



1. Application details

1.1. Permit application details

Permit application No.: 1406/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Jacksonville Holdings Pty Ltd

1.3. Property details

Property: LOT 40 ON PLAN 226007 (Lot No. 40 ARMADALE FORRESTDAL 6112)

Local Government Area: City Of Armadale

Colloquial name:

1.4. Application

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

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
Heddlle Vegetation Complex: Southern River Complex - Open woodland of <i>E. calophylla</i> - <i>E. marginata</i> - Banksia species with fringing woodland of <i>E. rudis</i> - <i>M. raphiophylla</i> along creek beds.	The proposal includes the clearing of 5.88 hectares of native vegetation for the purpose of grazing horses.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation clearing description based on a site visit conducted by DEC officers on 18 October 2006
Beard Vegetation Association 1001: Medium very sparse woodland; jarrah, with low woodland; banksia and casuarina.	The vegetation under application comprises ranges in condition from Degraded to Excellent with the majority of the site very good or better.		

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 may be at variance to this Principle

Lot 40 Armadale Road has been identified as potentially containing Declared Rare Flora and habitat for Significant Fauna including priority mammals and extensive bird populations. The condition of vegetation within the area under application ranges from excellent to degraded, with the degraded areas and weed invasion limited to the western portion. It is considered that the vegetation in good or better condition may comprise a high level of biodiversity in an area that is facing increasing clearing pressures from housing developments and sand mining activities.

Methodology DEC site visit 18/10/06

(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

During the DEC site inspection two main areas of vegetation condition were identified, with western portion being degraded and the remainder of the lot being in good to excellent condition.

CALM (2005) have advised previously that Banksia woodlands with occasional Jarrah is considered to

provide suitable feeding habitat for *Calyptorhynchus latirostris* (Carnaby's Black Cockatoo) which is Endangered under the Environmental Protection Biodiversity Conservation Act. Garnett and Corwley (2000) identify that while small areas of feeding habitat can only support a small number of birds for short periods of time, the progressive loss of such small areas is an on-going concern for this species.

During the DEC site inspection diggings and nesting areas were observed that indicated the presence of the Priority fauna *Isoodon obesulus fusciventer* (Southern Brown Bandicoot, P5) within the notified area. This species prefers areas with dense understorey vegetation, particularly around swamps and along watercourses that provide ample protection from predators. This habitat was observed around the eastern portion of Lot 40 with dense wetland dependant vegetation that would be considered to provide significant habitat for this species.

Furthermore, studies conducted by Bush Forever (Government of Western Australia 2000) identified that Bush Forever Site 344 (which includes Lot 40) has 37 bird species, 2 mammal species (including the Southern Brown Bandicoot) and 7 reptile species.

Given that a range of fauna species are known to occur within Bush Forever Site 344 and the majority of the vegetation within Lot 40 is in good or better condition it is considered the area under application contains significant habitat for indigenous fauna.

Methodology
DEC site visit 18/10/06
Government of Western Australia 2000
Garnett and Corwley (2000)
CALM (2005)

(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 14 known occurrences of the Declared Rare Flora (DRF) species *Drakaea elastica*, *Caladenia huegelii* and *Diuris purdiei* within the local area (5km radius) of the area under application. The nearest occurrence of DRF is located approximately 1.5km to the west of the application. There are also 8 known occurrences of Priority flora within the local area.

The proponent has advised that a spring flora has been undertaken but does not wish to provide the Department of Environment and Conservation with a copy of this document. Given the number of DRF occurrences in the local area within the same position in the landscape and within the same vegetation complex without an appropriately timed survey it is considered with the information currently available that the proposal may be at variance with this principle.

Methodology
DEC site visit 18/10/06
GIS Database: Declared Rare and Priority Flora List - CALM 01/07/05

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

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

There are 9 known occurrences of Threatened Ecological Communities (TEC) within the local area (10km radius of the application) of the application.

The area under application is part of a Bush Forever site, and studies conducted by Bush Forever (Government of Western Australia 2000) identified the following Floristic Community Types (FCT) within the site:

- *Melaleuca preissiana* damplands (4)
- Wet forests and woodlands (11)
- Low-lying *Banksia attenuata* woodlands or shrublands (21c)
- *Banksia ilicifolia* woodlands (22).

The FCT identified on site are not listed as TEC and therefore the vegetation under application is not considered likely to comprise, or be necessary for the maintenance of, a TEC.

Methodology
DEC site visit 18/10/06
Government of Western Australia (2000)

(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 vegetation under application is identified by Hedde et al. (1980) as 'Southern River Complex' of which there is 19.8% of pre-European vegetation remaining, and which is considered to be of 'vulnerable' status for

biodiversity conservation (Department of Natural Resources and Environment 2002). Vegetation under application is also defined as vegetation association 1001, which has a representation of 27.6% of the pre-European extent. (Shepherd et al. 2001).

In addition the Southern River Complex in this area is facing increased development pressures. There is currently a number of development applications pending within the planning system which if implemented would further impact the 19.8% of the complex remaining.

The 'Southern River Complex' and Beard vegetation association 1001 identified within the area under application currently have 1.5% and 4.2% respectively (Hedde et al 1980; Shepherd et al. 2001) in secure tenure. JANIS (1997) recommended that 15% of the pre-1750 distribution of each vegetation ecosystem should be protected in a comprehensive, adequate and representative reserve system.

The State Government is committed to the National Objectives Targets for Biodiversity Conservation 2001-2005, which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment 2002; EPA 2000). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity. The proposal is therefore considered to be at variance to this Principle.

	Pre-European area (ha)	Current extent (ha)	Conservation status***% in reserves/DEC- managed land	Remaining %
Swan Coastal Plain	1,529,235	657,450	43.0* Depleted	
Hedde vegetation complex			**	
- Southern River complex	57,979	11,501	19.8 Vulnerable	1.5
Beard vegetation associations *				
-1001	68,475	18,907	27.6 Vulnerable	4.2

* (Shepherd et al. 2001)
 ** (EPA, 2003)
 *** (Department of Natural Resources and Environment 2002)

Methodology DEC Site visit 18/10/06
 Department of Natural Resources and Environment (2002)
 EPA (2000)
 EPA (2003)
 Shepherd et al. (2001)
 GIS Databases:
 Hedde Vegetation Complexes - DEP 21/06/95
 Pre-European Vegetation - DA 01/01

(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**
 Within the local area (10km radius of the application) there are a number of wetlands. The two closest wetlands to Lot 40 Armadale Road include a Conservation Category Wetland approximately 50m to the east and a Conservation Category Wetland located approximately 280m to the south east. There is also an Environmental Protection (Swan Coastal Plain Lakes) Policy wetland, located approximately 600m to the south-southwest.
 Although the Department's Graphical Information System does not identify any wetlands or watercourses within the area under application, the site inspections conducted by DEC officers from the Swan Region identified wetland dependant vegetation including tall stands of *Melaleuca rhaphiophylla* and *Kunzea glabrescens* which would indicate the presence of seasonal wet areas.
 Given the presence of this wetland dependant vegetation observed within the eastern corner of area under application and that a portion of the vegetation under application is within the buffer to an area mapped as a wetland of conservation significance the proposal is considered at variance with this principle.

Methodology DEC site visit 18/10/06
 GIS Databases:
 Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC

(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 area under application located on the Bassenden dune system with the soil type dominated by the Bassendean B2 Phase (State of Western Australia, 2005) The B2 phase is described as well drained

sandplains with well to moderately well drained deep bleached grey sands (DAFWA, 2006).

These soils are considered to have a high risk of wind erosion but a low risk of water erosion due to their porous nature. The establishment and maintenance of pasture would reduce this risk of wind erosion although there is still medium to low risk of land degradation while the pasture is being established. (DAFWA, 2006). The over grazing of horses on these soils can quickly lead to the loss of pasture and this would in turn lead to increased risk of wind erosion:

These soils identified are associated with a low phosphorus retention index and therefore pose a high risk of nutrient loss. Dependant of stocking rates the proposed future landuse following the removal of native vegetation may increase nutrient loss and eutrophication of the Conservation Category Wetland

Given the risk of wind erosion prior to the establishment of pasture and the risk of an increase in eutrophication it is considered that the application may be at variance.

Methodology
9Y DAFWA (2006)
State of Western Australia (2005)

(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 seriously at variance to this Principle

The area under application is part of Bush Forever site 344 which is considered to form an 'important linkage to bushland in the north (Bush Forever Site 390), south and west and is considered part of a regionally significance fragmented bushland/wetland linkage' (Government of Western Australia 2000). This site also includes wetlands listed on the Directory of Important Wetlands in Australian and was included as a Bush Forever site due to its 'representation of ecological communities, diversity, rarity and scientific and evolutionary importance' (Government of Western Australia 2000).

The portions of this Bush Forever site not in private ownership immediately adjacent to the area under application form part of the Jandakot Regional Park that is currently managed for conservation by the DEC.

The application in its current form would remove vegetation from Bush Forever Site 344 thereby impacting directly on this potential conservation reserve. In addition the Bush Forever Office does not support the broad scale clearing of this site and it would therefore be considered seriously at variance to this principle.

Methodology
9Y Government of Western Australia (2000)
GIS Databases: Bushforever - MFP 07/01

(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 has a low risk of salinity and acid sulphate soils, however the B2 phase soil type has a poor nutrient retention ability. The area under application is also part of the Jandakot Underground Water Pollution Control Area and is gazetted as Priority 2 (areas managed to ensure that there is no increase risk of water source contamination).

The removal of vegetation from the site may result in increased water infiltration into the groundwater and nutrient loss off-site through groundwater movement. This groundwater would risk having increased levels of nutrients, with the risk dependent on fertiliser use and stocking rates (DAFWA, 2006).

Given the soils on-site are associated with a low phosphorus retention index and the potential for fertiliser use and/or stocking rates to increase nutrient loss (DAFWA, 2006) it is considered there is the potential for eutrophication causing a deterioration of the groundwater quality of the Jandakot Public Drinking Water Resource Area and the surface water quality of the nearby Conservation Category Wetland.

Therefore the proposal may be at variance with this principle.

Methodology
9Y DAFWA 2006
GIS Databases:
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06

(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

Due to the high infiltration rates associated with this soil type and the slight relief at Lot 40 Armadale Road, the proposed clearing of vegetation under application is not likely to cause or exacerbate the incidence of

flooding.

Methodology DEC site visit 18/10/06
GIS Databases:
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The City of Armadale (2006) advise that under the Town Planning Scheme No. 4 the land is zoned 'Rural Living X' and is affected by Special Control Area Clause 6.3 'Public drinking water source protection areas', Clause 6.4 'Wetland protection Areas' and Clause 6.5 'Landscape and bushland protection areas'. The keeping of horses a discretionary use under the zoning table, which means that it would only be permitted if the City has granted planning approval. The City advises that reference would be made to the Water Quality Protection Guideline No. 13 'Environmental Guidelines for Horse Facilities and Activities', which advises of stocking rates for Priority 2 Drinking Water Source Areas. The City of Armadale also advises that planning approval would be required for the building of stables.

A groundwater licence from the Department of Water would be required for the irrigation of pasture, and may include a requirement for a Nutrient Irrigation Management Plan (NIMP).

A public submission was received objecting to the proposed clearing for the following reasons:

- The lot is over the Jandakot Groundwater Protection Area and the proposed land use would be in conflict to protecting the quality of groundwater;
- The proximity of the proposal to a Conservation Category Wetland;
- The Jandakot Regional Park is immediately to the west of the lot and draw of groundwater for irrigation would reduce the water table supplying vegetation in the Park and the aforementioned CCW;
- Irrigation and agistment of horses would contribute to nutrient levels in the adjacent drain which flows to Forrestdale Lake;
- Banksia woodland is an endangered vegetation complex and is important for Carnaby's Cockatoo; and
- A botanical survey should be conducted prior to consideration of a clearing permit.

The Bush Forever office does not support the broad scale clearing of Lot 40, however advised that 'limited clearing for a building envelope and possibly a limited area to enable limited rural use may be appropriate in areas identified as already cleared or degraded'.

Previously the Bush Forever office has explored subdivision/development options to determine the development potential of Lot 40. The Lot is considered to be highly constrained by its location within 300m of a poultry farm, the CCW and its zoning as Rural Groundwater Protection, which specifies a minimum lot size of 2 hectares subject to land capability.

In 2003 an offer by DPI (Bush Forever) to purchase the lot in recognition of the high conservation values was not successful.

In 2006 a subdivision application received for 6 lots of approximately 2 hectares was not supported by the Bush Forever office and was subsequently refused by the WAPC.

Methodology

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Miscellaneous	Mechanical Removal	5.88	<p>The assessable criteria have been addressed, and the proposed clearing is seriously at variance with principle h and at variance with Principles b, e and f. In particular:</p> <ul style="list-style-type: none">- The vegetation is part of Bush Forever Site 344 and provides an ecological linkage to surrounding conservation areas.- The area under application in good or better condition vegetation on-site has been assessed as being significant habitat for native species including bird species and the Priority 5 Southern Brown Bandicoot and feeding habitat for the Endangered Carnaby's Black Cockatoo- The vegetation on-site is in excellent to degraded condition, as it is representative of an under-represented vegetation complex;- The vegetation on-site is in good to excellent condition, as it is representative of a vegetation complex that is not adequately protected in a comprehensive, adequate and representative reserve system; and- The clearing of wetland dependent vegetation that is growing in association with a seasonally wet area and within the buffer to a Conservation Category Wetland;

In addition the proposal may be at variance to Principles a, c, i and g.

Given the above and that the applicant does not want to alter the application, requesting the proposal be considered as a whole, the assessing officer recommends this application in its current format be refused.

5. References

CALM Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref IN24153.

DAFWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DoE TRIM ref DOC3542.

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

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.

EPA (2002) Terrestrial Biological Surveys as an element of biodiversity protection. Position Statement No. 3. March 2002. Environmental Protection Authority

Garnett, S. and Corwley G. (2000). The Action Plan for Australian Birds. Environment Australia and the Royal Australasian Ornithologists Union.

Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning 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.

JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, 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.

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)