spearwood shrublands and woodlands is not likely to have a significant impact on this PEC on either a local or regional scale (Parks and Wildlife, 2015a).

The PEC 'coastal shrublands on shallow sands' is mapped over 13.4 hectares within Lot 805 on Deposited Plan 38251 and adjacent properties. According to aerial imagery, the majority of coastal shrublands on shallow sands at this location has not been impacted by recent development. The clearing of approximately two hectares of coastal shrublands on shallow sands is not likely to have a significant impact on this PEC on either a local or regional scale (Parks and Wildlife, 2015a).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Emerge (2011)
Emerge (2015)
Harewood (2014)
Keighery (1994)
Parks and Wildlife (2015a)

GIS Databases:
- Bush Forever
- Cadastre
- SAC bio datasets (Accessed September 2015)

(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 Proposed clearing is not likely to be at variance to this Principle

Two fauna surveys have been conducted over the application area (Harewood, 2011; 2014). The fauna survey conducted by Harewood (2014) recorded two fauna habitat types within the application area:

1. Tuart/ sheoak woodland over shrubland over forbland; and
2. Shrubland/ open shrubland over grassland/ forbland.

The application area provides suitable foraging habitat for the conservation significant Carnaby's cockatoo and the forest red-tailed black cockatoo. Although a number of trees within the application area are of a size that may provide hollows in the future, no hollow-bearing trees were recorded within the application area during the fauna survey conducted in 2011 and 2014 (Harewood, 2011; 2014). Habitat within the application area may also be used by the rainbow bee-eater (*Merops ornatus*; Migratory), quenda (*Isodon obesulus fusciventer*; Priority 5) and the Perth lined Lerista (*Lerista lineata*; Priority 3) (Harewood, 2014). However, given the degraded condition of vegetation, none of these species are likely to occur in large numbers within the application area and populations are instead likely to use this habitat in conjunction with the better quality habitat to the east of the application area.

While some vegetation proposed to be cleared may provide suitable habitat for conservation significant fauna species, the fragmentation of habitat between Lot 805 on Deposited Plan 38251 and adjacent remnants by main roads and a rail line and historic quarrying activity within the property is likely to have decreased the efficacy of this vegetation to both maintain viable populations of various fauna species, and function as an ecological linkage between remnants to the west and east of the application area.

The application area is adjacent to a Bush Forever site that contains similar vegetation to that within the application area. The Bush Forever site appears to be in very good (Keighery, 1994) condition and is likely to provide better quality habitat for fauna. Therefore, the application area is not likely to contain significant habitat for fauna.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Harewood (2011)
Harewood (2014)
Keighery (1994)

GIS Databases:
- Bush Forever

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments **Proposed clearing is not likely to be at variance to this Principle**
 Flora surveys were conducted within the application area and surrounds by Emerge Associates in 2011 and 2014 (Emerge, 2011; 2014). No rare flora species were recorded within or surrounding the application area.
 Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
 Emerge (2011)
 Emerge (2014)

(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 **Proposed clearing is not likely to be at variance to this Principle**
 According to available databases, no Threatened Ecological Communities (TECs) are mapped within or surrounding the application area. A flora survey conducted by Emerge Associated in 2011 recorded three vegetation communities within the application area (Emerge, 2011). None of the vegetation communities recorded within the application area are considered to represent a TEC.
 Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
 Emerge (2011)
 GIS Databases:
 - SAC bio datasets (Accessed September 2015)

(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 **Proposed clearing is not likely to be at variance to this Principle**
 The application area occurs within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 39 per cent of the pre-European vegetation remains (see table below) (Government of Western Australia, 2014). Approximately 29 per cent pre-European vegetation remains within the City of Rockingham, with large areas cleared for residential and agricultural development.

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). Of the Beard and Heddle vegetation types mapped, one (Beard vegetation association 1001) occurs at below the 30 per cent threshold within the Swan Coastal Plain. Beard vegetation association 1001 covers a small portion of the application area in good to completely degraded (Keighery, 1994) condition (Emerge, 2011). Therefore, it is unlikely that this vegetation still represents Beard vegetation association 1001. This Beard vegetation association covers over half of the adjacent Bush Forever site, and according to aerial imagery appears to be in very good (Keighery, 1994) condition.

Based on the largely degraded to completely degraded (Keighery, 1994) condition of vegetation within the application area, the isolation of Lot 805 on Deposited Plan 38251 from adjacent areas by a main road and rail line and the occurrence of a large remnant in very good (Keighery, 1994) condition to the east of the application area, the proposed clearing is unlikely to represent a significant remnant on a local or regional scale.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion* - Swan Coastal Plain	1,501,222	580,697	39	37
Shire* - Rockingham, City Of	26,335	7,688	29	11
Beard Vegetation Association in Bioregion*				
998	50,868	18,866	37	42
1001	57,410	13,240	23	13
Heddle Vegetation Complex **				
Yoongarillup Complex: Woodland To Tall Woodland And Open Forest	24,772.64	9,766	39	20
Cottesloe Complex-Central And\South: Woodland And Open Forest And Closed Heath	45,299.61	15,026	33	13

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Commonwealth of Australia (2001)
Emerge (2011)
*Government of Western Australia (2014)
Keighery (1994)
**Parks and Wildlife (2015b)

(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 **Proposed clearing is not at variance to this Principle**
Three vegetation communities were recorded by Emerge (2011) over the application area, including one woodland and two shrubland communities. No watercourses or wetlands occur over the application area and vegetation is not considered to be riparian in nature.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology References:
Emerge (2011)

GIS Database:
- Hydrography, linear

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
Soils within the application area are mapped as an undulating dune landscape underlain by aeolianite with both brown and siliceous sands (Northcote et al., 1960-68). These soils may be susceptible to wind erosion if large areas are cleared, or if heavy winds occur. However, the restricted size (3.91 hectares) and linear shape of the application area is likely to mitigate land degradation via wind erosion as a result of the proposed clearing. The risk of wind erosion would be further minimised by ensuring vegetation is cleared immediately prior to sewer installation activities.

Approximately 2.6 hectares of vegetation within the application area is in a completely degraded to degraded (Keighery, 1994) condition. The proposed clearing of 3.91 hectares is not likely to cause or increase land degradation within or outside the application area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Keighery (1994)
Northcote et al. (1960-68)

GIS Database:
- Soils, Statewide

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
The application area is located approximately 62 metres west of Bush Forever site 395: Paganoni Swamp and Adjacent Bushland, Karnup (Singleton) (Department of Environmental Protection, 2000). This Bush Forever site provides habitat for conservation significant flora and fauna, and forms part of the Rockingham Lakes Regional Park. Lot 807 on Deposited Plan 38251 located 1.2 kilometres south of the application area also forms part of this Bush Forever site.

While a small portion of this Bush Forever site occurs on the western side of the rail line that occurs to the east of the application area, this rail line mostly separates the area applied to clear from the adjacent conservation area. Remnant native vegetation between the application area and rail line is not proposed to be cleared, and is likely to provide a buffer between the proposed clearing and the adjacent conservation area.

With consideration to the historic quarrying activities that have occurred within Lot 804 on Deposited Plan 38251 and the mostly degraded to completely degraded (Keighery, 1994) condition of vegetation proposed to be cleared, the proposed clearing is not likely to impact the environmental values of Bush Forever site 395.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Department of Environmental Protection (2000)
Keighery (1994)

GIS Databases:
- Bush Forever

(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 Proposed clearing is not likely to be at variance to this Principle

There are no watercourses or wetlands within or immediately surrounding the application area. The proposed clearing of 3.91 hectares, including approximately 2.6 hectares of vegetation in a completely degraded to degraded (Keighery, 1994) condition, is not likely to impact the quality of surface water within the application area or surrounds.

Groundwater salinity within the application area is mapped as 1,000 - 3,000 milligrams per litre Total Dissolved Solids. Groundwater quality is not likely to be impacted as a result of the proposed clearing due to the restricted area of clearing and the mostly degraded to completely degraded (Keighery, 1994) condition of the vegetation proposed to be cleared.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Keighery (1994)

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 Proposed clearing is not likely to be at variance to this Principle

The application area occurs within a dune landscape comprised of brown sands and siliceous sands (Northcote et al., 1960-68), which are likely to be highly permeable to water. Topographical contours within the area have been impacted by quarrying activity, however surface runoff is likely to flow in an easterly direction and towards a rail line. No watercourses or wetland occur within the application area.

The proposed clearing of 3.91 hectares of vegetation in a mostly degraded to completely degraded (Keighery, 1994) condition is not likely to cause or exacerbate the incidence or intensity of flooding within or outside the application area. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Keighery (1994)
Northcote et al. (1960-68)

GIS Databases:
- Hydrography, linear
- Topographic contours, Statewide

Planning instruments and other relevant matters.

Comments The application area is located north of Lot 806 on Deposited Plan 38251, which is the subject of a residential development titled 'The Vista'. The applicant proposes to clear up to 3.91 hectares of native vegetation within 805 on Deposited Plan 38251, Karnup, for the purpose of installing a sewer to facilitate this development.

On 13 October 2015 the Western Australian Planning Commission issued Gold Right Pty Ltd with Approval to Commence Development for the purpose of 'Sewer Pressure Main Line' (WAPC, 2015).

There are no registered Aboriginal Sites of Significance located in the area applied to clear.

The clearing permit application was advertised on 27 July 2015 by the Department of Environment Regulation inviting submissions from the public. No submissions were received.

Methodology References:
WAPC (2015)

GIS Database:
- Aboriginal Sites Register System

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Environmental Protection (2000) Bush Forever: Keeping the bush in the city. Volume 2, Directory of Bush Forever sites. Government of Western Australia, Perth, WA.
- Emerge (2011) Lots 3, 805, 806 and 807 Mandurah Road Karnup: Flora and vegetation survey. Unpublished report prepared by Emerge Associates for Gold Right Pty Ltd.
- Emerge (2014) Flora and Vegetation Assessment - The Vista Karnup Sewer Infrastructure Alignment. Unpublished report prepared by Emerge Associates for Gold Right Pty Ltd.
- Emerge (2015) Clearing permit for the Vista Karnup Sewer Infrastructure Alignment - Lot 805 Mandurah Road Karnup. Prepared by Emerge Associates for Gold Right Pty Ltd.
- Government of Western Australia (2014) 2014 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2014. WA Department of Parks and Wildlife, Perth.
- Harewood (2011) Fauna Assessment Lots 3, 805, 806 and 807 Mandurah Road Karnup. August 2011 Version 2. Unpublished report prepared by Greg Harewood on behalf of Emerge Associates.
- Harewood (2014) Fauna Assessment of Water Corporation Pipeline Route. Mandurah Road/Dampier Drive/Wambro Sound Avenue, Karnup. December 2014 Version 1. Unpublished report prepared by Greg Harewood on behalf of Emerge Associates.
- 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.
- 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.
- Parks and Wildlife (2015a) Advice received from the Department of Parks and Wildlife on 19 august 2015. DER REF: A971580.
- Parks and Wildlife (2015b) 2015 South West Forest and Swan Coastal Plain Vegetation Complex Statistics: a report prepared for the Department of Environment Regulation. Current as of March 2015. Department of Parks and Wildlife, Perth, Western Australia.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- WAPC (2015) Approval to Commence Development on Lots 3, 805 and 806 for the purpose of Sewer Pressure Main Line. Western Australian Planning Commission (DER Ref: A988565).