



## CLEARING PERMIT

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

### PERMIT DETAILS

Area Permit Number: 3291/1

File Number: DEC12015

Duration of Permit: From 15 November 2009 to 15 November 2011

### PERMIT HOLDER

Raymond and Eleonora Palmer

### LAND ON WHICH CLEARING IS TO BE DONE

LOT 23 on DIAGRAM 65277 (IOPPOLO ROAD, CHITTERING, 6084)

### AUTHORISED ACTIVITY

Clearing of up to 1.62 hectares of native vegetation within the area shaded yellow on attached Plan 3291/1

### CONDITIONS

#### 1. 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.
- (b) At least once in each 12 month period for the *term* of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.

### 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;

*term* means the duration of this Permit, including as amended or renewed;

*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*.



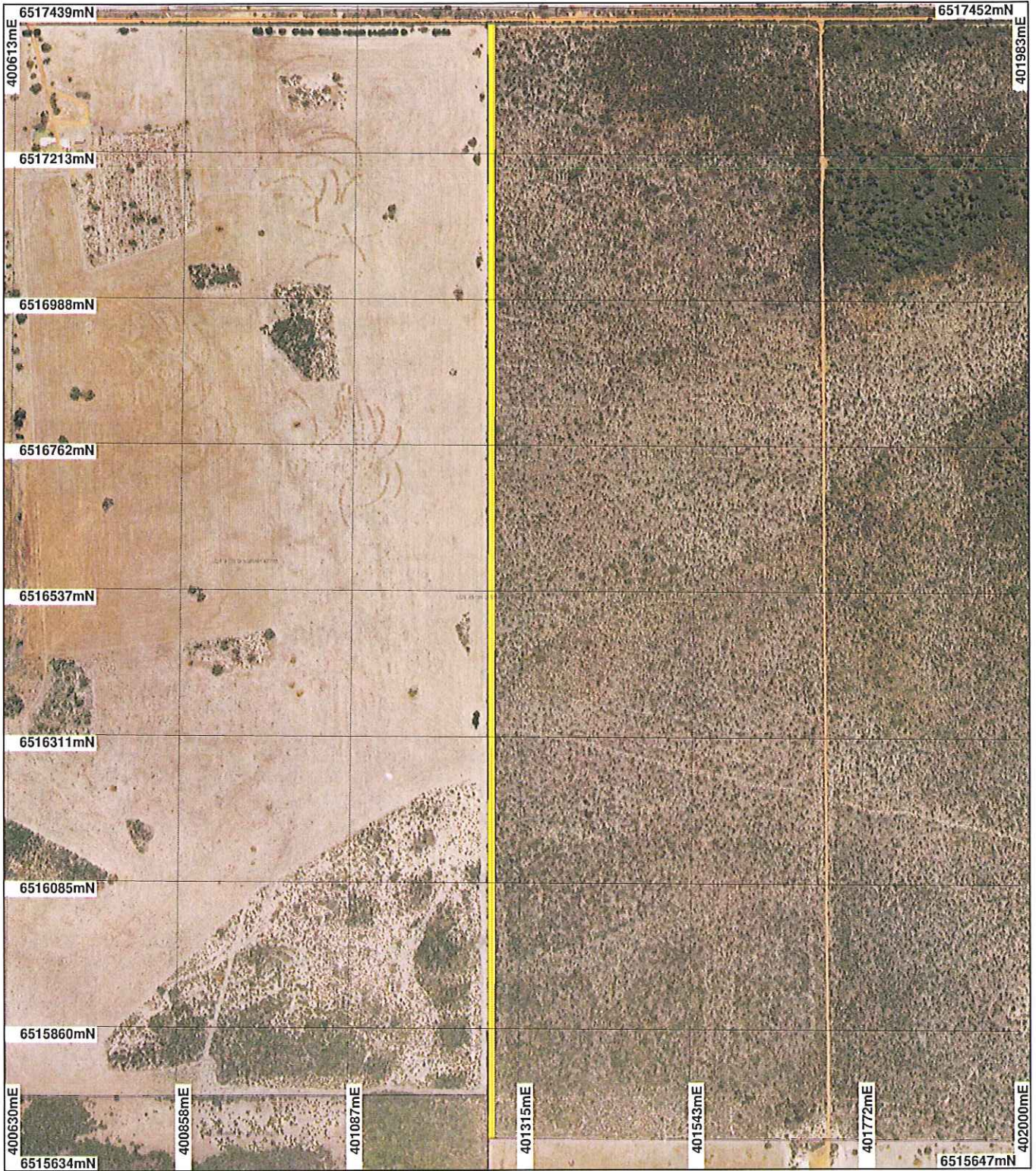
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Kelly Faulkner  
MANAGER  
NATIVE VEGETATION CONSERVATION BRANCH

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

15 October 2009

# Plan 3291/1



## LEGEND

- Clearing Instruments**
- Areas Approved to Clear
  - Road Centrelines
  - Cadastre
  - Cadastre for labelling

Gingin 50cm Orthomosaic - Landgate 2008



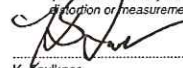
0 ~200 m

Scale 1:8000

(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 15/10/09

K. Faulkner  
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

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## 1. Application details

### 1.1. Permit application details

Permit application No.: 3291/1  
Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: **Raymond George & Elenora Anna Palmer**

### 1.3. Property details

Property: LOT 23 ON DIAGRAM 65277 (House No. 266 IOPPOLO CHITTERING 6084)  
Local Government Area:  
Colloquial name:

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|--------------------|-----------|--------------------|---------------------|
| 1.62               |           | 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  |
|---|---|--|--|
| Hedde vegetation complex: Reagan complex: Vegetation ranges from low open woodland of Banksia species E. tottiana to closed heath depending on the depth of soil. (Hedde et al 1980).   | The proposal is to clear up to 1.62 hectares of native vegetation within a 10 metre wide easement for the purpose of the construction of a gravel driveway. To reduce the amount of clearing the proposed driveway will be located at the western boundary fence, utilizing an existing fire break in this locality.  | Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994) | The vegetation clearing description is based on a site inspection by DEC officers on 22 September 2009 |
| Coonambidgee complex: Vegetation ranges from a low open forest and low woodland of E. tottiana - B. attenuata - B. menziesii - B. ilicifolia with localised admixtures of B. prionotes to an open woodland of E. calophylla - Banksia species (Hedde et al 1980). | The vegetation under application comprises Eucalyptus tottiana, Banksia attenuata B. ilicifolia, Nutysia floribunda, Callitris preissii, Bossiaea eriocarpa, Conostephium pendulum, Hibbertia huegelii, Hibbertia hypericoides, Petrophile linearis, Stirlingia latifolia, Alegeorgea nitens, Burchardia umbellate, Drosera erythrorhiza, Dorsera menziesii subsp. penicillaris, Lyginia barbata, Patersonia occidentalis, Daviesia triflora, Eremaea pauciflora, Eriostemon spicatus, Jacksonia densiflora/floribunda, Dasyogon bromelifolius, Caladenia flava, Adenanthos cygnorum, Calandrinia spp, Eremaea spp, Anigozanthos manglesii, Xanthorrhoea preissii, Elythranthrea spp, Kunzea spp, Amphipogon turbinatus, Conostylis |  |  |
| Beard Vegetation Association: 965 - Medium woodland; jarrah & marri. (Shepherd 2007; SAC Bio datasets 17/09/2009).  |   |  |  |

aurea, *Conostylis setigera* and *Hypolaena exsulca*, with limited patches of bare soil, apart from the fire break.

The vegetation within the applied area is considered to be in excellent (Keighery, 1994) condition (DEC, 2009a).

### 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 described as Eucalyptus and Banksia woodland over shrubland in excellent (Keighery, 1994) condition (DEC, 2009a). The vegetation includes *Eucalyptus totidiana*, *Banksia attenuata* B. *ilicifolia*, *Nutysia floribunda*, *Callitris preissii*, *Bossiaea eriocarpa*, *Conostephium pendulum*, *Hibbertia huegelii*, *Hibbertia hypericoides*, *Petrophile linearis*, *Stirlingia latifolia*, *Alegeorgea nitens*, *Burchardia umbellata*, *Drosera erythrorhiza*, *Dorsera menziesii* subsp. *penicillaris*, *Lyginia barbata*, *Patersonia occidentalis*, *Daviesia triflora*, *Eremaea pauciflora*, *Eriostemon spicatus*, *Jacksonia densiflora/floribunda*, *Dasypogon bromelifolius*, *Caladenia flava*, *Adenanthos cygnorum*, *Calandrinia* spp, *Eremaea* spp, *Anigozanthos manglesii*, *Xanthorrhoea preissii*, *Elythranthrea* spp, *Kunzea* spp, *Amphipogon turbinatus*, *Conostylis aurea*, *Conostylis setigera* and *Hypolaena exsulca*, with limited patches of bare soil, apart from the fire break.

There are eleven species of priority flora species found within the local area (10km radius), the closest *Acacia drummondii* subsp. *affinis* (P3) is located approximately 132 metres from the applied area and is found within same vegetation complex and soil type to the that found within the area under application. However, this species was not observed within the applied area during the DEC site inspection (DEC, 2009a).

The vegetation found within the southern portion of the applied area was inferred as Floristic Community Type 22: *Banksia ilicifolia* woodlands which is listed as a Priority Ecological Community (PEC) (DEC, 2009e) and the northern portion of the applied area is located within the mapped buffer of a Threatened Ecological Community (TEC).

Given the vegetation under application comprises a PEC and is within the buffer of a mapped TEC and consists of a variety of species, the vegetation under application is considered to comprise a high level of biological diversity.

**Methodology**      **References:**  
- DEC (2009a)  
- DEC (2009e)  
- Keighery (1994)  
**GIS Databases:**  
- Gingin 50cm Orthomosaic - Landgate 2006  
- SAC BIO datasets - accessed 14/09/2009  
- Soils, Statewide - DA 11/99

#### (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**

There are no records of fauna species of conservation significance within the local area (10km radius).

The dense vegetation under application is likely to provide suitable habitat for a range of ground dwelling fauna species such as the Quenda, Kangaroo, snakes and lizard species; with numerous kangaroo scratchings and scats, and local foraging bird species were observed during the DEC site inspection (DEC, 2009a). However, given the long, linear nature of the proposed clearing over 1.7km and the proximity of conservation reserves in the local area, the vegetation on site is not considered likely to provide significant habitat for the Endangered Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) and ground dwelling fauna species in the local area (DEC, 2009a).

Therefore, the proposed clearing is not considered likely to be at variance to this Principle.

**Methodology**      **References:**  
- Burbidge, A (2004)  
- DEC (2009a)  
**GIS databases:**

- Bushforever - MFP 07/01
- CALM Managed Lands and Waters
- CALM Regional Parks
- SAC Bio datasets accessed 17/06/2009

**(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**

Within the local area (10km radius) there are 42 known occurrences of the rare flora species. Of the identified rare flora species, only *Chamelaucium lullfitzii* is found within the same vegetation complex and soil type to that found on site and is located approximately 200m east of the applied area.

*Chamelaucium lullfitzii* flowers in September-December and is generally found in white or yellow sands (Western Australian Herbarium, 1998), and according to Brown et al (1998) is restricted to the Gingin area and is easily identified by its flowers. A targeted survey for *C. lullfitzii*, did not find any plants of this rare flora species within the area under application (DEC, 2009f).

Given that no rare flora were identified on site, it is not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

**Methodology References:**

- Brown et al (1998)
  - DEC (2009f)
  - Western Australian Herbarium (1998)
- GIS Databases:**
- Bushforever
  - Heddle Vegetation Complexes
  - Gingin 50cm Orthomosaic - Landgate 2006
  - SAC Bio Databases 14/09/2009
  - Soils, Statewide

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

There are 10 known occurrences of Threatened Ecological Communities (TEC) within 10km radius of the area under application, the closest Floristic Community Type FCT20a - *Banksia attenuata* woodlands over species rich dense shrublands, is located approximately 45m east of the area under application. The northern portion of the applied area is located within the (1000m) buffer of this identified TEC. This TEC has a very restricted range.

Given the above, it is considered that the vegetation may be necessary for the maintenance of, a TEC.

**Methodology References:**

- DEC (2009c)
  - DEC (2009e)
- GIS Databases:**
- Heddle Vegetation Complexes
  - Soils Statewide
  - SAC BIO Datasets - accessed on 14/09/2009

**(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 Reagan Complex and Coonambidgee Complex of which there is 38% and 45.1% respectively of pre-European extent remaining (EPA 2006). The vegetation under application is also described as Beard vegetation association 965 of which there is 87% of pre-European extent remaining (Shepherd 2007).

The area under application is located within the Shire of Chittering, within which there is 74.71% of pre-European extent remaining.

The Environmental Protection Authority (EPA) identifies a 30% threshold level as recommended in the National Objectives Targets for Biodiversity Conservation; below which species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000). The Beard vegetation type and Heddle complexes are above the recommended minimum of 30% representation.

Given the high representations of the vegetation associations, the proximity of conservation reserves in the local area and the small size of the applied area (1.62ha), it is not considered likely that the vegetation under application is significant as a remnant in the local area.

|  | Pre-European<br>(ha) | Current extent<br>(ha) | Remaining<br>(%) | In secure tenure<br>(%) |
|--|----------------------|------------------------|------------------|-------------------------|
| IBRA Bioregion*<br>Swan Coastal Plain^       | 1,501,208            | 583,140                | 38.84            |                         |
| Shire of Chittering**                        | 1,643                | 1,227                  | 74.71            |                         |
| Hedde vegetation complex**<br>Reagan Complex | 9,097                | 3,455                  | 38.0             | 1.9                     |
| Coonambidgee Complex                         | 6,272                | 2,830                  | 45.1             | 9.4                     |
| Beard vegetation type*<br>965                | 1,815                | 1,581                  | 87.0             |                         |

\* (Shepherd, 2007)

\*\* (EPA, 2006)

^ Area within Intensive Land Use Zone

#### Methodology

##### References:

- EPA (2000)
- EPA (2006)
- Hedde et al (1980)
- Shepherd et al (2007)

##### GIS Databases:

- Gingin 50cm Orthomosaic - Landgate 2006\_1- Pre-European Vegetation
- Hedde Vegetation Complexes
- SAC Bio Datasets accessed 7/09/2009

#### (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 numerous wetlands within a 10km radius of the area under application, including a Conservation Category Wetland (Lake Chandala) and a Resource Enhancement Wetland, which are respectively located approximately 300m south and 3.2km southwest of the applied area. In addition, there are also numerous Environmental Policy Protection (EPP) Lakes within the local area, the closest (Chandala Swamp) being situated approximately 484m southwest of the applied area. Chandala Swamp is also identified as an Australian Native Conservation Agency (ANCA) Wetland.

The closest watercourse is Chandala Brook which is located approximately 980m southwest of the applied area.

*Kunzea glabrescens* was observed on site (DEC, 2009a) and is a species generally found in sandy soils in association with damp depressions (Western Australian Herbarium 1998) and is considered to be wetland dependant vegetation.

Given the size of the clearing under application and distance to wetlands and watercourses, it is considered that the applied vegetation is not likely to be at variance to this clearing principle.

#### Methodology

##### References:

- DEC (2009a)
- Western Australian Herbarium (1998)

##### GIS Databases:

- ANCA wetlands - Environment Australia 26/3/99
- EPP, Lakes
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Gingin 50cm Orthomosaic - Landgate 2006\_1- Pre-European Vegetation
- Hydrography, linear (hierarchy)

**(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 chief soils within the area under application are described as leached sands (Northcote et al. 1968). Generally, these soils have a high risk of wind erosion and a low risk of water erosion due to the high infiltration rates associated with sands.

Although generally there is a low salinity risk associated with these soils, salinity risk mapping has identified a small pocket (~0.06ha) within the applied area as having a high salinity risk due to its low position in the landscape. However, given the limited size (0.06ha) of the area identified as being at risk, it is not considered likely that the proposed clearing would result in any significant increase in salinity.

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 (Department of Agriculture, 2005), however, given the proposed land use is for the construction of a driveway, nutrient levels should not be artificially elevated therefore minimising the risk of eutrophication. Furthermore, the thin, linear nature of the proposed clearing and the sealing of exposed surfaces with gravel would minimise the risk of wind erosion.

Given the above, it is therefore not considered likely that the proposed clearing would result in appreciable land degradation

**Methodology References:**

- Department of Agriculture (2005)
  - Northcote et al. (1960-68)
- GIS Databases:
- Gingin 50cm Orthomosaic - Landgate 2007
  - Salinity Risk 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 four areas reserved for conservation purposes within a 10km radius of the area under application, the closest being Chandala Nature Reserve which is located immediately adjacent to the south western portion of the applied area. In addition, the entire length (~1.7km) of the eastern side of the applied area is located immediately adjacent to Lot 24, a large remnant (~163ha) with intact vegetation which is considered to be in excellent (Keighery, 1994) condition (DEC, 2009a).

Lot 24 has high conservation values due to the occurrence of rare flora, a Threatened Ecological Community (TEC) and Priority Ecological Community (PEC) being recorded within this property (DEC, 2009b) and the northern and southern portions of the proposed clearing fall within the buffer zones of the identified TEC and PEC (DEC, 2009c). Furthermore, DEC (2009d) advice that Lot 24, currently referred to as Ioppolo Nature Reserve, is freehold land which has been purchased by the Department of Environment and Conservation for the intended purpose of a nature reserve, with the intention for it to be added to Chandala Nature Reserve.

The proposed clearing may impact the environmental values of the adjacent reserve and Lot 24 through the spread or introduction of dieback and weed species, by machinery and gravel infill for the proposed driveway (DEC, 2009f). In particular, Lot 24 has been surveyed for *Phytophthora cinnamomi* (dieback) and has been identified as being dieback free (DEC, 2009g). The consequences associated with the spread of dieback and exotic species into areas reserved for conservation include the potential decline or local extinction of species.

In order to minimise the risk of introducing weeds or dieback into Lot 24 and the nearby conservation reserve, conditions have been imposed on the permit relating to weed and dieback prevention, and the requirement of dieback free gravel for the construction of the driveway.

Given the size of the area under application and the extent of clearing to the west of the area under application it is unlikely the proposed clearing will have a significant impact on surrounding conservation areas.

**Methodology References:**

- DEC (2009a)
  - DEC (2009b)
  - DEC (2009c)
  - DEC (2009d)
  - DEC (2009f)
  - DEC (2009g)
  - Keighery (1994)
- GIS Databases:
- Bushforever



**(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 applied area is situated within the Ellen Brook Catchment, but is not located within a Public Drinking Water Source Area. The nearest wetland, a CCW Wetland (Lake Chandala) is located approximately 300m south of the applied area and the closest watercourse is Chandala Brook which is located approximately 980m southwest of the area under application. Given the high infiltration rates of the sandy soils identified on site, and the distance to the nearest wetland and watercourse, it is not considered likely that the proposed clearing would cause water erosion resulting in deterioration in surface water quality.

Salinity risk mapping has identified several small portions (~0.06ha) within the applied area as having a high salinity risk. However, given the limited size (0.06ha) of the area identified as being at risk, it is not considered likely that the proposed clearing would result in any significant increase in salinity resulting in the deterioration in the quality of underground water.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** GIS Databases:  
- ANCA wetlands - Environment Australia 26/3/99  
- EPP, Areas  
- Hydrographic Catchments - Subcatchments\_1  
- Hydrography, linear (hierarchy)  
- Public Drinking Water Source Areas (PDWSA)  
- Salinity Risk LM 25m- DOLA 00  
- Topographic Contours, Statewide- DOLA 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 area under application is located approximately 980m northeast of the Chandala Brook and approximately 300 metres north of the Lake Chandala, a CCW Wetland, at an elevation of 65 - 80 metres.

Given the distance to the nearest wetland and watercourse and the high infiltration of the soils on site, it is not considered likely that the proposed removal of vegetation would impact on peak flood height or duration.

**Methodology** GIS Databases:  
- ANCA wetlands - Environment Australia 26/3/99  
- EPP, Lakes  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC  
- Hydrography, linear (hierarchy) - DOW  
- Topographic Contours, Statewide - DOLA

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

**Comments**

Lot 23 on Diagram 65277 is freehold land, zoned Rural 2 - General Farming under the local Town Planning Scheme.

In a submission, the Ellen Brockman Integrated Catchment Group Inc. did not support the clearing of native vegetation within the Ellen Brockman catchment as it could result in a change in hydrology by mobilising salt and phosphorous in the catchment. In addition issues relating to the occurrence of rare flora, the potential introduction of dieback and fragmentation of areas of native vegetation were raised. These issues were considered during the assessment of the clearing application.

In a submission, the Shire of Chittering advised that Lot 23 is designated as a Special Control Area under Part 6 of the Shire's Town Planning Scheme 'Landscape Protection Area' and is also identified in the Shire's Local Biodiversity Strategy as having 'Very Good' rating of existing native vegetation. Furthermore, the Shire advice that it endorses the issues raised by the Ellen Brockman Integrated Catchment Group, but recognises the necessity for the property owner to access his property, and as such, consider the area under application as being the most practical access route.

**Methodology** References:  
- Submission, Direct Interest Submission, 7 September 2009, TRIM DOC97524.  
- Submission, Direct Interest Submission, 30 September 2009, TRIM DOC99614.  
GIS Databases:  
- Town Planning Scheme Zones

## 4. Assessor's comments

### Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing is may be at variance to Principles (a) and (d); and are not likely to be at variance to the clearing Principles (b), (c), (e), (f),(g), (h), (i) and (j).

## 5. References

- Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- DEC (2009a) Site Inspection Report for Clearing Permit Application CPS 3291/1, Construction of driveway. Site inspection undertaken 22/09/2009. Department of Environment and Conservation, Western Australia (TRIM Ref: DOC98938).
- DEC (2009b) Flora advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, received 14/09/2009. Department of Environment and Conservation, Western Australia (TRM DOC97666).
- DEC (2009c) Flora advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, received 30/09/2009. Department of Environment and Conservation, Western Australia (TRM DOC99579).
- DEC (2009d) Flora advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, received 30/09/2009. Department of Environment and Conservation, Western Australia (TRM DOC99612).
- DEC (2009e) Flora advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, received 8/10/2009. Department of Environment and Conservation, Western Australia (TRM DOC100550).
- DEC (2009f) Flora advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, received 8/10/2009. Department of Environment and Conservation, Western Australia (TRM DOC100561).
- DEC (2009g) Flora advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, received 12/10/2009. Department of Environment and Conservation, Western Australia (TRM DOC100884).
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- 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.
- Submission, Direct Interest Submission, Ellen Brockman Integrated Catchment Group Inc. 7 September 2009, TRIM DOC97524.
- Submission, Direct Interest Submission, Shire of Chittering. 30 September 2009, TRIM DOC99614.
- Submission, Direct Interest Submission, Shire of Chittering. 30 September 2009, TRIM DOC99615.
- Western Australian Herbarium (1998). Florabase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au> (Accessed 14/09/2009).

## 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)                    |