



1. Application details

1.1. Permit application details

Permit application No.: 3899/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Grant Douglas Creagh

1.3. Property details

Property: LOT 3805 ON PLAN 209083 (House No. 971 WADDI BADGINGARRA 6521)
Local Government Area: Shire of Dandaragan
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2		Burning	Fence Line Maintenance
7		Burning	Grazing & Pasture

1.5. Decision on application

Decision on Permit Application: Refused
Decision Date: 7 April 2011

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
Shepherd (2009) describes vegetation association 1031 is described as Mosaic: Shrublands; hakea scrub-heath / Shrublands; dryandra heath	Vegetation is Open shrubland over heath, with dominant species of Hakea sp, Dryandra spp and Lambertia spp. Vegetation matches the mapped Beard vegetation type (DEC 2010a). Ground cover comprises of Dryandra sp, Drosera sp, Amphipogon sp, Caladenia sp, Astroloma sp, Stylidium sp, Burchardia sp, Anigozanthus sp and Haemodorum sp. Middle storey comprises of Hakea sp, Grevillea sp, Leptospermum sp, Allocasuarina sp, Xanthoroea sp, Hibbertia sp, Labichea sp, Melaleuca sp, Hypocalymma sp, Banksia attenuata and B. menziesii.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation assessed using DEC Site report photos and aerial imagery (DEC 2010a).
As above	There is an old gravel pit at the western end of the applied area, however native species are regenerating well within it.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	As above

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 proposed clearing of 9ha of native vegetation is for grazing and fencing. The clearing is to occur over a closed road reserve that was amalgamated into the above property 21 years ago, with an approx length of 1.5km. The vegetation under application is considered to be in a very good (Keighery, 1994) condition.

The application area is considered to be Open shrubland over heath, with dominant species of *Hakea*, *Dryandra* and *Lambertia*. Ground cover comprises of *Dryandra* sp, *Drosera* sp, *Amphipogon* sp, *Caladenia* sp, *Astroloma* sp, *Stylidium* sp, *Burchardia* sp, *Anigozanthus* sp and *Haemodorum* sp. Middle storey comprises of *Hakea* sp, *Grevillea* sp, *Leptospermum* sp *Allocasuarina* sp, *Xanthorhoea* sp, *Hibbertia* sp, *Labichea* sp, *Melaleuca* sp, *Hypocalymma* sp, *Banksia attenuata* and *B. menziesii* (DEC 2010a).

This vegetation is of high conservation value due to its 'very good' to 'good' condition (Keighery 1994) and diversity of species in a highly cleared landscape. The applied area also connects larger remnants of bushland, therefore acting as a biological corridor, particularly for native fauna in a highly cleared landscape (10% remaining vegetation within the local area). During the site investigation, DEC officer observed a variety of fauna and flora species within the applied area and observed three different vegetation types and soil types (DEC 2010a).

Within the local area (10km radius) there are two records of fauna species of conservation significance. There are 5 records of Carnaby's black cockatoo (*Calyptorhynchus latirostris*), the closest was recorded 2.4km north east (Endangered under the Environment Protection and Biodiversity Conservation Act 1999, Threatened under the Wildlife Conservation Act 1950) and one record of a Peregrine Falcon (*Falco peregrinus*) recorded 8.7 km south of the application area (Specially Protected Fauna under the Western Australian Wildlife Conservation Act 1950).

There are 31 different priority flora species recorded within the local area, with six being priority 1 flora species. The closest priority species were *Acacia epacantha* (P3), *Hypocalymma tetrapterum* (P3) and *Grevillea synapheae* (P1). *Acacia epacantha*, *Verticordia insignis* sbsp. *eomgis*, *Eucalyptus absita* x *loxophleba*, *Grevillea saccata*, *Allocasuarina ramosissima*, *Stylidium aeonioides* and *Melaleuca clavifolia* are only some of the species that are recorded within the same soil and vegetation types as the application area. Due to the very good to good (Keighery 1994) condition of the vegetation and the limited native vegetation remaining in the local area, it is likely that some of these priority species may occur within the application area.

The applicant has advised that the applied "area was once mostly cleared as a road ran through" and "the western end has a gravel pit which was used by the shire and us (applicant) when gravel is required. This is approximately 0.5 hectares". This gravel pit appears not too have been used for some time as it has many native species regenerating well within it (DEC 2010b).

The applicant has advised that "the bush has been invaded by many weed species such as pattersons curse, doublegee, wild radish and many grasses". A site investigation determined that there is an area in the north eastern corner that is heavily weed infested, however the remainder of the remnant is only subject to 'edge effects' with weeds penetrating <2m into the native vegetation (DEC 2010b).

Given the above and the good to very good (Keighery 1994) condition of the vegetation, the potential significant fauna habitats and the diversity of flora present in a highly cleared landscape, it is considered that the proposed clearing is at variance to this Principle.

Methodology **References**
DEC (2010a)
DEC (2010b)
Keighery (1994)
GIS databases
- Sac Biodatsets - accessed August 2010
- Dandaragan 1.4m Orthomosaic - Landgate 2008

(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 area under application consists of open shrubland over heath in a very good (Keighery 1994) condition (DEC 2010a). During the site inspection 8 species of bird were seen, including hawks/falcons circling overhead, potential fauna habitat was also observed including tree hollows, scats, runnels and *Banksia* heath for feeding (DEC 2010a). Given the relatively large size of the application area (9ha), and the fauna habitat observations during the site inspection, it is considered that local fauna utilise the application area for habitat.

Two conservation significant species are recorded in the local area (~10km radius) of the area under application. Carnaby's black cockatoo (*Calyptorhynchus latirostris*), is recorded 2.4km north east (Endangered under the Environment Protection and Biodiversity Conservation Act 1999, Threatened under the Wildlife Conservation Act 1950). Carnaby's black cockatoos move around seasonally in flocks to feeding areas in proteaceous scrubs and heaths and eucalypt woodlands as well as pine plantations. Breeding occurs in winter/spring, mainly in the eastern forests and wheatbelt where they can find mature hollow-bearing trees to nest in (Threatened Fauna Habitats 2007). Potential habitat trees have a diameter, at average adult human chest height, of greater than 70cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts.

Carnaby's black cockatoos are known to feed on seeds, nuts and flowers of a large variety of plants including Eucalypts, Banksia, Hakea, Xanthorrhoea and Grevillea with the entire landscape of the Swan Coastal Plain considered important throughout the non-breeding season for this species (Shah 2006). Shah (2006) concludes that Banksia sp. (Dryandra sp) constitute more than half of the native plant diet of this species and that the greatest numbers of Carnaby's occur in areas where significant expanses of native vegetation, with favoured food sources, are located in close proximity to exotic pine plantations.

The applicant advised that "there is only a small amount of larger trees being redgum and none of these trees are large enough for the Carnaby's black cockatoo to nest. They require large hollows of about 500mm or more". However the area under application supports the favoured native foods of this species and vegetation that provides a food source for Carnaby's black cockatoos is identified as significant habitat. The continual net loss of significant habitat will continue to reduce available food resources for Carnaby's black cockatoos and contribute to its ongoing decline.

There was also one record of a Peregrine Falcon (*Falco peregrinus*) recorded 8.7 km south of the application area (Specially protected under the Wildlife Conservation Act 1950). The applicant advised that "Peregrine falcons exist all over Australia and parts of the world and prefer coastal cliffs for nesting although may nest anywhere such as hollows or old birds nests. The number of these birds can be an indication of the state of the environment". However, the Peregrine Falcon is not confined to a specific habitat. They are found everywhere from woodlands to open grasslands and coastal cliffs. Since 1971 all Australian raptors have been protected by legislation (Department of Sustainability, Environment, Water, Population and Communities 2010). This species is widespread and can survive major habitat clearing and disturbances as long as sufficient prey and nest sites are available. In Australia cleared regions such as the wheatbelt usually have prey such as Galahs and Crested Pigeons in moderate or high abundance. Given the vegetation is in a very good to good (Keighery 1994) condition and the surrounding extensively cleared landscape, the area under application is likely to be significant habitat for many indigenous birds including the Peregrine Falcon.

This section of vegetation also connects larger remnants of bushland, therefore it acts as a biological corridor, particularly for native fauna in a highly cleared landscape.

Given the above it is considered that the proposal is at variance to this principle.

- Methodology** References
- DEC (2010a)
 - Department of Sustainability, Environment, Water, Population and Communities (2010)
 - Keighery (1994)
 - Shay (2006)
 - Threatened Fauna Habitats (2007)
- GIS Databases
- SAC Bio Datasets - accessed August 2010

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

Comments Proposal may be at variance to this Principle

There are four rare flora species recorded in the local area (10 km radius) including *Acacia forrestiana*, *Hakea megalosperma*, *Acacia splendens* and *Eucalyptus absita*. All of these species occur within the same beard 1031 vegetation complex (Shrublands; hakea scrub-heath / Shrublands; dryandra heath) and in similar soil types as the area under application.

Acacia forrestiana is found in lateritic hills and slopes, with laterite and clay loams in either heath or low woodland marri and wandoo (Brown et al 1998). *Hakea megalosperma* occurs in low heath in grey sand and lateritic gravel and occasionally in white or yellow-grey sand (Brown et al 1998). *Eucalyptus absita* grows in dense heath on white sand with lateritic gravel or clayey sand on sandy flats (Brown et al 1998). There were over 40 records of *Acacia splendens* in the local area, with 10 records within 1km away from the applied area. This species is usually found growing in brown gravelly loam along the upper slopes of a lateritic breakaway (Brown et al 1998).

The area under application consists of open shrubland over heath, the eastern end is laterite rise/slope and slowly descends towards the western end, which has heavier soils (DEC 2010a).

Due to the 'very good' condition of the vegetation, and the multiple records of rare flora in close proximity to the applied area, this proposal may be at variance to this principle.

- Methodology** References
- Brown et al (1998)
 - DEC (2010a)
- GIS Databases
- Soils, statewide

-Pre-European Vegetation
 -SAC Bio datasets (6 Jul 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 were no records of threatened ecological communities recorded within the immediate proximity of the area under application.

Given this the proposal is not likely to be at variance to this principle.

Methodology GIS Databases
 -SAC Bio Datasets - accessed August 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 may be at variance to this Principle

The vegetation under application is described as Beard vegetation association 1031 of which there is 34.65% of pre-European extent remaining within the Geraldton Sandplains bioregion (Shepherd 2009).

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).

Although the percentage remaining figures are just above 30%, there is less than 10% native vegetation remaining with in the local area.

Given the highly cleared landscape (approximately 10% remaining vegetation within the local area) the remaining vegetation in the local area is of increased importance as an ecological linkage and therefore the area under application may be considered significant as a remnant.

Therefore the proposal may be at variance to this principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)
IBRA Bioregions*			
Geraldton Sandplains	3 136 025.364	1 410 755.15	44.99
Shire*			
Dandaragan	670 531.14	295 859.53	44.12
Local area	31 400	3 140	10
Beard Vegetation Association*			
1031	269 490.91	89 203.73	33.10
Beard Vegetation Association within Bioregion*			
1031	241 349.97	83 628.76	34.65

*(Shepherd 2009)

Methodology References
 -Shepherd (2009)
 -Commonwealth of Australia (2001)
 GIS Databases
 -Pre-European Vegetation
 -NLWRA, Current Extent of Native Vegetation
 -Interim Biogeographic Regionalisation of Australia

(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 no watercourses or wetlands within the area proposed for clearing, therefore the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Databases
-Hydrography linear,
-Topography, statewide

(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

Mapped soil type Wd40 is described as broad valleys and undulating interfluvial areas; some evenly sloping pediments with exposures of sandstone and shale: chief soils are sandy acidic yellow mottled soils, containing much ironstone gravel in the A horizons, both forming a complex pattern with each other and with lateritic sandy gravels. Mapped soil type AB4 is described as Slopes flanking main trunk valleys; breakaways are common. There are two common sequences of soils. Areas of diatomaceous earths occur on some valley floors (Northcote et al 1960-68).

The proposed clearing of 9 hectares may pose a low risk of land degradation in the form of water and wind erosion. The risk is manageable if best management practices are adopted (DAFWA 2010). Therefore it is concluded that the proposed clearing may be at variance to this principle.

Methodology References
-Northcote et al (1960-68)
-DAFWA (2010)
GIS Databases
-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

The closest conservation area is Minyulo Nature Reserve (R27219) which is located 6.7km south of the area under application.

Given the highly cleared landscape (approximately 10% remaining vegetation within the local area) the remaining vegetation in the local area is of increased importance as an ecological linkage between conservation reserves.

Given this the proposal may be at variance to this principle.

Methodology 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 area under application falls within the groundwater 'Jurien' area covered by the Rights in Water and Irrigation Act 1914.

Groundwater salinity is mapped as 500-1000 (medium). Significant clearing of native vegetation has already occurred on agricultural land within the local area and further clearing may result in increased groundwater salinity. Therefore this proposal may be at variance to this principle.

Methodology GIS Databases
-Hydrography linear,
-Topography, statewide
-Groundwater Salinity

(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

There are no watercourses or wetlands within the area proposed for clearing. Given the sandy nature of the soil within the application area (Northcote et al 1960-68) and the scale of the proposed clearing, it is considered that the proposed clearing is not likely to be at variance to this Principle.

Methodology References
-Northcote et al (1960-68)
GIS Databases
-Soils, statewide

-Hydrography linear

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

Comments

The area under application falls within the agricultural area defined in EPA Position Statement No. 2 (EPA 2000). EPA Position Statement No. 2 (EPA 2000) states that significant clearing of native vegetation has already occurred on agricultural land, leading to a reduction in biodiversity and increase in land salinisation, and therefore any further reduction in native vegetation through clearing for agriculture cannot be supported. The EPA (2000) recommends that all existing native vegetation be protected from passive clearing through, for example, grazing by stock or clearing by other means.

In exceptional circumstances the EPA would consider supporting clearing for agriculture within this region if:

- (a) There are alternative mechanisms for protecting biodiversity.
- (b) The area to be cleared is relatively small, depending on the scale at which biodiversity changes over the area, including extent of vegetation in the surrounding area and recognising that values will vary for different ecosystems.
- (c) The proponent demonstrates that the elements set out in Section 4.3 of this Position Statement are being met. This will require extensive local and regional biodiversity work.
- (d) Land degradation, including aquatic environments and threatening processes, such as dieback, salinisation or disruption of catchment processes, on-site and off-site would not be exacerbated.

The application area falls within the groundwater 'Jurien' area covered by the Rights in Water and Irrigation Act 1914. No information from Department of Water has been received

Town Planning Scheme is zoned as Rural

The applicants submitted the following information;

The applicant advised that they "have set aside and fenced approximately 220 hectares of pristine native vegetation for the purpose of conservation. This bush is well timbered and contains significant flora and fauna. There is also the Mullering nature reserve. These areas are both within 1 kilometre of the proposed site". DEC could not identify these areas in the 2008 aerial mapping. Remaining vegetation within the area does not address the environmental impacts identified in the assessment.

The applicant has advised that "the vegetation proposed for clearing is approximately 40 to 50 metres wide and needs a new fence on each side as well as clearing of at least a 3 metre firebreak as required by the Shire as one side is a boundary with a neighbour. This clearing would be allowable under the 1 hectare limit per year". The applicant was informed of this exemption in a DEC letter dated 14 October 2010.

The applicant has also advised that "as this is a narrow strip of bush it will continue to be invaded by weed species and also there is a considerable rabbit population which has degraded the land as well". The condition of the vegetation was assessed as good to very good (Keighery 1994).

The applicant advised that he "would only be clearing about 4 hectares of the proposed site. The soil type on the other 4 hectares is not suitable, but stock could have access to this area. Also none of the larger trees such as the few redgums and xmas trees would be cleared". Clearing as defined in the EP Act includes grazing where the grazing causes the killing, destruction or any other substantial damage to the native vegetation.

Methodology

References

- EPA 2000
- GIS Databases
- EPA Position paper No 2 Agricultural Region
- RIWI Act, Surface Water Areas
- Environmental Impact Assessments
- Town Planning Scheme Zones

4. References

- Brown A., Thomson-Dans C. and Marchant N. (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DAFWA (2010) Advice from the Commissioner of Soil and Land Conservation (DEC Ref: A338517)
- DEC (2010a) Site Inspection Report for Clearing Permit Application CPS 3899/1, Lot 3805 on Deposited Plan 209083, Badgingarra. Site Inspection undertaken 08/2010. Department of Environment and Conservation, Western Australia. (DEC Ref: A333846)
- DEC (2010b) Additional Information for CPS3899/1 - Grant Creagh Lot 3805 on Deposited Plan 209083. DEC ref: A350651
- Department of Sustainability, Environment, Water, Population and Communities (2010). The Peregrine Falcon (*Falco peregrinus*) Fact Sheet - Environment Australia. Accessed 26/11/2010.
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular

- reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, 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.
- Shah, B. (2006) Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.
- Shepherd, D.P. (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.

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)

