



1. Application details

1.1. Permit application details

Permit application No.: 3154/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Carlo Giovanni Ioppolo

1.3. Property details

Property: LOT 502 ON DIAGRAM 89303 (NORTH BOYANUP 6237)
 Local Government Area: Shire Of Capel
 Colloquial name:

1.4. Application

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

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 1000, which is described as mosaic: medium forest; Jarrah-marri / low woodland; Banksia / low forest; Teatree (<i>Melaleuca</i> ssp.).	The section on the eastern side of the fence line contains very good (Keighery, 1994) condition vegetation with good species diversity, better structure and less evidence of disturbance than other areas under application.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The vegetation condition and description was determined from Site Inspection Report TRIM ref DOC89567).
	The remnant vegetation west of the fence line and in the north west corner of the application area is described as degraded to good condition. This area has obvious signs of disturbance to the structure as a result of stock access and some weed intrusion. There was also considerable death of <i>Banksia</i> ssp. throughout the area with no obvious cause. Little understorey remains within this section and the vegetation appears to be suffering edge effects, particularly on the western side.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	
	The third section is that which is already largely cleared within the south western corner of the application area, and retains scattered mature trees above pasture understorey. This area is considered to be in completely degraded condition as a result of extensive grazing. This area is low lying and slopes towards the wetland just west of the application area.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	

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 is to clear 10ha of native vegetation for the establishment of an olive plantation. The vegetation ranges from completely degraded to very good (Keighery 1994) condition, with some areas historically cleared, and currently grazed by stock (cattle) (DEC 2009b).

The remnant vegetation under application is representative of Beard vegetation association 1000, which is described as mosaic: medium forest; Jarrah-marri / low woodland; Banksia / low forest; Teatree (*Melaleuca* ssp.). The local area (10km radius) contains approximately 25% native vegetation.

A fence line and firebreak running north-south dissects the remnant vegetation, and the area under application can be divided into 3 sections based on the vegetation's condition. The section on the eastern side of the fence line contains more species diversity and better structure than the other areas (DEC 2009b). The vegetation is described as very good (Keighery 1994) condition, with some signs of disturbance, but with little evidence of aggressive weed invasion.

The remnant vegetation west of the fence line and in the north west corner of the application area is described

as degraded to good (Keighery 1994) condition (DEC, 2009b). This area has obvious signs of disturbance to the structure as a result of stock access and some weed intrusion. There was also considerable death of *Banksia* ssp. throughout the area with no conclusive cause. Little understorey remains within this section and the vegetation appears to be suffering edge effects, particularly on the western side (DEC 2009b).

The third section is already largely cleared and is located within the south western corner of the application area. It retains scattered mature trees above pasture understorey (DEC 2009b). This area is considered to be in completely degraded (Keighery 1994) condition as a result of extensive grazing. This area is low lying and slopes towards the wetland just west of the application area.

A large number of priority flora species have been recorded within the local area (10km radius), many of which are within the same soil and vegetation types. Additionally, several priority ecological communities (PEC), including Southern *Banksia attenuata* woodlands, have been recorded within the local area. A vegetation and flora survey is required to determine whether these species and communities are present within the vegetation under application. Given the highly cleared nature of the local area, the good to very good (Keighery, 1994) condition areas within the application area may contain or be necessary for the continued existence of priority flora or PEC.

The Greater Bunbury Regional Scheme (EPA 2003) identifies a regionally significant ecological linkage, the McLarty / Kemberton / Twin Rivers / Preston River / Gwindinup Ecological Linkage, extending north - south along the South Western Hwy, including the vegetation under application. The proposed clearing is likely to contribute to further degradation or disruption of this ecological linkage.

Therefore, whilst the application area is in completely degraded to very good (Keighery, 1994) condition, and much of the understorey has been impacted by historical grazing, the vegetation under application is likely to be important for the biological diversity of the local area and bioregion, given the extent of remaining vegetation. The clearing as proposed is likely to further fragment a highly cleared landscape and is therefore at variance to this principle.

Methodology DEC (2009b)
EPA (2003)
Keighery (1994)

GIS database:

- CALM Managed Lands and Waters - CALM 01/06/05
- SAC Biodatasets - accessed 5 June 09
- Declared Rare and Priority Flora List - CALM 13/08/03
- Pre European Vegetation - DA 01/01
- Clearing Regulations, Environmentally Sensitive Areas 30 May 2005
- NLWRA, Current Extent of Native Vegetation 20 Jan 2001

(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

Eight rare and 5 priority fauna species have been recorded within the local area (10km radius). Of these species, the following have the potential to utilise the area under application because of the veg complexes and suitable habitat on site:

Chuditch (*Dasyurus geoffroii*) are known to have occupied a wide range of habitats from woodlands, dry sclerophyll (leafy) forests, riparian vegetation, beaches and deserts (DEC 2009a).

Isoodon obesulus fusciventer (Quenda), inhabits dense scrubby, often swampy, vegetation with dense cover up to one metre high, and often feeds in adjacent forest and woodland that is burnt on a regular basis and in areas of pasture and cropland lying close to dense cover (DEC 2009a).

Macropus irma (Western Brush Wallaby) optimum habitat is open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets (DEC 2009a).

Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) traditionally inhabited the high rainfall forests of the extreme south-west (DEC 2009a).

Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) are mainly found in uncleared or remnant areas of eucalypt woodland, particularly Salmon Gum *Eucalyptus salmonophloia*, or Wandoo *E. wandoo*, and shrubland and heath country dominated by *Hakea*, *Dryandra* and *Banksia* species (DEC 2009a).

Forrest Red Tailed Black Cockatoo (*Calyptorhynchus banksii naso*) is restricted to the Jarrah *Eucalyptus marginata*, Marri *Corymbia calophylla* and Karri *E. diversicolor* forests of the lower south-west, from Gingin to Albany (DEC 2009a).

Australian Bustard (*Ardeotis australis*) are found in tussock grassland, *Triodia* hummock grassland, grassy woodland, low shrublands, and structurally similar artificial habitats, such as croplands and golf-courses (DEC 2009a).

The local area (10km radius) contains approximately 25% native vegetation, and the vegetation under application has been identified as part of the McLarty / Kemberton / Twin Rivers / Preston River / Gwindinup Ecological Linkage (EPA 2003). The vegetation ranges from completely degraded to very good (Keighery 1994) condition with some areas of good structure, high diversity and low levels of disturbance (DEC 2009b)

The vegetation under application is therefore considered to be both locally significant habitat for fauna, and necessary for the maintenance of other nearby habitats. The clearing as proposed is therefore likely to impact on significant fauna habitat and is at variance to this principle.

Methodology EPA (2003)
DEC (2009a)
DEC (2009b)

GIS database:

- CALM Managed Lands and Waters - CALM 01/06/05
- SAC Biodatasets - accessed 5 June 09
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06

(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**
Two rare flora species have been recorded within the local area (10km radius).

Eleocharis keigheryi grows emergent in freshwater creeks and claypans (WA Herbarium 1998), and as the vegetation where the application extends into areas subject to inundation is in degraded (Keighery 1994) condition, consisting mainly of pasture, this species is not likely to be present within the proposed clearing.

Synaphea sp. Fairbridge Farm grows in sandy soils with lateritic pebbles (WA Herbarium 1998) and the only known population is over 9km north east of the proposed clearing. The vegetation under application is therefore unlikely to support this species.

The application area is not likely to contain or be necessary for the continued existence of rare flora, and as such the proposed clearing is not likely to be at variance to this principle.

Methodology WA Herbarium (1998)
Keighery (1994)

GIS database:

- Declared Rare and Priority Flora List - CALM 13/08/03
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 5 June 09
- Soils, Statewide DA 11/99

(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**
Three threatened ecological communities are mapped within the local area (10km radius), being *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain, dense shrublands on clay flats and herb rich saline shrublands in clay pans (Northcote et al 1968). The soil type is mapped as sandy acidic yellow mottled soils and neutral red earths, however the site inspection revealed grey and white sands present throughout the application area (DEC 2009b). Therefore, the area under application is not likely to support these threatened ecological communities. The clearing as proposed is not likely to be at variance to this principle.

Methodology DEC (2009b)
Northcote et al (1968)

GIS Database:

- SAC Biodatasets - accessed 5 June 09
- Pre European Vegetation - DA 01/01
- Soils, Statewide DA 11/99

(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 application lies within the Shire of Capel and the Swan Coastal Plain IBRA bioregion, which retains 38.84% and 34.08% native vegetation respectively (Shepherd 2007). Orthomosaic imagery suggests the local area (10km radius) is approximately 25% vegetated.

The application area is mapped as consisting Beard Vegetation Associations 1000 and 1182, of which 26.8% and 11.41% of the pre-European extent remains within the Swan Coastal Plain bioregion (Shepherd 2007). The vegetation under application is representative of Beard vegetation association 1000 (mosaic medium forest; Jarrah-marri / Low woodland; Banksia / low forest; Teatree (*Melaleuca* ssp.), with little evidence of 1182 (Medium woodland; *Eucalyptus rudis* and *Melaleuca raphiophylla*) present within the applied area (DEC 2009b).

The vegetation also consists of Heddle Vegetation Complex Bassendean Central and South, of which 27% remains within the Swan Coastal Plain bioregion (Heddle 1980).

Vegetation associations with less than 30% of their pre-European extent remaining are considered to be below threshold levels for species loss, and are therefore critical assets (EPA 2000).

Additionally, the clearing as proposed will contribute to fragmentation of the already extensively cleared landscape and the McLarty / Kemberton / Twin Rivers / Preston River / Gwindinup Ecological Linkage (EPA 2003), of which the vegetation under application is a part.

The clearing as proposed is therefore at variance to this principle.

Methodology DEC (2009b)
EPA (2000)
Heddle (1980)
Keighery (1994)
Shepherd (2007)

GIS Databases:

- Heddle Vegetation Complexes - DEP 22/06/95
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 5 June 09
- NLWRA, Current Extent of Native Vegetation 20 Jan 2001

(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

The application lies 280m west of the Preston River, a major perennial watercourse, and a minor perennial watercourse, tributary to Preston River, flows 160m east of the proposed clearing. A conservation category paulisplain lies 197m east of the proposed clearing, and resource enhancement sumplands 600m north west and 740m south.

The south west corner of the application area is mapped as part of a multi use wetland (area subject to inundation). The vegetation where the application and the area subject to inundation intersect is considered to be in degraded (Keighery 1994) condition, consisting of *Eucalyptus rudis* and *Melaleuca raphiophylla* trees over pasture (DEC 2009b). This section of the application area is therefore considered to be growing in association with a wetland, and as such the proposed clearing is at variance to this principle.

Methodology DEC (2009b)
Keighery (1994)

GIS Databases:

- ANCA wetlands - Environment Australia 26/3/99
- CALM Managed Lands and Waters - CALM 01/06/05
- EPP Lakes Policy Area - DEP 14/05/97
- EPP, Wetlands 2004 (DRAFT) - EPA 21/7/04
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 11/04/07
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06
- Ramsar wetlands - DEC 03

(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 application area is mapped as having a moderate to low risk of Acid Sulfate Soils, and the salinity risk is low.

The soil types mapped within the application area are Wd6, chief soils of sandy acidic yellow mottled soils, and Mu11, chief soils of neutral red earths and neutral yellow earths (Northcote et al 1968). However, a site inspection revealed white and grey sands as being the chief soil types throughout the applied area. This soil is considered to have a high risk of wind erosion.

The south west corner of the area under application is mapped as an area subject to inundation. The clearing of 10 hectares of native vegetation as proposed may incrementally increase the recharge or runoff of water into this wetland. The clearing as proposed may exacerbate the intensity of waterlogging.

Therefore the clearing as proposed may be at variance to this principle.

Methodology Northcote et al. (1968)

GIS database:

- Acid Sulfate Soil Risk Map, Swan coastal Plain - DEC 07/08/06
- Average Annual Rainfall Isohyets - WRC 29/09/98
- Annual Evaporation Contours (Isopleths) - WRC 29/09/98
- Hydrogeology, statewide - DOW 13/07/06
- Hydrography, linear - DOW 13/7/06
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide DA 11/99
- Topographic contours statewide - DOLA and ARMY 12/09/02
- Hydrogeology, Statewide 05 Feb 2002

(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 application area lies 4.2km north of Boyanup State Forest, and 5.3km west of Dardanup Conservation Park. Whilst direct impacts to these conservation areas are not likely to result from the proposed clearing, the vegetation under application has been mapped as part of a regionally significant ecological linkage (EPA 2003). The proposed clearing may contribute to further degradation of this ecological linkage, thereby impinging on flow of genetic material for fauna and flora between conservation areas.

Therefore, the clearing as proposed may be at variance to this principle.

Methodology EPA (2003)

GIS Databases:

- CALM Managed Lands and Waters - CALM 01/06/05
- Hydrography, linear - DOW 13/7/06
- Register of National Estate - Environment Australia, Australian and world heritage division 12 Mar 02
- System 1 to 5 and 7 to 12 areas - DEC 11/7/06

(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 application lies 280m west of the Preston River, a major perennial watercourse, and a minor perennial watercourse, tributary to Preston River, flows 160m east of the proposed clearing.

The south west corner of the application area is mapped as part of a multi use wetland (area subject to inundation). A conservation category paulisplain lies 197m east of the proposed clearing, and resource enhancement sumplands 600m north west and 740m south.

The clearing as proposed may incrementally impact on quality of surface due to the increased recharge and as such may be at variance to this principle.

Methodology GIS database:

- Evapotranspiration Isopleths - WRC 29/09/98
- Groundwater Salinity Statewide DoW 13/07/06
- Hydrographic catchments, catchments - DoW 01/06/07

- Hydrography, linear - DOW 13/7/06
- Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
- Salinity Risk LM 25m - DOLA 00
- Topographic Contours, Statewide - DOLA 12/09/02

(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

Given the size of the application area (10ha), the clearing as proposed is not likely to have a significant impact on the incidence or intensity of flooding. The proposal is therefore not likely to be at variance to this principle.

Methodology GIS database:

- Environmental Impact Assessments - EPA 22/2/07
- Evaporation Isopleths - WRC 29/09/98
- Hydrographic catchments, catchments - DoW 01/06/07
- Hydrography, linear - DoW 13/7/06
- Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The application is within the Shire of Capel and zoned rural. The Shire advises that no planning approval is required for establishment of olive plantations if the holding is greater than 15ha. The holding is 27.0402ha, and as such no development approval is required.

The application lies within the Rights in Water Irrigation Act Groundwater area, and as such a RIWI water license is required. An application has been submitted with Department of Water, but no license has been issued.

A submission was received regarding this application and the points raised, where relevant, have been addressed during the assessment. Additionally, the submission raised concerns about the viability of an olive plantation given the infertile and sandy soils within the application area. It was suggested the plantation is likely to be more successful on the previously cleared pasture areas given the more suitable soil types.

Methodology TRIM ref DOC89775

GIS database:

- Cadastre - Landgate Dec 07
- RIWI Act, Groundwater Areas - DoW 13/07/06
- RIWI Act, Irrigation Districts - DoW 13/07/06
- Town Planning Scheme Zones - MFP 31/08/98

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing is at variance to Principle (a), (b), (e), & (f), may be at variance to Principle (g), (h), & (i) and is not likely to be at variance to the remaining clearing Principles.

5. References

- DEC (2009a). Fauna Species Profiles. Available from: <http://www.dec.wa.gov.au/animals/fauna-management/fauna-species-profiles.html>. Accessed 5 June 2009.
- DEC (2009b). Site Inspection Report for Clearing Permit Application CPS 3154/1, Lot 502 Kilpatrick Road, North Boyanup. Site inspection undertaken 26/6/2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC89567).
- 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.
- EPA (2003) Greater Bunbury Region Scheme. Bulletin 1108. Environmental Protection Authority, Western Australia.
- Heddie, 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.
- Shepherd, D.P. (2007). 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

6. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)

