



1. Application details

1.1. Permit application details

Permit application No.: 4091/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Allan Francis McNicol

1.3. Property details

Property: LOT 2845 ON PLAN 255135 (House No. 2 OLD FARM NEERGABBY 6503)
LOT M794 ON PLAN 3110 (NEERGABBY 6503)

Local Government Area:

Colloquial name:

1.4. Application

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

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 Type: 949 Low woodland; banksia	The proposal is to clear 13 ha for horticulture.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The condition of the vegetation was established through a site inspection of the application area by DEC officers on the 16 December 2010 (DEC 2010).
1008 Medium open woodland; marri	The vegetation under application consists of open woodland consisting predominantly (9.5ha) of Banksia attenuata, Banksia menziesii, Banksia prionotes, Allocasuarina sp., Nuytsia floribunda and Eucalyptus todtiana over an open low heath of Calytrix sp, Mesomelaena sp, Schoenus sp, Xanthorrhoea brunonis, Xanthorrhoea preissii, Ptilotus manglesii and Alexgeorgea sp. in a predominantly very good condition.		
Mapped Hedde Vegetation Complex - Moore River: Fringing woodland of Eucalyptus rudis (Flooded Gum) - Melaleuca raphiophylla (Swamp Paperbark).			
Karrakatta Complex - North: Predominantly low open forest and low woodland of Banksia species E- Eucalyptus todtiana (Pricklybark), less consistently open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus todtiana (Pricklybark) - Banksia species.			
(Shepherd 2009, Hedde et al 1980).			
As above	A small portion (0.5ha) of the application area occurs in an excellent condition to the northwest.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	As above
As above	A large portion (3ha) of the south west corner of the application area is in a completely degraded condition.	Completely Degraded: No longer intact; completely/almost completely without native species (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 vegetation under application consists of open woodland consisting predominantly (9.5ha) of Banksia

attenuata, *Banksia menziesii*, *Banksia prionotes*, *Allocasuarina* sp., *Nuytsia floribunda* and *Eucalyptus todtiana* over an open low heath of *Calytrix* sp, *Mesomelaena* sp, *Schoenus* sp, *Xanthorrhoea brunonis*, *Xanthorrhoea preissii*, *Ptilotus manglesii* and *Alexgeorgea* sp. in a predominantly very good (Keighery 1994) condition (DEC 2010a). A small portion (0.5ha) of the application area occurs in an excellent (Keighery 1994) condition to the northwest. A large portion (3ha) of the south west corner of the application area is in a completely degraded (Keighery 1994) condition. The completely degraded vegetation is unlikely to comprise a high level of biodiversity.

The area under application is considered to contain ~ 10ha of high quality feeding habitat for Carnaby's Black Cockatoos (*Calyptorhynchus latirostris*) and occurs ~ 160m southwest Gingin Brook, a possible watering point for this species (DEC 2010b). In addition the vegetation in very good to excellent (Keighery 1994) condition may provide habitat for birds and ground dwelling fauna such as quenda.

The applicant has advised in supporting information provided to DEC on 17 February 2011 that the application area has been previously cleared in 1994 and 2000, which has since regrown.

Aerial imagery of the local area shows vegetated connectivity in a west-east direction to the near by watercourse (Gingin Brook) and therefore, this vegetation in very good to excellent (Keighery, 1994) condition is considered likely to support fauna utilising the watercourse and maintains fauna movement and migration across the local landscape.

Given the above, it is considered that the proposal in its current form is at variance to this Principle.

Methodology	References
	-DEC (2010a)
	-Keighery (1994)
	- EPA (2006)
	-Shepherd (2009)
	-Commonwealth of Australia (2001)
	-DEC (2010b)
	GIS Databases
	-SAC Bio Datasets (7/12/2010)
	-Pre-European Vegetation
	-Hedde Vegetation Types

(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

Three conservation significant fauna species have been recorded in the local area (10 km radius) including Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*), Western Brush Wallaby (*Macropus irma*) and Quenda (*Isodon obesulus fusciventer*).

The area under application consists of *Banksia* woodland predominantly containing *Banksia attenuata*, *Banksia menziesii* and *Banksia prionotes* in a very good (Keighery 1994) condition (DEC 2010a).

Surveys of Carnaby's Black Cockatoo populations and their feeding and roosting habits show that the Northern Region of the Swan Coastal Plain appears to be an important area for Carnaby's (Shah 2006). Important native food for this species include *Banksia attenuata*, *B. menziesii*, *B. grandis*, *B. ilicifolia*, *B. sessilis*, *B. prionotes*, *Corymbia calophylla* and *Eucalyptus marginata* (Valentine and Stock 2008). After the breeding season, Carnaby's moves to higher-rainfall coastal areas on the swan coastal plain that feature areas of feeding habitat, and accessible watering points (Shah 2006).

The area under application occurs within the northern region of the Swan Coastal Plain, contains ~ 10ha of high quality feeding habitat for Carnaby's and occurs ~ 160m southwest Gingin Brook, a possible watering point for this species (DEC 2010b). The application area contains vegetation in very good and excellent (Keighery 1994) condition which contains high quality feeding habitat and therefore considered to be significant habitat for the Carnaby's Black Cockatoo. The vegetation within the application area that is in completely degraded (Keighery, 1994) condition however, is not considered to be significant habitat for Carnaby's.

The applicant has advised in supporting information provided to DEC on 17 February 2011 that Carnaby's have been observed feeding on *Banksia prionotes* and stripping nuts from Marri trees on the property.

In addition the vegetation in very good and excellent (Keighery 1994) condition may provide habitat for birds and ground dwelling fauna such as quenda. Aerial imagery of the local area shows vegetated connectivity in a west-east direction to the near by watercourse (Gingin Brook) and therefore, this vegetation is considered likely to support fauna utilising the watercourse and maintains fauna movement and migration across the local landscape.

Given the above, it is considered that the proposal in its current form is at variance to this Principle.

Methodology	References
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-DEC (2010a)
-DEC (2010b)
-Keighery (1994)
- Shah (2006)
- Valentine and Stock (2008)
GIS Databases
-SAC Bio Datasets (7/12/2010)

(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

Two rare flora species have been identified within the local area (10 km radius) including *Drakaea elastica* and *Eucalyptus argutifolia*, both being found within the same beard vegetation type as the application area.

The area under application consists of *Banksia* woodland predominantly containing *Banksia attenuata*, *Banksia menziesii* and *Banksia prionotes* in a very good (Keighery 1994) condition (DEC 2010a).

Drakaea elastica occurs in deep sandy soils in *Banksia* woodland in low-lying areas alongside winter wet swamps (Brown et al 1998).

Eucalyptus argutifolia grows in shallow soils on limestone ridges where it emerges from heath and thickets of parrot bush and *Melaleuca huegelii* (Brown et al 1998).

The habitat for these two species does not occur within the application area and therefore it is not considered for the proposed clearing to be at variance to this Principle.

Methodology References

-DEC (2010b)
-Keighery (1994)
-Brown et al (1998)
GIS Databases
-SAC Bio Datasets (7/12/2010)

(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

The closest Threatened Ecological Community (TEC) to the application area is Floristic Community Type SCP 26a - *Melaleuca huegelii* - *M. acerosa* shrublands on limestone ridges.

The application area consists of *Banksia* woodland predominantly containing *Banksia attenuata*, *Banksia menziesii* and *Banksia prionotes* on yellow sandy soil (DEC 2010a) and does not contain limestone ridges. *Melaleuca* sp were not observed during the site inspection (DEC 2010a)

Therefore it is not considered for the proposed clearing to be at variance to this Principle.

Methodology References

-DEC (2010a)
GIS Databases
-SAC Bio Datasets (7/12/2010)

(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

The vegetation under application is described as Beard vegetation association 949 (3.5ha) and 1008 (6.2ha), which there is 58.14% and 26.16% of pre-European extent remaining, respectively (Shepherd 2009). The vegetation under application is also described as Heddle Vegetation Complex -Moore River Complex (6ha) and Karrakatta Complex-North (7ha), which there is 29.7% and 36.9% of pre-European vegetation extent remaining respectively (EPA 2006).

The Beard Vegetation association 1008 and Heddle Karrakatta Complex - North retains less than the threshold level (30%) recommended in the National Objectives Targets for Biodiversity Conservation, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Western Australia 2001).

However, the application area does not occur within an extensively cleared landscape as ~ 75.9% of pre-European vegetation extent remains in the local area (10km radius) and 55.26% remains in the Shire of Gingin. Therefore the proposal is not at variance to this principle.

	Pre-European (ha)	Current extent (ha)	Remaining %
IBRA Bioregion			
Swan Coastal Plain*	1501209	587889	39.16*
Shire of Gingin*	319670.7	176644.8	55.26*
Local Area (~10km radius)	31500.0	~23927.0	~75.90
Beard type in Bioregion*			
949	20983.2	122087.0	58.14
1008	4560.8	1193.0	26.16
Heddle Complex**			
Moore River	5828.0	1733.0	29.70
Karrakatta Complex- North	25579.0	9444.0	36.90
(Shepherd 2009)*			
(EPA 2006)**			

Methodology References
 -EPA (2006)
 -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 may be at variance to this Principle**
 A Conservation Category Wetland (CCW) is located approximately 80m west of the application area and is a floodplain of Gingin Brook which occurs ~ 160 m southwest.

Aerial imagery of the local area shows vegetated connectivity in a west-east direction to the near by watercourse (Gingin Brook) and CCW and therefore, this vegetation is considered likely to support fauna utilising the watercourse and maintains fauna movement and migration across the local landscape.

Therefore the proposed clearing may be at variance to this Principle.

Methodology GIS Databases
 -Hydrography, Linear
 -Geomorphic Wetlands 9Mgt Categories), Swan Coastal plain
 -Gingin 50cm Orthomosaic - Landgate 2008

(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 landscape of the areas under application and surrounds can be described as subdued dune-swale terrain (Northcote et al, 1960). The chief soils are leached sands on the low dunes and small areas of other sandy soils (Northcote et al, 1960). These soils are known to have a low Phosphorus Retention Index (PRI), and it is considered that the proposed clearing of deep-rooted perennial vegetation is likely to result in increased nutrient loss from the soil profile (McPharlin et al, 1990).

Soils within the applied area are part of the Spearwood Dune System, which are described as well drained deep yellow sands, and unlikely to erode through water erosion . These soils have a low risk of wind erosion which can be controlled with good management practices (Commissioner of Soil and Land Conservation, 2010) and phosphorus export and low risk of surface water runoff (State of Western Australia, 2005).

Given the sandy soils present within the areas under application, it is considered that the proposed clearing of 13ha could be managed. However clearing may cause increased nutrient loss from the soil profile. Therefore, it is considered that the clearing as proposed may be at variance to this Principle.

Methodology References
 - Commissioner of Soil and Land Conservation (2010)
 -Northcote et al (1960)
 -McPharlin et al (1990)

-State of Western Australia (2005)
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 is not likely to be at variance to this Principle

The closest conservation areas are Gnangara- Moore River State Forest occurring 2.5km south, Gingin Stock Route Nature Reserve occurring 3.3km west and Bush Forever site 406 occurring 5.4km southwest of the application area.

The application area is not connected by continuous vegetation to these conservation areas. Given this and the distance to the nearest conservation reserve, it is not considered for the proposed clearing to be at variance to this Principle.

Methodology GIS Databases
-Bushforever
-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 is not likely to be at variance to this Principle

A Conservation Category Wetland (CCW) is located approximately 80m west of the application area and is a floodplain of Gingin Brook which occurs ~ 160 m southwest. CCWs are recognised as wetlands with high ecological values and are the highest priority wetlands for protection. There should be no further loss or degradation of CCWs and their protection also requires the retention of an adequate buffer (Government of Western Australia, 1997).

The minimum recommended buffer distance for wetlands is 50m and this is designed to protect wetlands from potential deleterious impacts while helping safeguard and maintain ecological processes and functions within the wetland and, whenever possible, in the buffer (WRC, 2001). Due to the soil types present, it is unlikely that the proposed clearing will increase the risk of eutrophication into nearby watercourse (Commissioner of Soil and Land Conservation, 2010).

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

Methodology References
- Commissioner of Soil and Land Conservation (2010)
-Government of Western Australia (2001)
- WRC (2001)
GIS Databases
-Hydrography, Linear
-Geomorphic Wetlands 9Mgt Categories), Swan Coastal plain

(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 may be at variance to this Principle

A Conservation Category Wetland (CCW) is located approximately 80m west of the application area and is a floodplain of Gingin Brook which occurs ~ 160 m southwest.

Although the type of soils present are well drained deep yellow sands, given the relatively large area proposed to be cleared (13ha) consisting of deep rooted perennial vegetation and the close proximity to a CCW and Gingin Brook, the proposed clearing may cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Databases
-Hydrography, Linear
-Geomorphic Wetlands 9Mgt Categories), Swan Coastal plain

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

Comments

The application provided additional information on 17 February 2011 in response to DEC's letter of 6 January 2011 which raised environmental issues pertaining to the proposed clearing.

- Applicant stated that area has been cleared previously in 1994 and 2000
- Only 75ha out of 200 ha on property has been cleared.
- Applicant believed that the Muchea area is a major horticultural area and therefore thought it would be acceptable to carry out horticulture.
- Severe frosts occur in the north of the property and therefore the applicant favours the application area

- as its in the frost free southern portion of the property
- The applicant states that he has only noticed Carnaby's feeding on Marri's and Banksia prionotes on his property and on no other Banksia species.
- The applicant is prepared to plant 500 Marri trees as windbreaks on his property and a further 2 to 3 ha to the south, north and west of the application area.

The proposal is to clear 13 ha for horticulture. The applicant was originally going to plant 13ha of citrus trees on Lot 5 of his property (outside of application area) however due to severe frosts in that area, has decided to plant within the application area which is frost free (Lot 2845 and M 794).

The applicant currently holds a water licence from the Department of Water for a combination of 31ha of citrus orchard within Lot 2845 (17.5ha) and Lot 5 (14ha). There is 16ha of citrus trees currently on Lot 2845. The applicant will need to amend his water licence with Department of Water, however is waiting on the outcome of his application to clear native vegetation before applying for the amendment.

Planning consent from the Shire of Gingin is required for the proposal. The applicant has not yet applied for planning approval.

The area under application is zoned Rural under the Gingin's Town planning Scheme.

Methodology GIS Databases
-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.
- Commissioner of Soil and Land Conservation (2010). Advice to the Department of Environment and Conservation from the Commissioner of Soil and Land Conservation 2010. Doc Ref: A358133
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DEC (2010a) Site Inspection Report for Clearing Permit Application CPS 4091/1, Lot 2845 Old Farm Name, Neergabby. Site inspection undertaken 16/12/2010. Department of Environment and Conservation, Western Australia (DEC ref A355892).
- DEC (2010b) Fauna advice for CPS 4091/1 - Allan McNicol - Lot 2845 Old farm Road, Neergabby. Department of Environment and Conservation. DEC ref A357496
- EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.
- Government of Western Australia (1997) Wetlands Conservation Policy for Western Australia, Department of Conservation and Land Management and the Water and Rivers Commission, Perth WA.
- 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.
- McPharlin, I., Delroy, N., Jeffrey, B., Dellar, G. and Eales, M. (1990) Phosphorous retention of sandy horticultural soils on the Swan Coastal Plain, W.A. Journal of Agriculture, Volume 31, 1990.
- 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.
- State of Western Australia (2005) Agmaps Land Manager CD Rom.
- Valentine and Stock (2008) Food Resources of Carnaby's Black Cockatoo 9Calyptorhynchus latirostris) In the Ngarara Sustainability Strategy Study Area. Edith Cowen University and Department of Environment and Conservation.

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)