GOVERNMENT OF
WESTERN AUSTRALIA

# CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

## PERMIT DETAILS

Area Permit Number: 3085/2
File Number: DEC11052
Duration of Permit: From 20 September 2009 to 20 September 2011

## PERMIT HOLDER

Northern Corridor Developments Ltd

## LAND ON WHICH CLEARING IS TO BE DONE

Lot 1001 Romeo Road, Alkimos

## AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 12 hectares of native vegetation within the area hatched yellow on attached Plan 3085/2.

## CONDITIONS

1. Avoid, minimise etc clearing
   In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
   (a) avoid the clearing of native vegetation;
   (b) minimise the amount of native vegetation to be cleared; and
   (c) reduce the impact of clearing on any environmental value.

2. The Permit Holder shall not clear any native vegetation to a height less than 100 millimetres.

3. Dieback and weed control
   (a) When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:
   (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
   (ii) shall not move soils in wet conditions;
   (iii) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
   (iv) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

**DEFINITIONS**

The following meanings are given to terms used in this Permit:

***dieback*** means the effect of *Phytophthora* species on native vegetation;

***fill*** means material used to increase the ground level, or fill a hollow;

***mulch*** means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

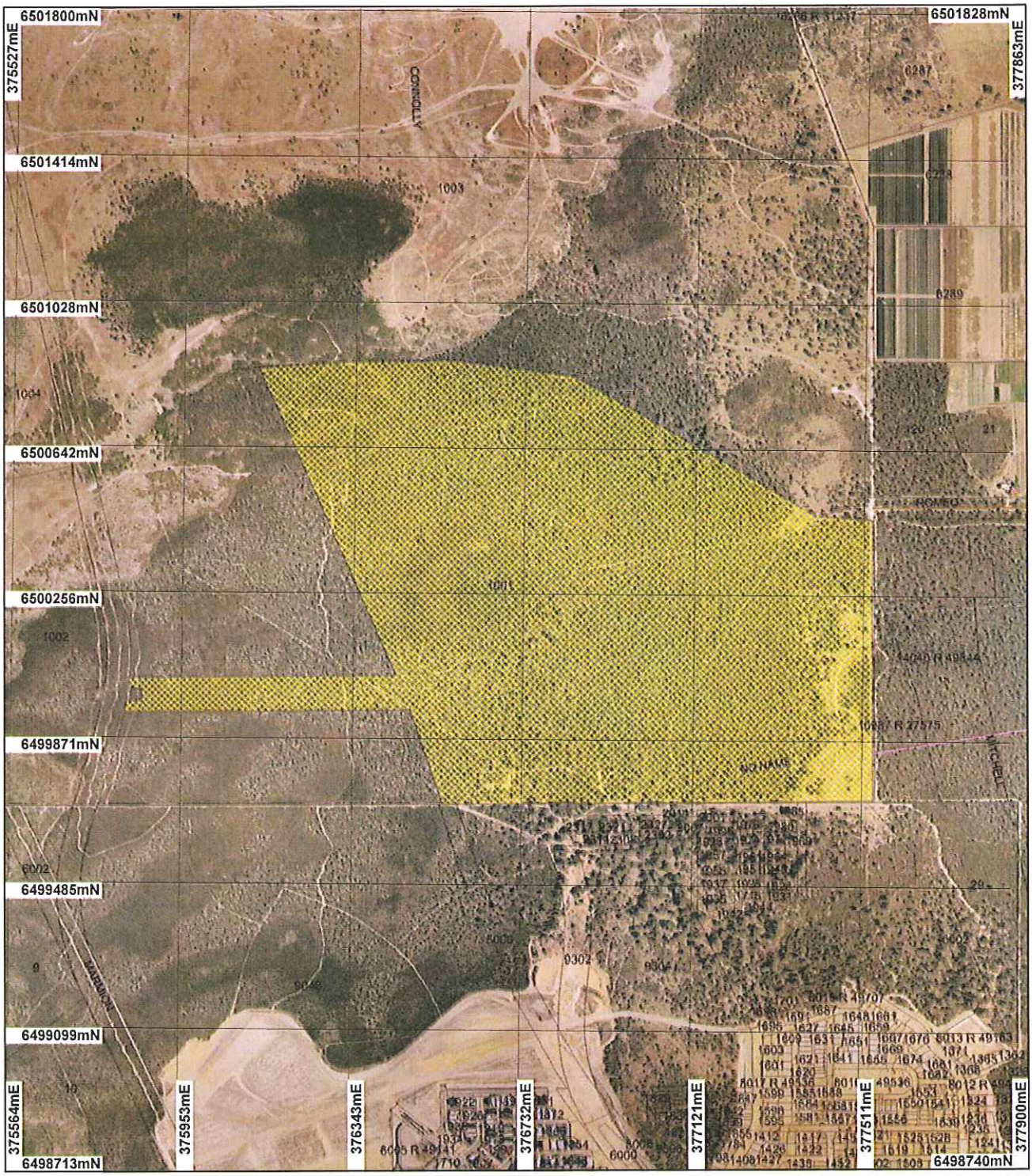
***weed/s*** means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976.*

M G Warnock
A/ MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20*
*of the Environmental Protection Act 1986*

4 November 2009

# Plan 3085/2




## LEGEND

- Cadastre for labelling
- Road Centrelines
- FW
- HY
- LRO (cont)
- LRS
- MR
- N
- TR

Clearing Instruments

- Areas Approved to Clear

Perth Metropolitan Area
North 20cm Orthomosaic - Landgate 2007

N

0 ~375 m

Scale 1:14300
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Date 5/11/09

M. G. Warnock

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.

Department of Environment and Conservation

Our environment, our future



* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.

Department of Environment and Conservation

# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

**Permit application No.:** 3085/2

**Permit type:** Area Permit

### 1.2. Proponent details

**Proponent's name:** Coffey Environments Pty Ltd on behalf of Northern Corridor Developments Ltd

### 1.3. Property details

**Property:** LOT 1001 ON PLAN 61236 (Lot No. 1001 ROMEO ALKIMOS 6038)

**Local Government Area:**

**Colloquial name:**

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|---|---|---|---|
| 12 | | 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 |
|---|---|---|---|
| Heddle vegetation complex:<br><br>Cottesloe Complex - Central and South: Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on the Limestone outcrops.<br><br>Quindalup Complex - Coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of M. lanceolata - Callitris preissii and the closed scrub of Acacia rostellifera.<br><br>Beard vegetation types:<br><br>949 - Low woodland; banksia<br><br>(Heddle et al. 1980, SAC Bio Datasets 06/10/2009) | The proposal is to clear 12ha within an area of 121 ha for the purpose of conducting an unexploded ordnance search prior to geotechnical surveys as request by the City of Wanneroo. It is proposed for 2.5m wide corridors to be cleared in a north- south direction spaced 20m apart across the area under application.<br><br>The vegetation under application comprises of nine communities. The majority of the area under application consists of Banksia attenuata and Banksia menziesii low woodland over Hibbertia hypericoides, in an excellent condition.<br><br>Banksia attenuata low woodland over Calothamnus quadrifidus heath also occurs. This community occurs to the south and is also in an excellent condition.<br><br>Dryandra sessilis closed scrub including Hibbertia hypericoides, Calothamnus quadrifidus, and Jacksonia stricta occur in a small area in the middle of the area under application in excellent condition.<br><br>Eucalyptus gomphocephala (Tuart) woodland with a middle storey of Banksia sp occurs along the southern boundary of the area under application and occurs in good to very good condition.<br><br>A small stand of Eucalyptus marginata (Jarrah) woodland occurs to the east of the area under application and is in a good condition.<br><br>Calothamnus quadrifidus mixed heath occurs in the middle of the area under application in an excellent condition.<br><br>Eucalyptus decipiens Low woodland over shrubs in the centre of the area under application in an | Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994) | Vegetation clearing description based on a site vegetation survey under taken during 15 October 2004 (ATA Environmental 2004) and site visit conducted by DEC officers on 7 May 2009. |

excellent condition

Acacia rostellifera Closed Heath to Closed Shrub occur in the north west corner of the area under application in an excellent condition

A small area of Melaleuca huegelii Low Open Shrubland occurs in the centre and far west of the area under application in an excellent 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 is at variance to this Principle**

The area under application contains nine vegetation communities including Banksia attenuata and Banksia menziesii low woodland, Banksia attenuata low woodland over Calothamnus quadrifidus heath, Dryandra sessilis closed scrub, Eucalyptus gomphocephala (Tuart) woodlands, Eucalyptus marginata (jarrah) woodland, Calothamnus quadrifidus mixed heath, Melaleuca huegelii low open shrublands, Eucalyptus decipiens low woodland and Melaleuca huegelii low open shrubland in excellent condition (ATA Environmental 2004).

A flora survey carried out in October 2004, identified 180 species including 30 exotic species of flora within lot 1001 (area under application) and 1002 Romeo Rd. The survey did not identify any rare or priority flora species occurring within the area under application, however it identified three significant flora species including Lechenaultia linariodes which is considered to be poorly reserved but not a priority or rare flora species, Petrophile serruriae subsp. nov, which is considered to be at its northern extent of its distribution and Stylidium junceum which has been identified as a distinct variant of this species which grows in the local area (ATA Environmental 2004).

The flora survey has also identified a Priority Ecological Community (PEC) occurring within the area under application, that being Floristic Community Type (FCT) 24: Northern Spearwood shrublands and woodlands and occurs in excellent condition (ATA Environmental 2004). In addition, 66 fauna species were recorded during the fauna survey (ATA Environmental 2008) including the conservation significant species Carnaby?s Black Cockatoo (Calyptorhynchus latirostris) and the Graceful Sun Moth (Synemon gratiosa).

Tuart woodlands are in decline on the Swan Costal Plain (CALM 2003). The south-western portion of the application area has been identified in the Atlas of Tuart Woodlands on the Swan Coastal Plain in Western Australia (CALM 2003) as having no disturbance with 10 to 19% canopy density. Approximately only 25 % of this canopy density class on the swan costal plain is in the condition rating of no disturbance (CALM 2003).

Given that the majority of the area under application is in excellent condition, contains nine vegetation communities, contains a PEC and Tuart woodland, and contains high floral and faunal diversity, it is considered likely for the proposed clearing to be at variance to this Principle.

**Methodology**

References
-ATA Environmental (2004)
- ATA Environmental (2008)
-CALM (2003)
GIS Databases
SAC Bio Databases (07/10/2009)

### (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**

Within the local area (~ 5 km radius) 5 species of conservation significant fauna have been recorded.

The majority of the vegetation under application is in very good to excellent condition and includes an understorey that would provide suitable habitat for ground-dwelling fauna such as snakes, lizard and the conservation significant species, Quenda (Isoodon obesulus fusciventer) and Carpet python (Morelia spilota). A fauna survey of both Lot 1001 and 1002 under taken in November 2007 identified 27 fauna vertebrate species including two species of burrowing frogs, two mammal species (Honey Possum (Tarsidpes rostratus) and the South Western Free-tail Bat (Mormopterus sp) and 23 reptiles species occurring within the area under application. In addition, there are three fauna habitat types identified within the area under application all in very good condition (ATA Environmental 2008).

Other species of conservation significance such as the Rainbow Bee-eater (Merops ornatus), Peregrine Falcon (Falco peregrinus), Western Brush Wallaby (Macropus irma), Southern Brush-tailed Phascogale (Phascogale tapoatafa tapoatafa), Black-Striped Snake (Neelaps calonotus) and the Quenda (Isoodon obesulus fusciventer)

have not been recoded during the fauna survey but has been identified in similar habitat in the local area during previous surveys (ATA Environmental 2008).

The fauna survey also recorded 39 bird species within the area under application (ATA Environmental 2008) including the conservation significant species Carnaby?s Black Cockatoo (Calyptorhynchus latirostris). The area under application consists of Banksia woodland and Tuart woodland in excellent condition (DEC 2009). Carnaby's Black Cockatoos are known to feed on seeds, nuts and flowers of a large variety of plants including Banksia, Dryandra and Grevillea, with the Northern Region of the Swan Coastal Plain considered being an important area throughout the season for this species (Shah 2006).

The Graceful Sunmoth (Synemon gratiosa), has been recorded 4.3km south of the area under application. This species requires Lomandra spp. as host plants and shows some preference for high quality vegetation (DEC 2008, Williams 2009). The area under application contains Banksia woodland and coastal heath and shrublands in an excellent condition and three Lomandra species (including both L. maritima, which is describes as common in parts of the area under application, and L. hermaphrodita) were recorded during the flora survey (ATA Environmental 2008). Therefore, it is considered likely for the area under application to provide habitat for the conservation significant Graceful Sunmoth. The proposed clearing will be done by a raise blade leaving 100mm of the vegetation. This will reduce the impact of the clearing on the Sunmoth as Lomandra species will remain and pupae of the Sunmoth will be able to survive the clearing. Therefore, it is not considered likely for the proposed clearing to significant impact on this conservation species (DEC 2009a).

Given the diversity of habitats present, and the potential of the vegetation being used by many fauna species, it is considered that vegetation at Lot 1001 Romeo Rd is significant habitat for native fauna. The proposed clearing of 2.5 m wide gridlines at 20 m intervals across Lot 1001 Romeo Rd will remove 12 ha of this habitat and cause severe fragmentation to an area of 121 ha area. Therefore, it is considered likely for the proposed clearing to be at variance to this Principle.

**Methodology**

References
- ATA Environmental (2008)
-DEC (2008)
- DEC (2009)
- Shah (2006)
- Williams (2009)

GIS Databases
-SAC Bio Databases (06/10/2009)

**(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 is one rare flora species, Eucalyptus argutifolia, recorded in the local area (~ 10 km radius) being 5.1 km east of the area under application.

This species occurs on shallow soils over limestone on slopes or gullies of limestone ridges or outcrops (Western Australia Herbarium 1998-).

The vegetation under application comprises a mixture of Banksia woodland and Tuart woodland located on spearwood sands (DEC 2009). A vegetation survey undertaken in October 2004 did not identify this species or any other rare flora within the area under application (ATA Environmental 2004).Therefore, it is considered not likely for the proposed clearing to be at variance to this Principle.

**Methodology**

References
-ATA Environmental (2004)
-DEC (2009)
-Western Australia Herbarium (1998-)

GIS Databases
-SAC Bio Databases (06/10/2009)

**(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**

Twelve recordings of the Threatened Ecological Community (TEC) 26a: Melaleuca huegelii - Melaleuca acerosa shrublands over limestone ridges was recorded in the local area (~5km radius). The nearest occurrence is 1.6 km north of the area under application.

The area under application contains Banksia attenuata and Banksia menziesii low woodland, Banksia attenuata low woodland over Calothamnus quadrifidus heath, Dryandra sessilis closed scrub, Eucalyptus gomphocephala (Tuart) woodlands, Eucalyptus marginata (jarrah) woodland, Calothamnus quadrifidus mixed heath, Melaleuca huegelii low open shrublands, Eucalyptus decipiens low woodland and Melaleuca huegelii low open shrubland

in excellent condition (ATA Environmental 2004, DEC 2009).

A flora and vegetation survey undertaken during October of 2004 did not identify any TECs occurring within the area under application. Therefore, it is not considered for the proposed clearing to be at variance to this Principle.

**Methodology** References
-ATA Environmental (2004)
-DEC (2009)
GIS Databases
-SAC Bio Databases (06/10/2009)

**(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) defines the vegetation under application as consisting of the Cottesloe Complex - Central and South and the Quindalup Complex, of which there is 41.1% and 47.1% of pre-European extent remaining respectively (EPA 2006). The vegetation under application is also described as Beard vegetation association 949: Low woodland; banksia of which there is 58.4% of pre-European extent remaining (Shepherd 2007).

The area under application is located within the City of Wanneroo, within which there is 49.7% of pre-European vegetation extent remaining. In addition, there is approximately 52.5% of pre-European vegetation remaining in the local area (~5km radius).

The vegetation types under application retain more than the EPA supported threshold level (30%) recommended in the National Objectives Targets for Biodiversity Conservation; below which species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000).

In addition, the area under application is not a significant remnant in the local area due to its small linear shape (12 ha within121 ha) and connectivity to other bushland to the east and north. Therefore, the proposal is not considered likely to be at variance to this Principle.

| | Pre-European (ha) | Current extent (ha) | Remaining % |
|---|---|---|---|
| Bioregion<br>Swan Coastal Plain | 1,501,208 | 583,141 | 38.84* |
| City of Wanneroo | 67,697 | 33 637 | 49.69* |
| Local Area (~5km radius) | 7491 | ~3932 | ~52.5 |
| Heddle vegetation complex<br>Cottesloe Complex- Central<br>And South | 44 995 | 18 474 | 41.1 |
| Quindalup Complex | 24381 | 11598 | 47.1 |
| Beard type in Bioregion<br>949 | 209 983 | 122 677 | 58.4** |

* (Shepherd 2007)
**(EPA, 2006)

**Methodology** References
-EPA (2000)
-EPA (2006)
-Shepherd (2007)
GIS Databases
-Heddle Vegetation Complexes
-NLWRA, Current Extent of Native Vegetation
-Pre-European Vegetation

**(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 nearest wetland to the area under application is a Resource Enhancement Wetland, Carabooda Lake,

occurring 1.3 km northwest and a Conservation Category Wetland occurring 2 km west of the area under application. The nearest watercourse (Chandala Brook) occurs 26 km east of the area under application.

Given the distance to the nearest watercourse and wetlands it is not considered likely for the proposed clearing to be at variance to this Principle.

**Methodology** GIS Databases
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Hydrography, linear

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

**Comments** **Proposal is not likely to be at variance to this Principle**
The soils within the area under application are part of the Spearwood Dune System and comprise of siliceous sands with some brown sands and leached sands (Northcote et al. 1960-68), which are considered to have a high risk of wind erosion (Department of Agriculture 2005).

There is a low salinity risk within the applied area. Therefore, it is not considered likely that the proposed clearing would result in an increase in salinity. Given this and the thin, linear nature of the proposed clearing, the risk of wind erosion will be reduced. Therefore, it is not considered likely for the proposed clearing to cause appreciable land degradation.

**Methodology** References
-Department of Agriculture (2005)
-Northcote et al. (1960-68)
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 may be at variance to this Principle**
The nearest conservation area is Neerabup National Park which is also Bush Forever site 383 and occurs directly adjacent on to the area under application.

The proposed clearing is considered to cause fragmentation of fauna habitat that is under application which may impact on the adjoining Neerabup National Park by limiting faunal movement out of the area under application into the conservation area and vice versa. In addition, the area under application is a part of a continuous north south bushland linkage (Government of Western Australia 2000). This linkage also connects Bush Forever site 383 with Bush Forever site 398.

As the area under application is directly adjacent to Neerabup National Park, the proposed clearing could also impact on this conservation area through the spread and introduction of weeds species or dieback by machinery. This can cause potential local extinction of species.

Given this, it may be considered for the proposed clearing to impact on the environmental values of an adjacent conservation area.

A weed and dieback management condition will be placed on the permit to mitigate this impact.

**Methodology** GIS Databases
-References
- Government of Western Australia (2000)
GIS Databases
-Bushforever
-DEC Managed Lands and Waters
- Perth Metropolitan Area North 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 is not likely to be at variance to this Principle**
There nearest wetland to the area under application is a Resource Enhancement Wetland, Carabooda Lake, occurring 1.3 km northwest and a Conservation Category Wetland occurring 2 km west of the area under application. The nearest watercourse (Chandala Brook) occurs 26 km east of the area under application.

The area under application is not within a Priority Drinking Water Source Area (PDWSA) and has a low salinity risk. Therefore, it is unlikely for the proposed clearing to cause deterioration to the quality of underground water.

Given the distance to the closest wetlands and watercourse, and low salinity risk, it is not considered for the proposed clearing to be at variance to this Principle.

**Methodology** GIS Databases
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Hydrography, linear
-Priority Drinking Water Source Area (PDWSA)
-Salinity Risk

**(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**
There nearest wetland to the area under application is a Resource Enhancement Wetland, Carabooda lake, occurring 1.3 km northwest and a Conservation Category Wetland occurring 2 km west of the area under application. The nearest watercourse (Chandala Brook) occurs 26 km east of the area under application.

Given the distance to the nearest watercourse and wetlands it is not considered likely for the proposed clearing to be at variance to this Principle.

**Methodology** GIS Databases
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Hydrography, linear

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

**Comments**

The proposal to clear was originally for 2 ha of native vegetation for the purpose of carrying out geotechnical survey across a 40 ha area. Coffey Environmental has applied to amend the proposed area to 12 ha across a 121 ha area due to an increase in the works program. The proponent is now required to undertake a 10% unexploded ordnance search of the property. This will involve the slashing to 100mm of medium to light cover vegetation within 2.5 m wide transects spaced every 20 m in a north-south direction (Coffey Environmental 2009). All overstorey trees will be left in situ with no clearing proposed within the public open spaced areas which will be flagged in the field prior to the commencement of clearing. The survey will use a track machine and a four-wheel drive mounted drill rig (Coffey Environmental 2009).

Correspondence was sent to applicant on 9 July 2009 requesting for additional information regarding the manner and timing in which the proposed clearing is to occur. A response was received on 9 August 2009 stating that clearing is proposed to occur prior to March 2010 and native vegetation will be cleared with a raised blade up a height no less than 100mm.

The Local Structure Plan (LSP) for Lots 1002 and 1001( area under application falls within 1001) Romeo Rd, Alkimos has been referred to the Department of Environment , Water, Heritage and the Arts (DEWHA) by the proponent due to the Carnaby's Black Cockatoo being recorded on site during a fauna survey.

The DEWHA has assessed the impact of the proposed development on the Carnaby's Black Cockatoo and have granted approval on the 11 September 2009 with conditions (DEWHA 2009).

The City of Wanneroo (2009) approved the local structure plan for this property and has referred it too WAPC in 2008 with decision pending. The City recommends that, when clearing native vegetation in accordance with any clearing permit granted, care is to be taken to mitigate adverse impacts on surrounding native vegetation that is to be retained within and outside of the boundaries of Lot 1001 Romeo Road, Alkimos, especially in relation to the Neerabup National Park which adjoins Lot 1001 on the eastern boundary. In addition, the City states that a fauna and flora management plan should be prepared prior to the removal of vegetation to ensure vegetation is retained where possible, impact on significant fauna managed effectively and conservation areas protected from development (City of Wanneroo, 2009).

**Methodology** References
-City of Wanneroo (2009)
-Coffey Environmental (2009)
-DEWHA (2009)

## 4. Assessor's comments

**Comment**
The assessable criteria have been addressed and the clearing as proposed is at variance to Principles (a) and (b) and may be at variance to Principle (h).

## 5. References


ATA Environmental (2004) Lot 3 Romeo Road, Alkimos Flora and Vegetation Survey, Northern Corridor Developments LTD.

ATA Environmental (2008) Lot 3 Romeo Road, Alkimos Vertebrate Fauna Assessment, Northern Corridor Developments LTD.

CALM (2003), An Atlas of Tuart Woodlands on the Swan Coastal Plain in Western Australia. Department of Conservation and Land Management, Western Australia.

City of Wanneroo (2009) Direct Interest Submission. Trim Ref.DOC101529

Coffey Environments (2009) Clearing Permit Application and additional documents. TRIM Ref DOC97704

DEC (2008), Science Division, Science Research Centre, Advice on the Graceful Sunmoth. TRIM Ref DOC27059

DEC (2009) Site Inspection Report for Clearing Permit Application CPS 3085/1, Lot 1001, Romeo Road, Alkimos. Site inspection undertaken 07/05/2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC84115).

DEC (2009a) Science Division, Science Research Centre, Advice on the Graceful Sunmoth for Clearing Application CPS 3085/2 Lot 1001 Romeo Rd, Alkimos. TRIM Ref DOC100941

DEWHA (2009) Copy of Approval from the Department of Environment, Water, Heritage and the Arts of the Local Structure Plan for Lots 1001 and 1002 Romeo Rd, Alkimos. TRIM Ref DOC100704.

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 (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 (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.

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

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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. (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.

Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. http://florabase.dec.wa.gov.au/ (Accessed 06/10/09).

Williams M.R (2009) Butterflies and Day-flying Moths in a Fragmented Urban Landscape, South-west Western Australia: Patterns of Species Richness. Pacific Conservation Biology V15,p 32-46. TRIM Ref DOC88237


## 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) |