



1. Application details

1.1. Permit application details

Permit application No.:

1898/1

Permit type:

Area Permit

1.2. Proponent details

Proponent's name:

MR Peter Covich

1.3. Property details

Property:

LOT 102 ON PLAN 15362 (Lot No. 102 POWER WATTLEUP 6166)

Local Government Area:

City Of Cockburn

Colloquial name:

1.4. Application

Clearing Area (ha)

No. Trees

Method of Clearing

For the purpose of:

1.6

Mechanical Removal

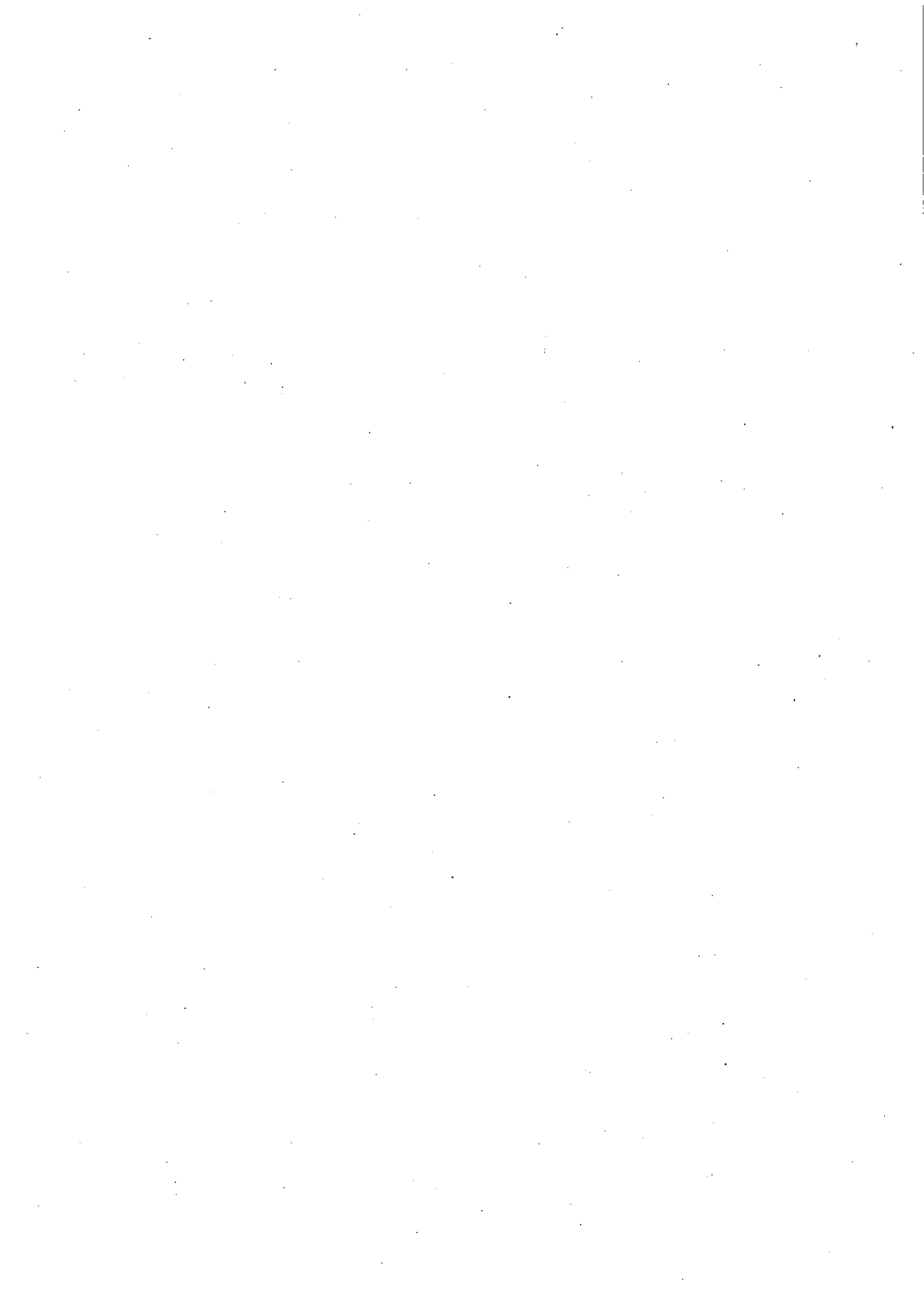
Horticulture

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
Hedde Vegetation Complex:	The proposal is to clear 1.6ha for the purpose of expansion of a lurf farm.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	Vegetation clearing description based on site visit conducted by DEC officers on 21/06/2007.
Cottesloe Complex Central and South - Mosaic of woodland of Eucalyptus gomphocephala and open forests of E. gomphocephala, E. Marginata, E. calophylla, closed heath on limestone.	The vegetation in the eastern portion of the area under application comprises <i>Eucalyptus</i> spp. <i>Banksia attenuata</i> , <i>B. grandis</i> , <i>B. menziesii</i> and <i>Casuarina</i> spp. over an understorey comprising <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> , <i>Acacia</i> spp. <i>Hakea</i> sp., <i>Grevillea</i> spp. <i>Dryandra nivea</i> , <i>Hibbertia hypericoides</i> , <i>Hardenbergia</i> spp. and grasses. Vegetation in this area is in good condition, with some patches in very good condition.		The area under application is located adjacent to the industrial precinct, The Hope Valley Wattleup Redevelopment Area (HWVRA) and is situated in a landscape which has been extensively cleared for industrial and urban development.
Beard Vegetation Association: 6 - Medium woodland; tuart and jarrah	Vegetation in the western portion of the applied area has previously been cleared and burnt, however regrowth of <i>Xanthorrhoea preissii</i> and <i>Macrozamia riedlei</i> is present. In addition, large expanses of non-native grasses have extensively colonised this portion of the area under application. Whilst this area is degraded, given time the vegetation may have the ability to regenerate back to good condition.		



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**

The vegetation under application is 1.6ha, of which 0.7ha in the eastern portion is in good condition with dense understorey, whilst the western portion is in a degraded condition due to previous clearing and a recent fire with vegetation largely restricted to *Xanthorrhoea preissii* and *Macrozamia riedlei*.

Although the eastern area is limited in size (0.7ha) the vegetation has an overstorey of Banksia and Eucalyptus trees with an intact understorey which may provide some habitat for fauna. Given the diversity of this Cottesloe complex woodland and suitability as habitat for fauna it may be an area of high level of biodiversity and therefore may be at variance to this Principle.

Methodology DEC Site visit - 21/06/07

(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 not likely to be at variance to this Principle**

Within the local area (5km radius) there is one recorded species of Threatened (Vulnerable) Fauna, the Numbat (*Myrmecobius fasciatus*) and three recorded species of Priority Fauna which are the Quenda (*Isoodon obesulus fusciventer*) (P5), the Western False Pipistrelle (*Falsistrellus mackenziei*) (P4) and the Masked Owl (*Tyto novaehollandiae*) (P4).

The only recorded sighting of the Numbat occurred in 1984, approximately 1.6km northeast of the area under application, with no further sightings of this species recorded within the local area. Given the small size of the area under application and lack of connectivity to other remnants in the local area, it is not considered likely that the vegetation under application would provide suitable habitat for the Numbat.

The DEC Priority 5 species Quenda (*Isoodon obesulus fusciventer*) has been recorded within a 2km radius of the area under application. Whilst no visible Quenda diggings were observed during the site visit, the dense understorey in the eastern portion of the area under application is likely to have some habitat potential for ground dwelling fauna such as the Quenda and Numbat.

The Western False Pipistrelle (P4) and the Masked Owl (P1) have been recorded within the local area and are known to roost and nest in hollows of Tuart trees (*Eucalyptus gomphocephala*). During the site inspection no hollows were observed in trees that could potentially be utilized as habitat, with the trees under application not considered to be of hollow-bearing age. Given that the majority of the trees found within the applied area are predominantly Banksia species with some Eucalyptus species, they are not considered likely to provide suitable nesting habitat for these Priority species.

The area under application is located within the distribution range of the Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*) which is threatened. These birds inhabit uncleared or remnant Eucalyptus and Banksia woodlands, foraging on the seeds and nectar from the flowers of Banksia and Eucalyptus species (DEC 2006). The vegetation under application includes these species that may be utilised by foraging Carnaby's Black-Cockatoo, however it is not considered likely to be significant given the presence of conservation reserves in the local area.

Although the vegetation in the eastern area under application may provide some foraging habitat for fauna species in the local area, it is not considered likely to be significant, given the lack of hollows, the limited size (0.7ha) of the area under application and lack of connectivity to other remnants; especially when compared to conservation reserves in the local area that are in good or better condition.

Methodology DEC Site visit - 21/06/07
GIS Databases:
SAC BIO Datasets - accessed 30/07/07

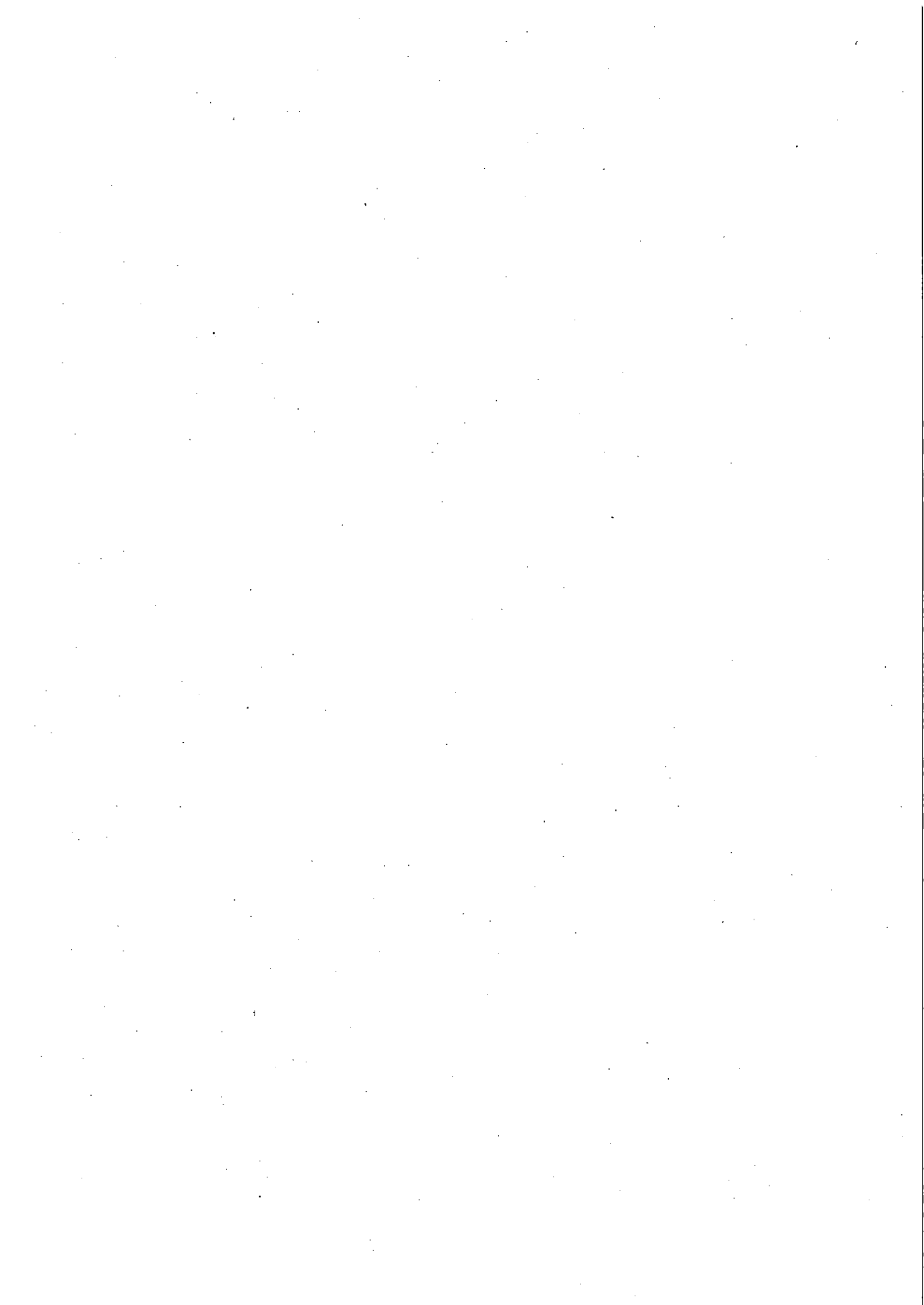
(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora

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

There are no known populations of Declared Rare Flora (DRF) within a 5km radius of the area under application, however, there are eleven known populations of the Priority listed flora *Dodonea hackettiana* (P4), with the closest located approximately 900m northeast of the applied area.

Although the identified Priority species *D. hackettiana* is located in close proximity to the area under application, it is found on outcropping limestone and within a different soil association to that found within applied area and is therefore not considered likely to be present on site.

Given there is no DRF identified within the local area and that the area under application is unlikely to include



habitat that is suitable for *D. hackettiana*, it is not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology DEC Site visit - 21/06/07
 GIS Datasets:
 Heddle Vegetation Complexes - DEP 21/06/95
 SAC BIO Datasets - accessed 30/07/07
 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**
 There is one known population of Threatened Ecological Community (TEC) which is located approximately 4.5km south of the area under application and is found in a different soil association than that of the area under application. This TEC has been described as Floristic Community Type (FCT 26a) - *Melaleuca huegellii* and *Melaleuca acerosa* shrublands on limestone ridges.

Given the vegetation in the applied is found in a different soil type, comprising Banksia and Eucalyptus woodlands and is not located on a limestone ridge, and given the distance to the nearest TEC, it is not considered likely that the vegetation under application comprises or is necessary for the maintenance of a TEC.

Methodology DEC Site visit - 21/06/07
 GIS Databases:
 SAC BIO Datasets - accessed 30/07/07
 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 not likely to be at variance to this Principle**
 Heddle et al. (1980) describes the vegetation under application as 'Cottesloe Complex Central and South' of which there is 41.1% of pre-European extent remaining and which is described as being of 'depleted' status for biodiversity conservation (Department of Natural Resources and Environment, 2002; EPA, 2006).

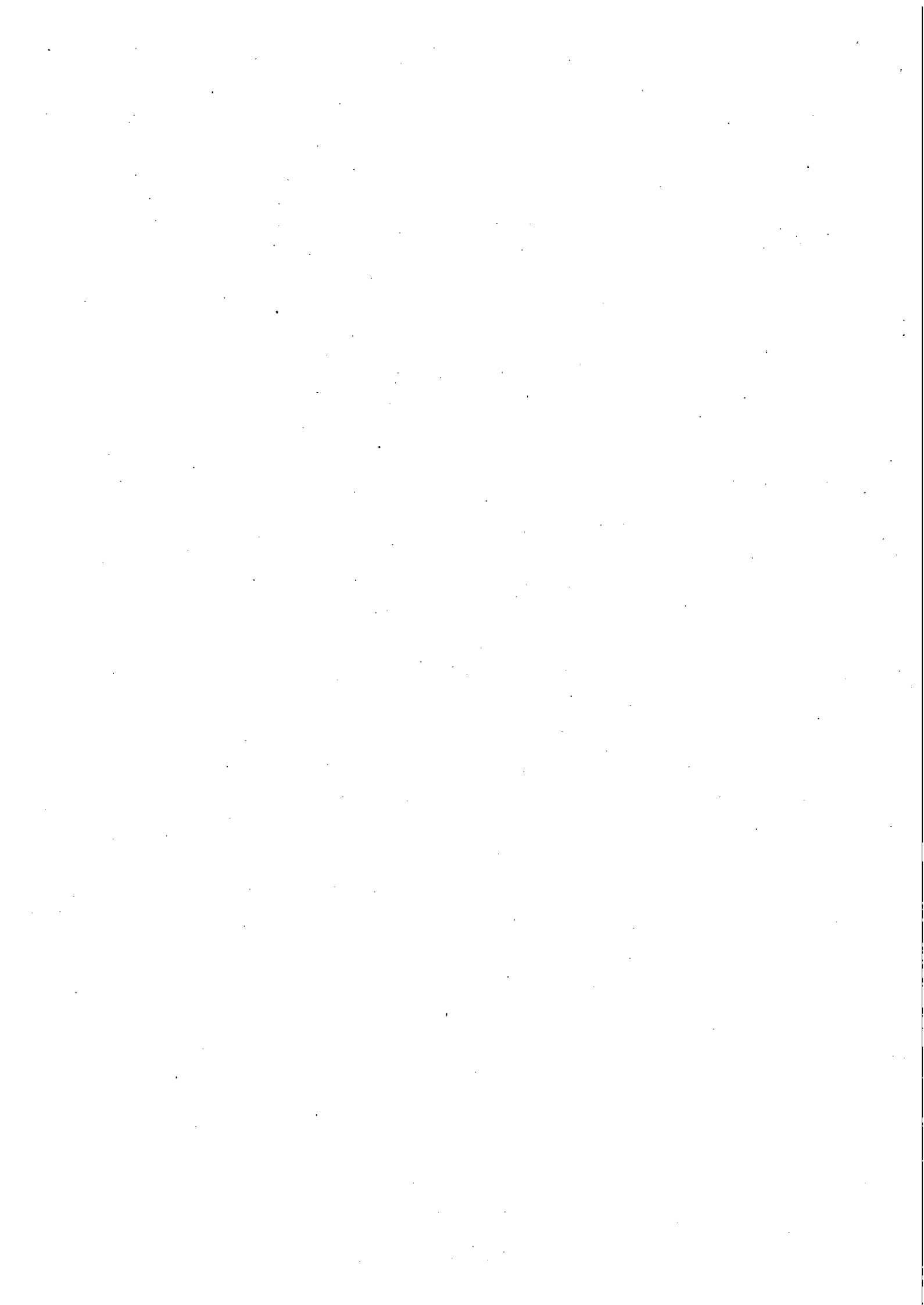
The vegetation under application is also described as Beard vegetation association 6, which has 26.6% of pre-European extent remaining (Shepherd 2006) and which is considered to be of a 'vulnerable' status for biodiversity conservation (Department of Natural Resources and Environment, 2002; EPA, 2006). The vegetation under application is also within the Swan Coastal Plain Bioregion of which there is 38.1% of pre-European vegetation remaining.

Although the identified Beard vegetation association has less than the recommended 30% minimum of Pre-European extent remaining, the applied area is considered to be within a constrained area. The EPA (2003) recognises the Perth Metropolitan Region as a 'constrained area,' providing for the reduction of vegetation complexes to a minimum of 10% of the Pre-European extent. In addition, there is approximately 38% of pre-European extent remaining in the local area, therefore the proposal is not considered likely to be at variance to this Principle.

	Pre-European (ha)	Current (ha)	Remaining %	Conservation status*** % in reserves
Swan Coastal Plain	1,501,456	571,758	38.1%**	Depleted
Local Area (~10km radius)	~31,400	~12,192	~38%	Depleted
Heddle vegetation complex				
Cottesloe Complex - Central and South	44,995	18,474	41.1%***	Depleted
Beard vegetation associations 6	56,345	15,013	26.6%**	Vulnerable 10.9%

* (Shepherd et al. 2001)
 ** (Adapted from: Shepherd et al. 2001)
 ***(EPA, 2006)
 ***(Department of Natural Resources and Environment 2002)

Methodology Department of Natural Resources and Environment (2002)
 EPA (2006)
 Heddle et al. (1980)
 Shepherd et al.(2001)
 Shepherd (2006)



(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 a number of conservation category wetlands (CCWs) located within a 5km radius of the area under application, the closest is the Pearse Road Wetland, which is located approximately 900m southeast of the applied area. This particular wetland is also a lake recognised under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. The nearest watercourse is the Peel Main Drain which is located approximately 3.7km southeast of the applied area.

In addition, Thomson Lake which is located approximately 1.6km northeast of the area under application is listed as a CCW, an ANCA wetland and a RAMSAR wetland and is considered to be of local and international significance in providing significant habitat for migratory birds.

Given the distance to these wetlands and watercourse, and that no wetland dependent vegetation was observed during the site visit, the vegetation under application is not considered likely to include vegetation growing in, or in association with a watercourse or wetland.

Methodology DEC Site visit - 21/06/07
GIS Databases:
ANCA, Wetlands - CALM 08/01
EPP, Lakes - DEP 1/12/92
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - DOW
RAMSAR, Wetlands - CALM 14/02/03

(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 soils within the area under application are described as well-drained siliceous brown sands which have a low risk of water erosion and waterlogging (State of Western Australia 2005). The area under application is associated with a nil to low risk of salinity and a low risk of acid sulphate soils. Given that the clearing as proposed does not involve deep excavation of the soils, it is therefore not considered likely that it would have an impact on acid sulphate soils.

The main land degradation risk associated with the removal of vegetation on the identified soil type is considered to be nutrient export and wind erosion (State of Western Australia 2005). The clearing of native vegetation is not considered likely to impact on the export of nutrients, however without appropriate vegetation cover, windbreaks or adequate dust suppression on exposed surfaces, the proposed clearing on the sandy soils may result in wind erosion.

Given that the proposed clearing may cause wind erosion, it may be at variance to this Principle.

Methodology DEC Site visit - 21/06/07
State of Western Australia (2005)
GIS Datasets:
Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
Salinity Mapping LM 25m - DOLA 00
Soils, Statewide - DA 11/99

(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.

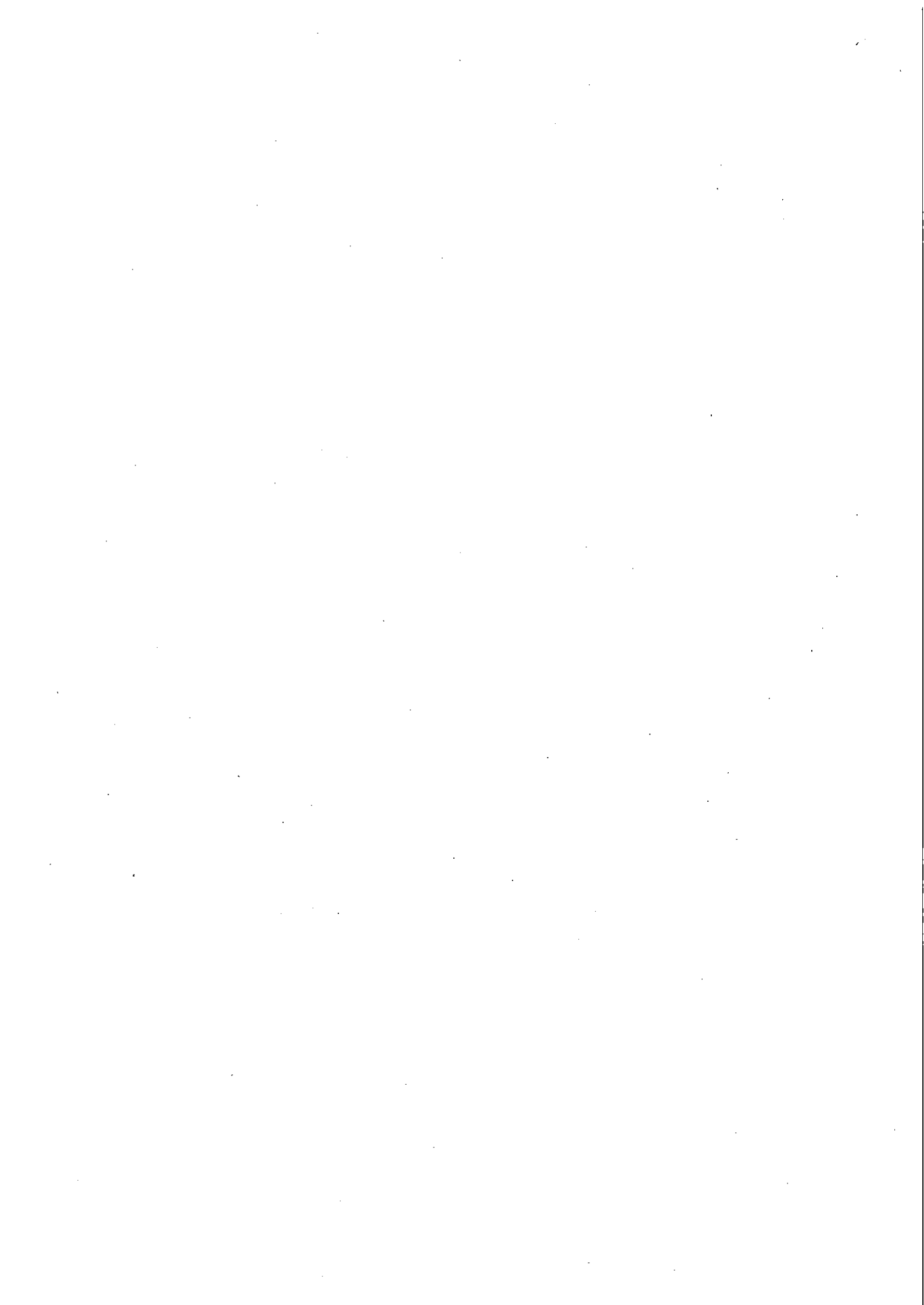
Comments Proposal is not likely to be at variance to this Principle

There are seven areas reserved for conservation purposes within a 5km radius of the area under application, with the closest being Bush Forever Site 392 which is located approximately 600m east of the applied area.

The area under application is situated in a landscape which has been extensively cleared for industrial and urban development and has been isolated from local conservation reserves, it is therefore unlikely to provide a corridor for movement of fauna to these reserves.

Given the distance to these reserves, it is not considered likely that the proposed clearing would have a direct or indirect impact on the environmental values of any adjacent or nearby conservation reserves.

Methodology GIS Datasets:
Bushforever - MFP 07/01
CALM Managed Lands and Waters - CALM 1/07/05
System 6 Conservation Reserves - DEP 06/95



(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

The area under application has a nil to low risk of salinity and acid sulphate soils and is not located within a Public Drinking Water Source Area (PDWSA). The nearest watercourse is the Pearse Road Wetland which is situated approximately 900m southeast of the applied area.

Due to the high infiltration rates of sand, it is not considered likely that the proposed clearing would result in water erosion causing deterioration in surface water quality. In addition, given that there is a low to nil risk of salinity and Acid Sulphate Soils (ASS), it is not considered likely that the proposed clearing would cause salinity or ASS resulting in the deterioration in the quality of underground water.

Methodology DEC Site visit - 21/06/07

GIS Databases:

Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC

CALM Managed Lands and Waters - CALM 1/07/05

Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC

Hydrography, linear (hierarchy) - DOW

Public Drinking Water Source Areas (PDWSAs) - DOW

Salinity Mapping LM 25m - DOLA 00

(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

The sandy soils identified within the area under application are associated with a low to nil risk of waterlogging due to their high infiltration rates (State of Western Australia 2005). The proposed clearing of vegetation is therefore not considered likely to cause or exacerbate the incidence or intensity of flooding.

Given the high infiltration rates and porous nature of the sandy soils on site, the proposed clearing of vegetation is not likely to cause or exacerbate the incidence or intensity of flooding.

Methodology DEC Site visit - 21/06/07

State of Western Australia (2005)

GIS Databases:

Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC

Public Drinking Water Source Areas (PDWSAs) - DOW

Topographic Contours, Statewide - Dola 12/09/02

Planning Instrument, Native Title, Previous EPA decision or other matter:

Comments

No submissions were received.

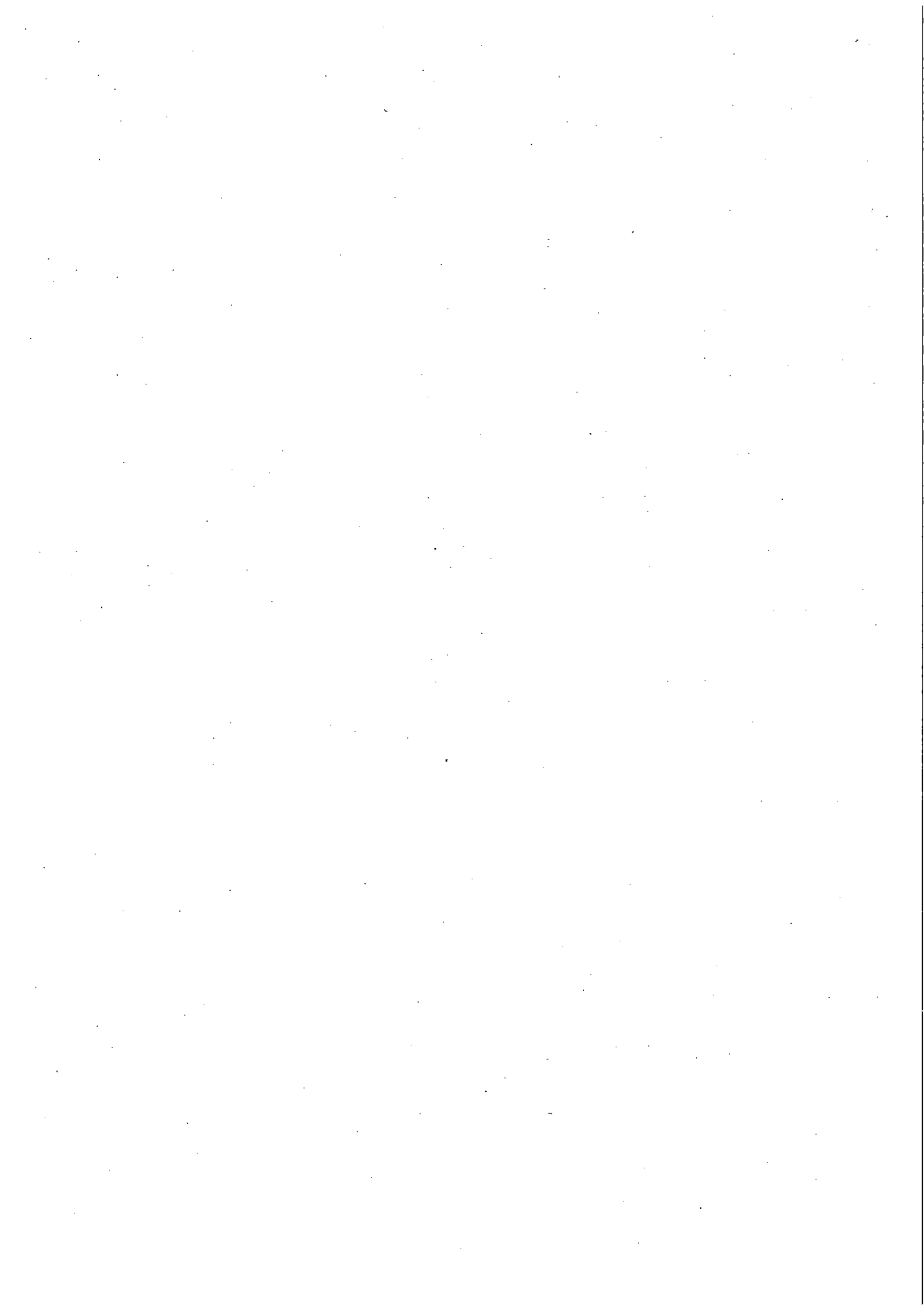
The area under application is part of a Native Title Claim however, since it is privately owned Native Title is extinguished under the Native Title Act 1993.

The area under application is located approximately 8km east of Cockburn Sound and is within the Cockburn Sound Catchment area. This area has been identified as being a major source of nutrient export via groundwater flow into the Cockburn Sound. An Environmental Management Plan for Cockburn Sound and its Catchment identified the deterioration in water quality and loss of marine habitat in the Sound can be attributed to waste discharges from land-based activities, with groundwater flows contributing more than 70% of the nitrogen load into the Sound.(DOE, 2005).To protect the environmental values of Cockburn Sound, the potential impacts of land use on the marine environment needs to be considered.

The application of fertilizers on the proposed turf farm is likely to increase the risk of nutrient export, in particular nitrogen. The Cockburn Sound Management Council (2004) have identified turf farms as an Intensive agriculture land use and have recommended the implementation of site specific Drainage and Nutrient Management Plans to reduce the amount of nutrients from entering the Sound through groundwater discharge.

The Department of Water has advised that the applicant is in the process of renewing their water licence and amending the water usage from market garden to turf. A Nutrient Irrigation Management Plan is required under the groundwater licence issued by the Department of Water.

The City of Cockburn has placed conditions on the Development Approval requiring the implementation of a Drainage and a Nutrient and Irrigation Management Plan to the satisfaction of the Department of Water (DOW).



In response to the Department of Environment Land Use Planning (now Department of Water) standard condition for a flora survey, the City of Cockburn have placed a condition on the Development Approval requiring an appropriately timed flora survey be conducted, prior to any clearing of native vegetation.

Cockburn Sound Management Council (2004)

Department of Environment (2005)

GIS Database:

Native Title Claims DL1 7/11/05

Methodology GIS Databases:

Native Title Claims - DL1 7/11/05

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Horticulture	Mechanical Removal	1.6	The assessable criteria have been addressed and the proposed clearing may be at variance to Principles (a) and (g).

5. References

- Cockburn Sound Management Council (2004) Local Planning Policy For The Cockburn Sound Catchment, Western Australia.
- DEC (2006) Naturebase Fauna Species Profile, Carnaby's Black-Cockatoo <http://www.naturebase.net/plants/animals/birds/cockatoo.html> accessed on 13/04/2007
- Department of Environment (2005) Environmental Management Plan for Cockburn Sound and its Catchment, Perth.
- 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 (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.
- Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.
- Heddle, 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.
- Shepherd (2006) 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.
- 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)

