GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 3522/1
Permit Holder:	Department of Training and Workforce Development on Behalf of Minister for Training
Duration of Permit:	14 March 2010 – 14 March 2015

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I –CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of construction of an Automotive Training Centre

2. **Land on which clearing is to be done**
   Lot 930 on Deposited Plan 220463 Somerville Drive, College Grove

3. **Area of Clearing**
   The Permit Holder must not clear more than 1.1 hectares of native vegetation within the area cross-hatched yellow on attached Plan 3255/1a.

4. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. **Compliance with Assessment Sequence and Management Procedures**
   Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

6. **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 only move soils in *dry 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.

7. Flora management

(a) Prior to undertaking any clearing authorised under this Permit, the site shall be inspected by a *flora specialist* for the presence of rare flora listed in the *Wildlife Conservation (Rare Flora) Notice* 2009 and *priority flora*.

(b) Where rare flora or *priority flora* are identified in relation to condition 7(a) of this Permit, the Permit Holder shall ensure that:
   (i) all records of rare flora and *priority flora* are submitted to the CEO;
   (ii) no clearing occurs within 50 metres of identified rare flora, unless approved by the CEO; and
   (iii) no clearing occurs with 10 metres of identified *priority flora*, unless approved by the CEO.

8. Fauna management

(a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* who shall identify habitat/*habitat tree(s)* suitable to be utilised by fauna species listed below:
   (i) Western ringtail possum (Pseudocheirus occidentalis)
   (ii) Carnaby's black cockatoo (Calyptorhynchus latirostris)
   (iii) Baudin's black cockatoo (Calyptorhynchus baudinii)
   (iv) Red-tailed forest black cockatoo (Calyptorhynchus banksii naso)
   (v) Quenda (Isoodon obesulus fusciventer)

(b) Prior to clearing, any habitat/*habitat tree(s)* identified by condition 8(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in condition 8(a).

(c) Prior to clearing, the Permit Holder shall ensure that any fauna identified by condition 8(b) shall be removed and relocated by a *fauna clearing person*, in accordance with a licence issued by the Department.

9. Offsets

If part or all of the clearing to be done is or may be at variance with one or more of the clearing principles, then the Permit Holder must implement an *offset* in accordance with conditions 9(a) and (b) of this Permit with respect to that clearing.

(a) Determination of *offsets*:
   (i) in determining the *offset* to be implemented with respect to a particular area of native vegetation proposed to be cleared under this Permit, the Permit Holder must have regard to the *offset* principles contained in condition 9(b) of this Permit;
   (ii) once the Permit Holder has developed an *offset proposal*, the Permit Holder must provide that *offset proposal* to the CEO for the CEO's approval prior to undertaking any clearing to which the *offset* relates, and prior to implementing the *offset*;
   (iii) clearing may not commence until and unless the CEO has approved the *offset proposal* to which the clearing relates;
   (iv) the Permit Holder shall implement the *offset proposal* approved under condition 9(a)(iii); and
   (v) each *offset proposal* shall include a *direct offset*, timing for implementation of the *offset proposal* and may additionally include *contributing offsets*.

(b) For the purpose of this condition, the *offset* principles are as follows:
   (i) *direct offsets* should directly counterbalance the loss of the native vegetation;
   (ii) *contributing offsets* should complement and enhance the *direct offset*;
   (iii) *offsets* are implemented only once all avenues to avoid, minimise, rectify or reduce environmental impacts have been exhausted;

(iv) the environmental values, habitat, species, *ecological community*, physical area, ecosystem, landscape, and hydrology of the *offset* should be the same as, or better than, that of the area of native vegetation being *offset*;
(v) a ratio greater than 1:1 should be applied to the size of the area of native vegetation that is offset to compensate for the risk that the *offset* may fail;
(vi) *offsets* must entail a robust and consistent assessment process;
(vii) in determining an appropriate *offset*, consideration should be given to ecosystem function, rarity and type of *ecological community*, vegetation *condition*, habitat quality and area of native vegetation cleared;
(viii) the *offset* should either result in no net loss of native vegetation, or lead to a net gain in native vegetation and improve the *condition* of the natural environment;
(ix) *offsets* must satisfy all statutory requirements;
(x) *offsets* must be clearly defined, documented and audited;
(xi) *offsets* must ensure a long-term (10-30 year) benefit; and
(xii) an *environmental specialist* must be involved in the design, assessment and monitoring of *offsets*.

10. Wind erosion management

The Permit Holder shall not clear native vegetation unless the construction of automotive training centre begins within 1 month of the clearing being undertaken.

11. Stormwater management

The Permit Holder shall not cause or permit the discharge of stormwater into the area cross-hatched red on attached Plan 3522/1b.

PART III - RECORD KEEPING AND REPORTING

12. Records must be kept

(a) In relation to flora management pursuant to condition 7 of this Permit:
(i) the location of each rare and/or priority flora species, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; and
(ii) the species name of each rare and/or priority flora species identified.

(b) In relation to fauna management pursuant to condition 8 of this Permit:
(i) the location of each habitat/or habitat tree identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
(ii) the species name of fauna reasonably likely to utilise, or that have been observed utilising, the habitat/habitat tree(s); and
(iii) the location and date where relocated fauna was released, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings.

(c) In relation to the offset of areas pursuant to condition 9 of this Permit:
(i) the location of any area of *offsets* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
(ii) a description of the *offset* activities undertaken; and
(iii) the size of the *offset* area (in hectares).

13. Reporting

(a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 12 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

(b) Prior to 11 December 2014, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

Definitions

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

condition means the rating given to native vegetation using the *Keighery scale* and refers to the degree of change in the structure, density and species present in the particular vegetation in comparison to undisturbed vegetation of the same type;

contributing offset/s has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9: Environmental Offsets*, January 2006;

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

direct offset/s has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9: Environmental Offsets*, January 2006;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

ecological community/ies means a naturally occurring biological assemblage that occurs in a particular type of habitat (English and Blythe, 1997; 1999);

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fauna clearing person means a person who has obtained a licence from the *Department*, issued pursuant to the *Wildlife Conservation Regulations 1970* authorising them to take fauna;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

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

flora specialist means a person with specific training and/or experience in the ecology and taxonomy of Western Australian flora;

habitat tree(s) means trees that have a diameter, at average adult human chest height, of greater than 70cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts;

Keighery scale means the vegetation condition scale described in *Bushland Plant Survey: A Guide to Plant Community Survey for the Community (1994)* as developed by B.J. Keighery and published by the Wildflower Society of WA (Inc). Nedlands, Western Australia;

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;

offset/s means an offset required to be implemented under condition [#] of this Permit;

offset proposal means an *offset* determined by the Permit Holder in accordance with condition [#]of this Permit;

priority flora means those plant taxa described as priority flora classes 1, 2, 3 or 4 in the *Department*'s *Declared Rare and Priority Flora List for Western Australia* (as amended);

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

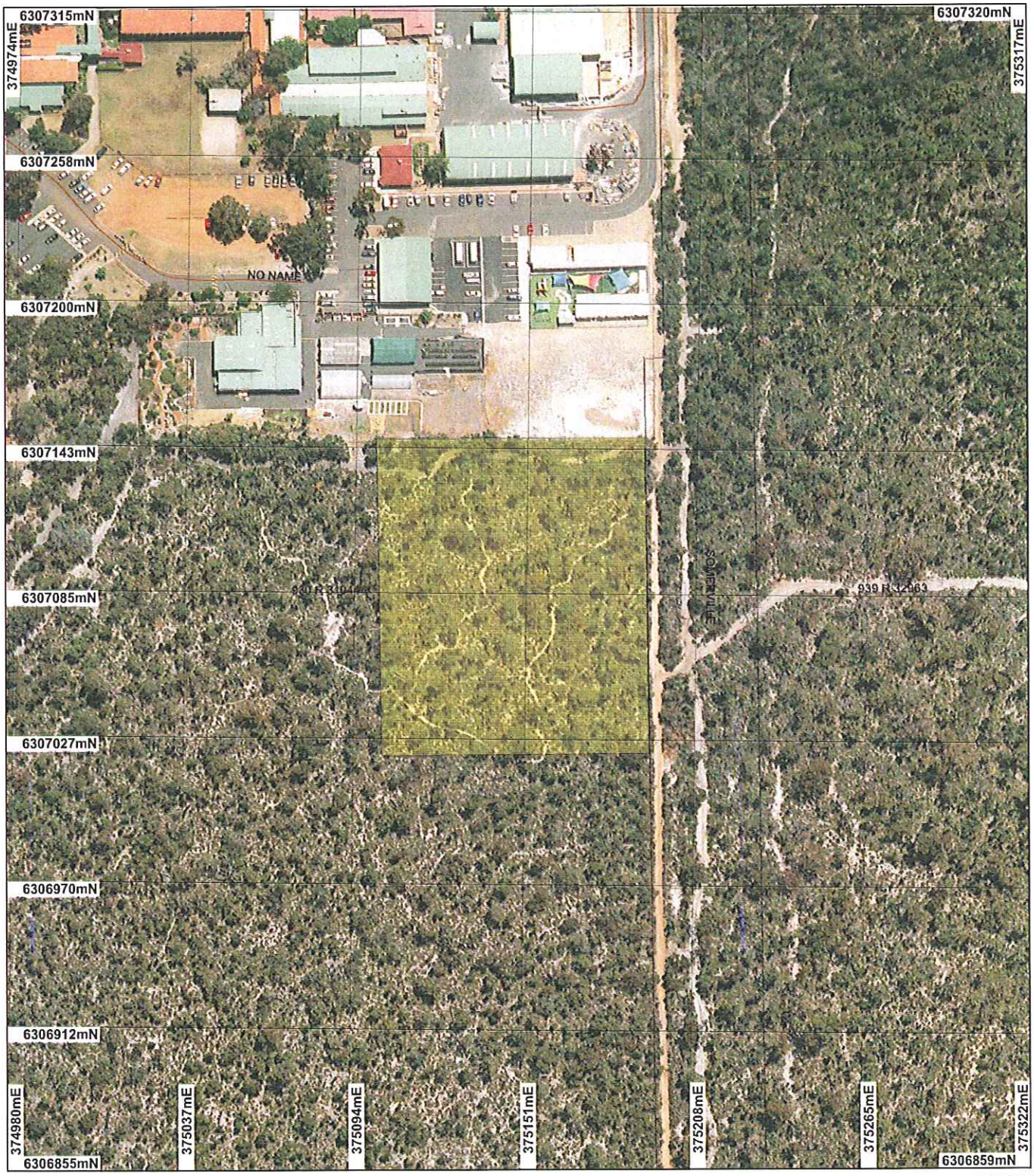
weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976.*

Keith Claymore
A/ ASSISTANT DIRECTOR
NATURE CONSERVATION DIVISION

Officer delegated under Section 20
of the Environmental Protection Act 1986

11 February 2010

Plan 3522/1a



LEGEND

- Cadastre for labelling
- Road Centrelines
  - FW
  - HY
  - LRO (cont)
  - LRS
  - MR
  - N
  - TR
- Clearing Instruments
  - Areas Approved to Clear

Bunbury Townsite 20cm Orthomosaic - Landgate 2007

N

0 ~50 m

Scale 1:2027
(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.

K. Calymore Date 11/2/10

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 acknowleged by the agency acronym in the legend.

Department of Environment and Conservation

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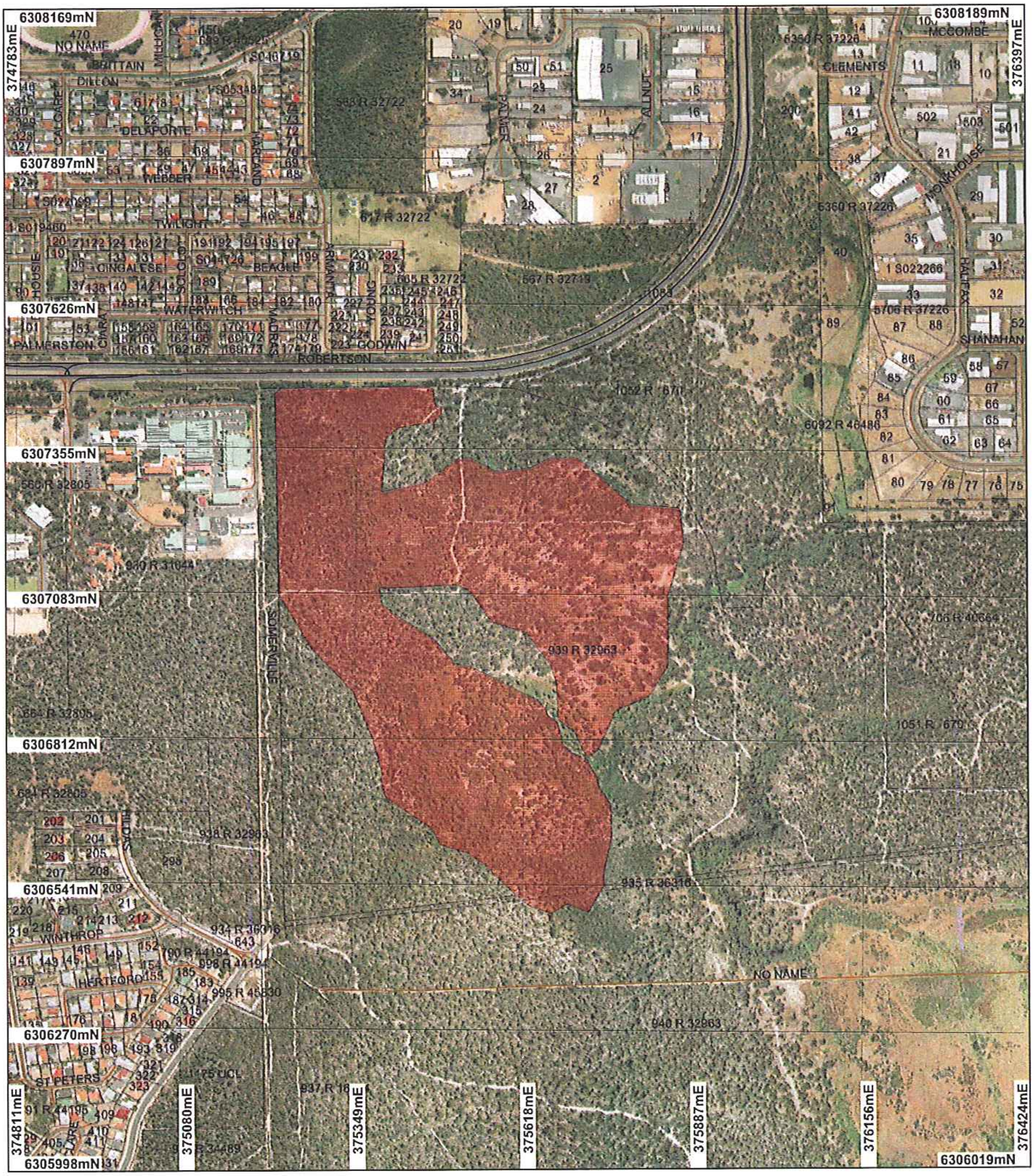
* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.

Plan 3522/1b



LEGEND

☐ Cadastre for labelling

Road Centrelines
- FW
- HY
- LRO (cont)

- LRS
- MR
- N
- TR

Clearing Instruments
- Areas Subject to Conditions

Bunbury Townsite 20cm Orthomosaic - Landgate 2007

N

0 — 250 m

Scale 1:9549
(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.

K. Claymore Date 11/12/10

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 acknowleged by the agency acronym in the legend.

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Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3522/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Peter Hunt Pty Ltd on behalf of Department of Training and Workforce Development**

1.3. Property details

Property: LOT 930 ON PLAN 220463 (Lot No. 930 SOMERVILLE COLLEGE GROVE 6230)
Local Government Area:
Colloquial name: South West Regional College TAFE - Bunbury

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.1		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
Beard Vegetation Association: 6: Medium woodland; tuart & jarrah Heddle Vegetation Complex: Karrakatta Complex- Central and South: Predominantly open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri) and woodland of Eucalyptus marginata (Jarrah) - Banksia species. Shepherd 2007, Heddle et al 1980).	The proposal is to clear 1.1ha for the purpose of expanding the South West Regional College TAFE- Bunbury. The vegetation under application consists of woodland or Banksia attenuata and Eucalyptus marginata with a open middlestorey of Kunzea sp,. Xylomelum occidentale, Persoonia longifolia and Nuytsia floribunda with a closed understory in an excellent (Keighery 1994) condition.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The vegetation condition was determined from site visit conducted by DEC officers on the 2 February 2010 (DEC 2010)

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 proposal is to clear 1.1ha for the purpose of expanding the South West Regional College Tafe - Bunbury.

The vegetation under application consists of woodland or Banksia attenuata and Eucalyptus marginata with an open middlestorey of Kunzea sp., Xylomelum occidentale, Persoonia longifolia and Nuytsia floribunda with a closed understory in an excellent (Keighery 1994) condition (DEC 2010).

The vegetation on the site is connected by native vegetation to a Conservation Category Wetland (CCW) that contains SCP 09 Threatened Ecological Community and occurs within the buffer to these significant ecological features. Clearing of this buffer may impact on this Threatened Ecological Community and CCW by altering hydrology, reducing fauna habitat and increasing disturbance through weed encroachment. Therefore, the applied area may be necessary for the maintenance of a threatened ecological community and a conservation category wetland.

The area under application is considered to be significant feeding habitat for the critically endangered Carnaby's black cockatoo, Baudin's black cockatoo and the vulnerable Red-tailed forest black cockatoo that have been recorded in the local area. In addition, the area may maintain significant habitat for the conservation significant Quenda and provides significant habitat for the Western Ringtail Possum.

A Priority Ecological Community (PEC) SCOP 21b - Southern Banksia attenuata woodlands has been identified ~60 m east of the applied area. The vegetation community and soil type within the applied area correlates to this PEC (DEC 2010) and it may occur within the applied area. To establish if this PEC occurs in the applied area and the impact the proposed clearing may have on this PEC a flora survy is to be carried out.

The area under application contains site characteristics that may be suitable for two flora species of conservation significance, Caladenia speciosa (P4) and Platysace ramosissima (P3). A flora survey would be required to be undertaken to establish if these species are present.

In addition, the proposed clearing area is recognised as part of a two ecological linkages recognised in the Greater Bunbury Regional Scheme (Greater Bunbury Regional Scheme) and the South West Regional Ecological Linkages Project (Molley et al 2009, EPA 2009) and is in close proximity to informal conservation reserves.

Given the above and that the vegetation under application is in an excellent condition the proposed clearing is at variance to this Principle. A fauna and lora management condition and an offset condition has been placed on the permit to mitigate this impact.

Methodology

References
-DEC (2010)
-EPA (2003)
-EPA (2009)
-Molley et al. (2009)
GIS Databases
- SAC Bio Datasets (14/01/2010)

(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

Ten conservation significant fauna species were recorded in the local area (~10km radius) including the Quenda (Isoodon obesulus fusciventer), Carnaby's black cockatoo (Calyptorhynchus latirostris), Western brush wallaby (Macropus irma), Baudin's black cockatoo (Calyptorhynchus baudinii), Forest red-tailed black cockatoo (Calyptorhynchus banksii naso), Bruch-tailed phascogale (phascogale tapoatafa sp.) ,Black Bittern (Lxobrychus flavicollis australia), Chuditch (Dasyurus geoffroic), Eastern Curlew (Numenius Madagascariensis) and the Water-rat.

The area under application consists of Banksia and Jarrah woodland in excellent condition (DEC 2010). The endangered Carnaby's black cockatoo has been recorded in the local area and is known to feed on Jarrah and Banksia species (Cale 2003). In addition, the endangered Baudin's black cockatoo and the vulnerable Red tailed black cockatoo has also been recorded in the local area and known to feed on Jarrah (CALM 2005). It is acknowledged that there are large remnants of native vegetation in the local area; however the cumulative impacts from the reduction of black cockatoo foraging habitat on the Swan Coastal Plain has resulted in vegetation that provides a food and nesting source for the endangered black cockatoos being considered as significant habitat. The continual net loss of critical habitat will result in additional pressure on the current population of black cockatoos. Therefore, the 1.1 ha under application is considered to be significant feeding habitat for these species.

In addition, the area under application occurs ~ 20m east of a conservation category wetland and a part of this wetland's buffer. Many fauna move between upland and wetland areas for feeding and breeding therefore an intact vegetation buffer is important to maintain wetland values (DEC 2008). Therefore, the vegetation under application may contribute to maintaining ecological values, including fauna values, of this conservation category wetland.

The Quenda (Isoodon obesulus fusciventer) occurs in dense, scrubby and often swampy vegetation with dense cover and often feeds in adjacent areas lying close to dense cover (DEC 2007). The area under application contains vegetation in an excellent condition with a dense understorey and occurs adjacent to a swampy area. Therefore the area under application may be a part of a significant habitat for the Quenda in the local area.

Western Ringtail Possums have been recorded in local area, occurring north-west, north east and south of the applied area (DEC 2010). In addition, the area under application occurs within 'supporting habitat' for the Western Ringtail Possum, as outlined in the Environment Protection and Biodiversity Conservation (EPBC) Act Policy Statement 3.10. 'Supporting habitat' is habitat that buffers key local populations from threats as well as providing foraging, breeding and dispersal opportunities and should be protected (DEWHA 2008). Therefore, the area under application may provide habitat for the Western Ringtail Possum and a fauna survey is to be carried out to establish the impact the proposed clearing may have on this species.

In addition, the area under application is part of a regionally significant north south ecological linkage as recognized in the Greater Bunbury Regional Scheme (EPA 2003) and is a part of a east west regional ecological linkages as identified in the South West Regional Ecological Linkage Project (Molley et al 2009, EPA

2009). These linkages help facilitate movement of fauna across the landscape. Removing the applied area may reduce fauna and flora movement between Manea Park and Hay Park which are information conservation reserves, in an east west direction.

Given the above, the proposed clearing is at variance to this Principle. A fauna management condition has been placed on the permit to mitigate this impact.

Methodology

References
-Cale (2003)
-CALM (2005)
-DEC (2010)
-DEC (2008)
-DEC (2007)
-DEWHA (2008)
-EPA (2003)
-EPA (2009)
-Molley et al. (2009)
GIS Databases
-SAC Bio Datasets (14/01/2010)
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain

(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

Two rare flora species have been recorded in the local area (~10km radius) including Caladenia huegelii and Diuris drummondii.

Caladenia huegelii grows in deep sandy soil in mixed woodland of Jarrah (Eucalyptus marginata) and banksia and favours lush undergrowth. This species is susceptible to weed invasion (Brown et al. 1998). The area under application contains Jarrah and Banksia woodland on sandy soils and has dense understorey in an excellent condition (DEC 2010) therefore the assessment recommendation is that this species may occur within the application area. A flora survey is to occur to establish the impact of clearing on this species.

Diuris drummondii is a tuberous, perennial, herb that grows between 0.5-1.05 m high that occurs in low-lying depressions in peaty and sandy clay swamps that contain water into summer (Brown et al 1998). The area under application does not contain low-lying depressions and therefore it is not likely for this species to occur within the applied area.

Observations made during the site visit have indicated that the rare flora species Drakaea elastica may occur within the applied area (DEC 2010). This species flowers in Oct-Nov, with a green leaf being obvious in August; is usually found in 'white or grey sand in low-lying situations adjoining winter-wet swamps' and is often found in association with thickets of Kunzea glabrescens above winter wet areas (Western Australian Herbarium 1998-). The vegetation under application is described as Jarrah and Banksia woodland on sandy soils with an understorey containing Kunzea sp (DEC 2010). The applied area has a downward slope in a northeast direction and it is considered that the northeast corner which occurs ~ 20m west of a wetland may contain the preferred habitat for Drakaea elastica. A flora survey is to occur to establish the impact of the proposed clearing on this species.

Therefore, the proposed clearing may be at variance to this Principle. A flora management condition has been imposed on the permit to mitigate this impact.

Methodology

References
-Brown et al. (1998)
-DEC (2010)
-Western Australian Herbarium (1998-)
GIS Databases
-SAC Bio Datsets (14/01/2010)

(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

Numerous Threatened Ecological Communities (TEC) occur within 2 km of the applied area including SCP08: Herb rich shrublands in clay pans (1.1km west), SCP18: Shrublands on calcareous silts (1.5 km west), SCP07: Herb rich saline shrublands in clay pans (1.2 km south) and SCP09: Dense shrublands on clay flats (200 m east).

The area under application consists of Banksia and Jarrah woodland on grey sands and does not contain wetland vegetation (DEC 2010). Therefore it is unlikely for this TEC to occur within the applied area.

However, the vegetation on the site is connected by native vegetation to SCP 09 TEC and occurs within its buffer. Clearing of this buffer may impact on this Threatened Ecological Community by altering hydrology, reducing fauna habitat and increasing disturbance through weed encroachment. Therefore, the applied area may be necessary for the maintenance of a threatened ecological community. The proposed clearing may be at variance to this Principle. A weed and dieback condition and a stormwater management condition are to be placed on the permit to mitigate this impact.

Methodology References
-DEC (2010)
GIS Databases
-SAC Bio Datsets (14/01/2010)

(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 described as Beard vegetation association 6 of which there is 26.18%, of pre-European extent remaining respectively (Shepherd 2007). The Heddle Vegetation complex for the area under application is Karrakatta Complex - Central and South of which there is 29.50% of pre-European vegetation extent remaining respectively (EPA 2006).

In addition, there is approximately 26.14% of pre-European vegetation remaining in the local area (~10km radius).

The area under application also lies within the 'Greater Bunbury Regional Constrained Area' of the Swan Coastal Plain. The EPA's objective is to retain at least 10% of the pre-clearing extent of the ecological community in the 'Constrained Area' of the Greater Bunbury Region where greater than 10% of the ecological community remains on the Swan Coastal Plain (EPA 2003). Mapping indicates greater than 10% of Beard Unit 6 and Heddle Karrakatta Complex Central will remain within the constrained area. Additionally, approximately 26.14% of native vegetation remains within the local area (10km radius).

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

	Pre-European (ha)	Current extent (ha)	Remaining %
IBRA Bioregion Swan Coastal Plain*	1501208.8	583140.8	38.84*
City of Bunbury*	6180.87	1620.38	26.22*
Local Area (~10km radius)	24080.2	6294	26.14
Beard type in Bioregion* 6	56343.1	14749.9	26.18
Heddle Vegetation Complex ** Karrakatta Complex- Central and South	49912.0	14729.0	29.50

* (Shepherd 2007)
** EPA (2006)

Methodology References
-Shepherd (2007)
-EPA (2006)
-EPA (2003)
GIS Databases
-Interim Biogeographic Regionalisation of Australia
-NLWA, Curent Extent of Native Vegetation
- SAC Bio Databases (14/01/2010)

(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 may be at variance to this Principle**
The closest watercourse and wetland to the area under application is a major watercourse (Eedles Gully) and a Conservation Category dampland (CCW), which occur approximately 600m east and 20m east of the applied area, respectively. The applied area occurs within the 50m buffer of the CCW.

Wetland buffers protect wetlands against potential impacts and maintain ecological functions and processes (Water and Rivers Commission, 2001). Reducing wetland buffers can increase edge effects such as weed invasion, decrease biodiversity, reduce vegetation condition, impact on fauna habitat and impact on water quality of a wetland (DEC 2008).

Wetland buffers can serve many roles including retention and dilution processes, screening for sensitive fauna and flora from human disturbances, shelter and breeding location for fauna, sources of food resources, organic material and biophysical processes, barrier between weed invasion and providing eco corridors (DEC 2008).

Given that a portion of the area under application occurs within the wetland buffer, the proposed clearing may be at variance to this Principle. An offset condition is to be placed on the permit to mitigate this impact.

Methodology

References
-DEC (2008)
-Waters and Rivers Commission (2001)
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 may be at variance to this Principle

The area under application contains soils of brown sands and associated siliceous and leached sands with some areas of sandy and clayey swamp flats (Northcote et al 1960-68). Due to the sandy soils, it is considered likely for this area to be susceptible to wind erosion once cleared.

Wind erosion may cause sedimentation of the nearby wetland which is also a Threatened Ecological Community and CCW. Therefore, the proposed clearing may be at variance to this Principle. A soil management condition has been placed on the permit to mitigate this impact.

Methodology

References
-Northcote et al. (1960-68)
GIS Databases
-SAC Bio Databases (14/01/2010)
-Soil, 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 is at variance to this Principle

The area under application is within the north/south Maidens / Preston River Ecological Linkage, as outlined in the Great Bunbury regional Scheme and recognised by EPA (2003).

There are no formal conservation reserves within 10 km of the area proposed to be cleared. However, the application area occurs adjacent with an informal conservation reserve, Manea Park, vested in the City of Bunbury. Another informal reserve vested to the City, Hay Park, is situated ~270m west of the proposed clearing.

Threatened and priority fauna have been recorded in the greater Manea Park area and it is likely that the applied area is utilised by a range of fauna and it is likely that the applied area allows fauna movement between these reserves.

In addition, the area under application is part of a regionally significant north south ecological linkage as recognized in the Greater Bunbury Regional Scheme (EPA 2003) and is a part of a east west regional ecological linkage as identified in the South West Regional Ecological Linkage Project (Molley et al 2009, EPA 2009). These linkages help facilitate movement of fauna and flora across the landscape. Removing the applied area may reduce fauna and flora movement between Manea Park and Hay Park.

In addition, the proposed clearing will also indirectly affect this reserve through the introduction and spread of weeds and dieback. A weed and dieback condition is to be placed on the permit to mitigate this impact.

Given the proposed clearing is within a recognised ecological linkage and is in close proximity to informal conservation reserves the area under application is at variance to this clearing principle. An offset condition is to be placed on the permit to mitigate this impact.

Methodology

References
-EPA (2003)
- EPA (2009)
-Molley et al (2009)

GIs Databases
-SAC Bio Databases (14/01/2010)
-Town Planning Scheme Zones

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments

Proposal may be at variance to this Principle

The closest watercourse and wetland to the area under application is a major watercourse (Eedles Gully) and a Conservation Category dampland, which occur approximately 600m east and 20m east of the applied area, respectively.

Given the small area to be cleared (1.1ha) and that it is surrounded by continuous vegetation, the assessment recommendation is that the proposed clearing will not cause deterioration in the quality of underground water.

However, due to the sandy soils, it is considered likely for this area to be susceptible to wind erosion once cleared. Wind erosion can cause sedimentation and turbidity of the nearby wetland's surface water which is also recorded as a Threatened Ecological Community.

Therefore, the assessment recommendation is that the proposed clearing may be at variance to this Principle. A stormwater management and a soil management condition has been placed on the permit to mitigate this impact.

Methodology

GIS Databases
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Hydrography, linear
-Soil, Statewide

(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 may be at variance to this Principle

The closest watercourse and wetland to the area under application is a major watercourse (Eedles Gully) and a Conservation Category dampland, which occur approximately 600m east and 20m east of the applied area, respectively.

Given the close proximity to the conservation category damp land (20m) clearing of 1.1 ha may increase the incidence or intensity of flooding within this wetland by allowing more water to enter the water table therefore, the Proposed clearing may 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 is to clear 1.1ha for the purpose of expanding the South West Regional College Tafe - Bunbury. This area has been amended from 1.65 ha down to 1.1ha.

The area under application is reserved for the purpose of a technical school as outlined on the Certificate of Title and is zoned Public Purpose: Technical School under the Greater Bunbury Regional Scheme.

No development approvals are required from the City of Bunbury. However, development approval is required from WAPC. An application is in the process of being submitted to the WAPC.

The end landuse of the application may result in higher frequency and magnitude of runoff, relative to the surrounding area. This could alter the hydrology of the nearby wetland, including changes in the size, timing, location and magnitude of inundation. Additionally, large volumes of heavy metals and other pollutants from the proposed automotive training centre may be channelled into the wetland through runoff. Increased groundwater recharge, due to reduced transpiration and pooling of runoff, could also create a rise in local groundwater levels, which could negatively impact biodiversity assets by creating waterlogging. Stormwater and road runoffs should not be directed into neighbouring wetlands.

Permit 1887/1 is adjacent to the area under application and is for the construction of Somerville Drive. This Permit was granted on the 31 January 2008 with dieback and weed, flora management, offsets and stormwater management conditions.

Methodology

GIS Databases
-Greater Regional Bunbury Scheme

4. Assessor's recommendations

Comment / recommendation

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 assessment recommendation is that the proposed clearing is at variance to the clearing Principles (a), (b) and (h) and may be at variance to Principle (c), (d), (f), (g), (i) and (j).

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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 (now DEC)
DMP	Department of Mines and Petroleum (ex DoIR)

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)