



## 1. Application details

### 1.1. Permit application details

Permit application No.: 3097/1  
 Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Xcept Pty Ltd

### 1.3. Property details

Property: LOT 600 ON PLAN 59102 ( STAKE HILL 6181)  
 Local Government Area: Shire Of Murray  
 Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
22		Mechanical Removal	Building or Structure

## 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
BASSENDAN COMPLEX - CENTRAL AND SOUTH : Vegetation ranges from woodland of Eucalyptus marginata (Jarrah) - Allocasuarina fraseriana (Sheoak) - Banksia species to low woodland of Melaleuca species, and sedgeland on the moister sites. This area includes the transition of Eucalyptus marginata (Jarrah) to Eucalyptus tottiana (Pricklybark) in the vicinity of Perth. (Hedde et al., 1980)	The vegetation under application consists of predominately closed Melaleuca teretifolia shrublands, with Melaleuca raphiophylla, Melaleuca pressiana and Eucalyptus woodlands. Weed invasion has occurred throughout the application area. Grazing stock and slashing regimes have led to some significantly disturbed areas; however the un-slashed areas have regenerated well (DEC, 2009a).  The vegetation is considered to be in a degraded to good (Keighery, 1994) condition.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The description and condition of the vegetation under application was determined via the use of aerial imagery and a DEC conducted site inspection (DEC, 2009a).
As above	As above	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (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 may be at variance to this Principle**  
 The 22 hectares of native vegetation under application varies in its condition from degraded to good (Keighery, 1994). The application area is adjacent to a newly constructed highway and parts have been subjected to disturbances such as cattle grazing and slashing regimes. Areas of vegetation that have been left un-slashed for some time have re-established to be dense stands of shrublands and woodlands. There was little to no understorey present at the time of inspection and weeds have invaded large sections of the application area

(DEC, 2009a). Within the local area (10km radius) there is approximately 25% of vegetation remaining.

There are known populations of *Drakaea elastica* within close proximity to the applied area. While a flora survey has been conducted over the Nambeelup area, a more thorough flora survey is required to determine the presence or absence of rare flora (DEC, 2009b). The vegetation present within the application area may be important habitat for invertebrate and vertebrate fauna species.

Due to the potential habitat offered to rare flora, the linkage potential of the vegetation in a cleared landscape and given that there are wetlands occurring within the application area, the vegetation under application may be important in maintaining biodiversity within the local area.

**Methodology** DEC (2009a)  
DEC (2009b)  
Keighery (1994)  
GIS DataSets:  
- CALM Managed Lands and Waters - CALM 01/06/05  
- Perth Metropolitan Area South 20cm Orthomosaic -Landgate 2007  
- SAC Biodatasets - accessed 14 May 09

**(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 may be at variance to this Principle**

Within the local area (10km radius) a number of fauna species have been recorded. Of these the species the most likely to occur in *Melaleuca teretifolia* shrublands and *Melaleuca/Eucalyptus rudis* woodlands is the Quenda (*Isodon obesulus fusciventer*) a priority five species and the Chuditch (*Dasyurus geoffroii*), threatened under the Western Australian Wildlife Conservation Act and vulnerable under the Environment Protection and Biodiversity Conservation Act. Due to the proximity to wetlands and lakes the priority four species, Water rat (*Hydromys chrysogaster*) may frequent the applied area (DEC, 2007).

The Chuditch is rarely known to occur across the Swan coastal plain and is known to occupy large home ranges (Cardno, 2009b). The vegetation under application is not likely to be significant habitat for the Chuditch.

Permanent water bodies occur on the other side of the newly constructed Perth - Bunbury Highway and while there are wetlands that occur within the applied area, these do not retain water all year round, decreasing the suitability of the vegetation as habitat for the Water rat (Cardno, 2009b).

Although there are artificial drainage lines that exist within the applied area, the values offered by the vegetation as winter/spring habitat make it more worthy of conservation. Considerable populations of frogs were observed as were large numbers of invertebrate fauna and waterbirds (Nicole Siemon & Associates, 2006). The clearing of the vegetation under application may impact of these species.

The vegetation under application is considered to be a remnant in a highly cleared area (approximately 25% vegetation remaining within local area) and may assist fauna movement through the local area by providing stepping stone vegetation.

Given the condition of the vegetation under application, it is considered that the applied area may provide significant habitat for local fauna species.

**Methodology** Cardno (2009b)  
DEC (2007)  
Nicole Siemon & Associates (2006)  
- CALM Managed Lands and Waters - CALM 01/06/05  
- Hydrography linear - DOW 13/7/06  
- Perth Metropolitan Area South 20cm Orthomosaic (Landgate 2007)  
- SAC Biodatasets - accessed 14 May 09

**(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**

The application area is adjacent to a newly constructed highway, with the vegetation under application ranging in condition from degraded to good (Keighery, 1994). The soil type consists of soils comprised chiefly of leached sands. Rare flora species *Drakaea elastica* has been recorded 1km west of the application area and other occurrences of this species were recorded during the construction of the adjacent highway. Priority one species *Acacia lasio carpa* var. *bracteolata* long peduncle was recorded 4.3km east of the application area and occurs on the same soil and vegetation type as the application area. There are a number of other priority listed species recorded within the local area including 4 priority two species, four priority three species and six priority four species.

A flora survey was conducted by Nicole Siemon & Associates over the Nambeelup area, which did include some areas of the vegetation under application. Samples of possible rare and priority flora were collected and later identified. *Daillwynia dillwyniodes* (P3) was recorded within close proximity of the applied area. No other rare or priority listed flora were recorded within the area under application. However the primary purpose of the flora survey was to determine the applicability of the preliminary vegetation condition and identify areas of conservation significance within the Nambeelup area. The application area itself was not thoroughly surveyed.

The artificial drainage lines that exist within the applied area hold a substantial amount of water; the values offered by the vegetation as winter/spring habitat make it more worthy of conservation (Nicole Siemon & Associates, 2006).

Due to the presence of known populations of the rare flora species *Drakaea elatitca* and given that the vegetation under application may offer potential habitat for this species (DEC, 2009a; DEC, 2009b), an appropriately timed flora survey is required to determine the presence of this species within applied area.

**Methodology** DEC (2009a)  
DEC (2009b)  
Keighery (1994)  
Nicole Siemon & Associates (2006)  
- Heddle Vegetation Complexes - DEP 22/06/95  
- Pre European Vegetation - DA 01/01  
- SAC Biodatasets - accessed 7 May 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**

Within the local area there are two Threatened Ecological Communities (TECs). They are:  
? herb rich saline shrublands in clay pans, and  
? forest and woodlands of deep seasonal wetlands of the swan coastal plain.

Both these communities are located more than 8km from the application area and occur on different soil and vegetation types to that of the applied area. There are no known occurrences of TECs within the application area.

It is considered unlikely that the proposed clearing is at variance to this principle.

**Methodology** GIS DataSets:  
- SAC Biodatasets - accessed 7 May 09  
- 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**

The vegetation under application is one of the largest remnants of vegetation that occurs within a 10km radius indicating that the surrounding landscape is predominantly cleared. The proposed clearing of large remnants of vegetation in such a highly cleared landscape will significantly impact on biodiversity and fauna and flora dispersal and habitat as it is one of the last remaining refuges in the area.

As the table below illustrates, the Beard vegetation association present within the application area (Beard 1000) has 26.8% of pre-European levels of vegetation remaining within the bioregion (Shepherd et al. 2007). The vegetation complex Bassendean central/south is also mapped as occurring within the application area. This complex has 27% of pre-European levels of vegetation remaining (Heddle et al. 1980). While the Shire and bioregion are well vegetated (56.08% & 38.84% remaining respectively), the vegetation types mapped as occurring on the application area all have current extents of remaining vegetation that are below the recommended 30% threshold necessary to maintain biodiversity (EPA, 2000).

Although the vegetation complexes identified on site have less than the recommended 30% threshold remaining the applied area is considered to be within a constrained area, which is defined as 'an area where there is a reasonable expectation that development will be able to proceed, this may include urban, urban deferred or industrial zoned land or land with existing development approvals' (EPA, 2006a). The EPA's position paper No 9 (EPA, 2006b) states 'where adverse impacts to a native vegetation complex in constrained areas (i.e. areas of urban development in cities and major towns) on the Swan Coastal Plain would result in a 10% or less representation of the pre-clearing extent of that native vegetation complex.' The paper specifically cites the Peel Region Scheme as an example of a constrained area.

This being considered, the threshold limit for retained native vegetation for the vegetation types mapped as occurring within the applied area is 10%. The vegetation types mapped as occurring within the applied area have

remaining percentages above 10%.

	pre-European extent (ha)	Current extent (ha)	Remaining %
Bioregion**			
SCP	1,501,208	583,140	38.84
Shire**			
Murray	177,618	99,614	56.08
Beard**			
1000			
Within Bio	94,175	25,235	26.80
Bassendean*			
Central/south	87,477	23,624	27
Shepherd et al. (2007)**			
Heddle et al (1980)*			

**Methodology** EPA (2000)  
EPA (2006a)  
EPA (2006b)  
Heddle et al (1980)  
Shepherd et al (2007)  
GIS DataSets:

**(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 vegetation under application consists of *Melaleuca raphiophylla*, *Melaleuca preissiana* and *Eucalyptus rudis* woodland (DEC, 2009; Cardno, 2009a). The vegetation under application is considered to be growing in association with a wetland (Cardno, 2009a; Nicole Siemon and Associates, 2006). There are two Environmental Protection Policy (EPP) lakes located within close proximity of the application area. The closest is 200 metres south, the other 1.6km west. The Serpentine River is located 1.6km north west and a major perennial watercourse is 500 metres south of the applied area. The applied area is within a palusplain (Multiple use wetland) and a small section of the applied area fall within a resource enhanced sumpland.

The Perth - Bunbury highway has impacted on the environmental values of the resource enhanced wetland (Cardno, 2009b) and multiple use wetlands are described as generally having few important ecological attributes and functions remaining (Cardno, 2009b; Water and Rivers Commission 2001).

Although there are artificial drainage lines that exist within the applied area, the values offered by the vegetation as winter/spring habitat make it more worthy of conservation (Nicole Siemon & Associates, 2006). One of these artificial drains runs into the nearby EPP Lake. The clearing may increase the amount of sediment runoff into the EPP Lake and surrounding wetlands. Sediment flow into adjacent wetlands is likely to be restricted as the Perth - Bunbury highway acts as a barrier restricting water flow, which allows sediments to settle. Any impact from an increased flow of sediment into adjacent wetlands is likely to be temporary (and minor compared to the construction of highway) during and immediately after clearing. If clearing was to occur during the summer months, the risk of increased sediment flow would be further reduced (Cardno, 2009b).

Due to the presence of wetlands within the application area, the proposed clearing is considered to be at variance to this principle.

**Methodology** Cardno (2009a)  
Cardno (2009b)  
DEC (2009)  
Nicole Siemon and Associates (2006)  
Waters and Rivers Commission (2001)  
GIS DataSets:  
- CALM Managed Lands and Waters - CALM 01/06/05  
- Clearing Regulations, Environmentally Sensitive Areas 30 May 2005  
- EPP Lakes Policy Area - DEP 14/05/97  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 11/04/07  
- Hydrography linear - DOW 13/7/06

**(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 has low elevation and is composed of chiefly leached sands, therefore wind erosion is unlikely to occur. There are wetlands located within the applied area (Cardno, 2009a) and the application area is already subject to inundation which may be attributed to the construction of the Perth-Bunbury highway (Cardno, 2009b). Sediment flow into adjacent wetlands is likely to be restricted as the Perth - Bunbury highway acts as a barrier restricting water flow, which allows sediments to settle. However, further clearing is likely to increase the risk of localised waterlogging.

**Methodology**

**(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 local area has approximately 25% remaining vegetation. The vegetation under application is considered to be part of a remnant in a highly cleared area, which may serve as a stepping stone for fauna species to the nearby conservation reserves within the local area (10km radius). Two unnamed nature reserves occur within the local area and are located 600 metres south and 1.4km north respectively. The Goegrup Lake Nature Reserve is located 1.4km west of the application area.

As the local area is extensively cleared, clearing of the native vegetation under application may incrementally impact on the environmental values of nearby nature reserves.

**Methodology GIS DataSets:**

- CALM Managed Lands and Waters - CALM 01/06/05
- Bushforever - 28/10/00
- Perth Metropolitan Area South 20cm Orthomosaic -Landgate 2007

**(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**

There is a multiple use wetland occurring within the application area (Cardno, 2009). There are two Environmental Protection Policy (EPP) lakes located in within close proximity of the application area. The closest is 200 metres south, the other 1.6km west. The Serpentine River is located 1.6km north west and a major perennial watercourse is 500 metres south of the applied area. There are artificial drainage lines that exist within the applied area, one of these drainage lines runs into the nearby EPP Lake. The clearing may increase the amount of sediment runoff into the EPP Lake and surrounding wetlands.

Sediment flow into adjacent wetlands is likely to be restricted as the Perth - Bunbury highway acts as a barrier restricting water flow, which allows sediments to settle (Cardno, 2009b). 'Any impact from an increased flow of sediment into adjacent wetlands is likely to be temporary (and minor compared to the construction of highway) during and immediately after clearing' (Cardno, 2009b). If clearing was to occur during the summer months, the risk of increased sediment flow would be further reduced (Cardno, 2009b).

**Methodology Cardno (2009b)**

**GIS DataSets:**

- Acid Sulfate Soil Risk Map, Swan coastal Plain - DEC 07/08/06
- 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
- Hydrogeology, statewide - DOW 13/07/06
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06
- Hydrographic catchments, catchments - DoW 01/06/07
- Topographic contours statewide - DOLA and ARMY 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**

The soils of the applied area consist of leached sands with and on the low dunes. Associated are small areas of other sand soils. Rainfall is 900mm annually and the application area has an elevation of between 0 -5 metres.

It is considered unlikely that the proposed clearing will cause or exacerbate the incidence or intensity.

- Methodology** GIS DataSets:
- Average Annual Rainfall Isohyets - WRC 29/09/98
  - Groundwater Salinity Statewide DoW 13/07/06
  - Soils, Statewide DA 11/99
  - Topographic Contours, Statewide - DOLA 12/09/02

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

### **Comments**

The applied area is zoned "Industrial" with the WAPC yet to finalise subdivision approval for the property under application.

A floristic survey for the proposed Nambelup Industrial Park, which includes parts of the application area, as well as a wider surrounding area, has been conducted by Siemon and Associates. The primary objective of this survey was to identify areas of conservation significance, with a secondary objective to determine whether rare or priority flora occur within the study area (Trim Ref: DOC85034).

The application area is within the Peel Harvey Catchment Area which is an EPP area.

Additional information provided by Cardno on behalf of the applicant states that the DEC's recommendations are not cognisant with EPA advice and other prevailing policies. Where relevant, the additional information was addressed within the clearing principles.

Amendment 141 to Shire of Murray's town Planning Scheme 4 involved the rezoning of majority of Nambelup industrial area (which includes part Lot 602) from rural to industrial development zone, this amendment was referred to EPA in 1999. The EPA determined that the environmental significance of the proposed land use change did not necessitate formal assessment, and informal advice was given. Cardno also note that this situation is acknowledged in the EPA's assessment of the Peel Region Scheme within Bulletin 994 (2000). And in a subsequent and more recent amendment (Trim Ref: DOC94850), the EPA again acknowledged that the rezoning did not necessitate formal assessment (Cardno, 2009b).

The environmental significance of the subject site has been considered previously by the EPA and that from a representative point of view (vegetation complexes and associations) the remnant vegetation within the site was not deemed important. The advice led to the zoning of the site to industrial use, which somewhat presumes that the full extent of the site would have been developed for the intended use (Cardno, 2009b).

While the land is zoned for industrial use, the Shire of Murray advises that officers do not support the proposed clearing. The Shire does not support the proposed clearing due to:

- the absence of an Outline Development Plan for the area
  - The vegetation type under application being poorly represented
  - The applied area being within the Peel-Harvey Coastal Catchment Area
- (Trim Ref: DOC86001).

**Methodology** Cardon (2009b)

## **4. Assessor's comments**

### **Comment**

The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986 and has found:

- Principle (f) is at variance
- Principle (a), (b), (c), (g), (h) & (i) may be at variance
- All other Principles are not likely to be at variance

## **5. References**

- Cardno (2009b) Response. S.Chalwell (Senior Ecologist for Cardno) (Trim Ref: DOC93482).
- DEC (2007) DEC Fauna Habitat Notes.xls. February 2007. Department of Environment and Conservation, Western Australia.
- DEC (2009) Site Inspection Report for Clearing Permit Application CPS 3097/1, Lot 602 on Plan 61605, Stake hill. Site inspection undertaken 13/05/2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC85234).
- DEC (2009b) Species & Communities Branch, Advice. Department of Environment and Conservation Trim Ref DOC86248
- 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 (2006a) 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.

EPA (2006b) Environmental Offsets - Position Statement No 9. Environmental Protection Authority, Western Australia

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.

Nicole Siemon and Associates (2006) Proposed Nambelup Industrial Park, Floristic Survey Final Report (Trim Ref: DOC85034).

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.

Water and Rivers Commission (2001) Position Statement: Wetlands, released 6/6/01.

## 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)

