



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 5625/1
File Number: 2013/003243-1
Duration of Permit: From 2 July 2016 to 24 March 2025

PERMIT HOLDER

Hovey Property Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 122 on Diagram 59932, Parkfield

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 6.5 hectares of native vegetation within the area hatched yellow on attached Plan 5625/1.

CONDITIONS

1. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 24 March 2020.

2. Dieback and weed control

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*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared;
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared; and
- (d) where *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is to be removed from the area to be cleared, ensure it is transferred to areas of comparable *soil disease status*.

3. Fauna management

- (a) Prior to undertaking any clearing authorised under this permit, the Permit Holder shall engage a *fauna specialist* to conduct a *fauna survey* of the area hatched yellow on attached Plan 5625/1 to identify fauna specified in Schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2015*; and
- (b) Within one week prior to undertaking clearing authorised under this permit, the Permit Holder shall engage a *fauna specialist* to remove and relocate fauna identified under condition 3(a).

4. Offsets – conservation covenant

Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall:

- (a) give a conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* setting aside the *covenant area* for the protection and management of vegetation in perpetuity; and
- (b) provide to the CEO a copy of the executed conservation covenant.

5. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) prior to 30 June 2020, *revegetate* and *rehabilitate* the cleared area(s) by:
 - (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land; and
 - (ii) ripping the pit floor and contour batters within the extraction site;
 - (iii) laying the vegetative material and topsoil retained under condition 5(a) on the cleared area(s);
 - (iv) at an *optimal time* deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area; and
 - (v) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.
- (c) within 18 months of undertaking *revegetation* and *rehabilitation* in accordance with condition 5(b) of this Permit:
 - (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
 - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 5(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.
- (d) Where additional *planting* or *direct seeding* of native vegetation is undertaken in accordance with condition 5(c)(ii) of this permit, the Permit Holder shall repeat condition 5(c)(i) and 5(c)(ii) within 24 months of undertaking the additional *planting* or *direct seeding* of native vegetation.
- (e) Where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 5(c)(i) and 5(c)(ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 5(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 5(c)(ii).

6. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to fauna management pursuant to condition 3 of this Permit:
 - (i) the location of each fauna identified, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) 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 or decimal degrees; and
 - (iii) a copy of the fauna specialist's report.

- (c) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 5 of this Permit:
 - (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the date *revegetation* and *rehabilitation* activities commenced;
 - (iii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iv) the size of the area *revegetated* and *rehabilitated* (in hectares);
 - (v) the species composition, structure and density of *revegetation* and *rehabilitation*, and
 - (vi) a copy of the environmental specialist's report.

7. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 6 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 24 December 2024, the Permit Holder must provide to the CEO a written report of records required under condition 6 of this Permit where these records have not already been provided under condition 7(a) of this Permit.

DEFINITIONS

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

Covenant area means the area of land cross-hatched red on attached Plan 5625/1;

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

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist: means a person 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, or who is approved by the CEO as a suitable environmental specialist;

fauna specialist: means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*;

fauna survey: means a field-based investigation, including a review of established literature, of the biodiversity of fauna and/or fauna habitat of the Permit Area. Where conservation significant fauna are identified in the Permit Area, the survey should also include sufficient surrounding areas to place the Permit Area into local context;

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

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared;

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;

optimal time means the period from April to June for undertaking *direct seeding*, and the period from May to June for undertaking *planting*;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing mulch;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

soil disease status means soil types either infested, not infested, uninterpretable or not interpreted with a pathogen;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned;

Wildlife Conservation (Specially Protected Fauna) Notice means those fauna taxa gazetted as rare fauna pursuant to section 14(4) of the *Wildlife Conservation Act 1950* (as amended).



James Widenbar
A/SENIOR MANAGER
CLEARING REGULATION

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

2 June 2016



1. Application details

1.1. Permit application details

Permit application No.: 5625/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Hovey Property Pty Ltd

1.3. Property details

Property: LOT 122 ON DIAGRAM 59932, PARKFIELD
Local Government Authority: HARVEY, SHIRE OF
DER Region: Greater Swan
DPaW District: WELLINGTON
Localities: PARKFIELD

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
6.5		Mechanical Removal	Extractive industry

1.5. Decision on application

Decision on Permit Application: Granted

Application:

Decision Date: 2 June 2016

Reasons for Decision: The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the *Environmental Protection Act 1986*, and it has been concluded that the proposed clearing is at variance to clearing principles (a) and (b), may be at variance to principles (e), (g) and (h), is not at variance to principles (d) and (i), and is not likely to be at variance to the remaining clearing principles.

Through assessment it has been determined that the proposed clearing will result in the removal of 6.5 hectares of significant habitat for Carnaby's cockatoo, Baudin's cockatoo, forest red-tailed black cockatoo and western ring-tailed possums.

To mitigate the significant environment impacts identified above, and in accordance with the WA Environmental Offset Policy and Environmental Offsets Guidelines, prior to undertaking any clearing, the Permit Holder is required to place a conservation covenant over 35 hectares of native vegetation located adjacent to the northern boundary of the proposed clearing. The 35 hectare offset area contains vegetation with comparable environmental values in the same condition, or better than, the application area.

To further mitigate impacts to fauna, prior to clearing the applicant is required to undertake a fauna survey to identify fauna specified in Schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2015* and to remove and relocate any fauna identified.

The Shire of Harvey has issued an Extractive Industry Licence and Planning Consent for the proposed works. These approvals were taken into consideration in the decision to grant a clearing permit.

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: 998 - Medium woodland; tuart (Shepherd et al. 2001).	The clearing consists of 6.5 hectares of native vegetation for the purpose of sand extraction on Lot 122 on Diagram 59932, Parkfield, within the Shire of Harvey.	Excellent; Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994).	Vegetation description and condition were determined through aerial imagery, supporting documentation provided by the applicant (Ekologica Pty Ltd 2012) and a site inspection (Parks and Wildlife 2013a).
Hedde vegetation complex: Yoongarillup Complex - Woodland to tall woodland of <i>Eucalyptus gomphocephala</i> (tuart)		To	The vegetation under application is described as an <i>Agonis flexuosa</i> , <i>Banksia attenuata</i> , <i>Eucalyptus marginata</i> , <i>Eucalyptus gomphocephala</i> closed forest over <i>Hibbertia hypericoides</i> , <i>H. racemosa</i> ,

with *Agonis flexuosa* in the second storey. Less consistently an open forest of *Eucalyptus gomphocephala* (tuart) - *Eucalyptus marginata* (jarrah) - *Corymbia calophylla* (marri) (Heddle et al. 1980).

Good; Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994).

Phyllanthus calycinus open low heath with *Lomandra* sp. and annual herbs (Parks and Wildlife 2013a).

The vegetation is representative of Southern *Eucalyptus gomphocephala*, *Agonis flexuosa* woodlands (FCT 25), with a small area being Central *Banksia attenuata*, *Eucalyptus marginata* woodlands (FCT21a) (Parks and Wildlife 2013a).

A Level 2 flora and vegetation survey conducted over the application area described the vegetation under application as *Banksia attenuata*-*Agonis flexuosa* low woodland with emergent jarrah and tuart (Ekologica Pty Ltd 2012). The survey also concluded the vegetation under application was representative of FCT25 and FCT21a (Ekologica Pty Ltd 2012).

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposed clearing is at variance to this Principle

The application is to clear up to 6.5 hectares of native vegetation within Lot 122 on Diagram 59932, Parkfield, for the purpose of sand extraction.

In December 2015 it was identified that an area of approximately 2 hectares within the application area was cleared prior to the clearing permit being granted. In time, this area has the ability to regenerate to its pre-clearing condition and therefore this area has been included in the following assessment, assessed at its pre-cleared condition.

The application area is described as an *Agonis flexuosa*, *Banksia attenuata*, *Eucalyptus marginata*, *Eucalyptus gomphocephala* closed forest over *Hibbertia hypericoides*, *H. racemosa*, and *Phyllanthus calycinus* open low heath with *Lomandra* sp. and annual herbs (Parks and Wildlife 2013a). The vegetation is in good to excellent (Keighery 1994) condition, with the majority in very good (Keighery 1994) condition (Parks and Wildlife 2013a).

The application area is representative of Floristic Community Type (FCT) 25 – Southern *Eucalyptus gomphocephala*, *Agonis flexuosa* woodlands and FCT21a - Central *Banksia attenuata*, *Eucalyptus marginata* woodlands (Parks and Wildlife 2013a; Ekologica Pty Ltd 2012).

Six priority ecological communities (PEC) have been mapped within the local area (10 kilometre radius). A site inspection conducted by Department of Parks and Wildlife (Parks and Wildlife) officers determined the application area to be representative of the Priority 3 community Southern *Eucalyptus gomphocephala*-*Agonis flexuosa* woodlands (SCP25) (Parks and Wildlife 2013a). The occurrence of this PEC is not accurately mapped, but appears to occur in approximately 26 locations over the Swan Coastal Plain (Parks and Wildlife 2013b). Given the boundaries of the PEC have not been confirmed, the impact of the proposed clearing on this PEC's conservation status is not known (Parks and Wildlife 2013b).

The applicant advised (RPS 2013a) that the Level 2 flora and vegetation survey conducted over the application area identified the application area as having a higher number of species 'typical' and 'common' of FCT21 than FCT25 (Ekologica Pty Ltd 2012). The applicant concluded that the application area is not representative of a PEC as the survey report considered the vegetation to be more representative of FCT21 than FCT25 (RPS 2013a).

Fourteen priority flora species have been recorded within the local area (10 kilometre radius). A 2007 Level 1 flora survey identified a discrete population of over 100 plants of a Priority 3 species in vegetation adjacent to the proposed clearing (Bennett Environmental Consulting 2007). A Level 2 flora and vegetation survey identified an additional four plants of this species outside of the previously observed area but not within the application area (Ekologica Pty Ltd 2012). A site inspection conducted by the Parks and Wildlife identified five plants of this species within the application area (Parks and Wildlife 2013a). Given the application area contains only five individuals of this species and is within close proximity to a much larger population, the proposed clearing is not likely to significantly impact the conservation status of this species.

The application area occurs in an area of vegetation identified under the Greater Bunbury Regional Scheme as the McLarty/Kemerton/Twin Rivers/Preston River/Gwindinnup Ecological Linkage (North-South) and the Leschenault/Kemerton Ecological Linkage (East-West) (EPA 2003). These same linkages are identified in the South West Regional Ecological Linkages Project (SWREL) (Molloy et al. 2009). Under the SWREL Project the application area has a proximity value of 1b to the axis line, meaning the vegetation has an edge touching, or is less than 100 metres from, a natural area with a proximity value of 1a (with 1a having an edge touching, or is less than 100 metres from a linkage axis line) (Molloy et al. 2009).

These linkages provide an important corridor for the dispersal of native fauna as well as consisting of significant breeding and foraging habitat for fauna and allowing maintenance of ecological processes and genetic transfer of flora and fauna and is therefore an important part of retaining the diversity within the proposed clearing area. The proposed clearing will reduce the width of the ecological linkage and may degrade its quality, leaving it susceptible to edge effects such as weed and feral animal invasion.

The application area provides habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*; rare or likely to become extinct, *Wildlife Conservation Act 1950* (WC Act); endangered, *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)), forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*; rare or likely to become extinct, WC Act; vulnerable, EPBC Act), Baudin's cockatoo (*Calyptorhynchus baudinii*; rare or likely to become extinct, WC Act; vulnerable, EPBC Act) and western ringtail possum (*Pseudocheirus occidentalis*; rare or likely to become extinct, WC Act; vulnerable, EPBC Act).

The disturbance caused by the proposed clearing will increase the risk of weeds and dieback being introduced into the adjacent vegetation. Weed and dieback management practices will assist in mitigating this risk.

The majority of the application area is in very good (Keighery 1994) condition, contains priority flora and fauna habitat, may be representative of a priority ecological community and contributes towards an ecological linkage. Therefore, the proposed clearing is at variance to this principle.

To counterbalance the significant residual impacts the proposed clearing will have on biodiversity the applicant has proposed an offset which consists of placing a conservation covenant over 35 hectares of native vegetation adjacent to the northern boundary of the application area.

Methodology

References:

Bennett Environmental Consulting (2007)
Ekologica Pty Ltd (2012)
EPA (2003)
Keighery (1994)
Molloy et al. (2009)
Parks and Wildlife (2013a)
Parks and Wildlife (2013b)
RPS (2013a)

GIS Databases:

SAC Bio datasets (accessed May 2016)
SWERL Linkages

(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 **Proposed clearing is at variance to this Principle**

Eight terrestrial fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* have been recorded within the local area (10 kilometre radius) (Parks and Wildlife 2007-). The application area is likely to provide significant habitat for Carnaby's cockatoo, forest red-tailed black cockatoo, Baudin's cockatoo and western ringtail possum.

Black cockatoos forage on the seeds, nuts and flowers of a large variety of plants including proteaceous and eucalyptus species as well as *Corymbia calophylla* (Commonwealth of Australia 2012). The application area is *Agonis flexuosa*, *Banksia attenuata*, *Eucalyptus marginata*, *Eucalyptus gomphocephala* closed forest (Parks and Wildlife 2013a). A site inspection of the application area and previous surveys over the Lot 122 have observed black cockatoos within the application area (Parks and Wildlife 2013a, DEC 2008, Strategen 2007).

The dominance of *Banksia attenuata* means the application area is likely to consist of high quality black cockatoo foraging habitat. Clearing of feeding habitat on the Swan Coastal Plain poses a significant threat to the long term survival of Carnaby's cockatoos (Shah 2006). Studies show that Carnaby's cockatoo uses the entire landscape of the Swan Coastal Plain, with a significant preference for large remnants of native vegetation and pine plantations (Shah 2006). The application area is part of a large remnant of vegetation which is likely to provide significant foraging habitat for black cockatoo species (Parks and Wildlife 2013d).

The three black cockatoo species nest in the hollows of large eucalyptus trees that have a minimum diameter, measured at 1.5 metres from the base of the tree, of 500 millimetres (Commonwealth of Australia 2012). A survey conducted over the application area and another 15 hectares of adjacent vegetation, recorded 187 habitat trees (Ekologica Pty Ltd 2012). Of these trees, 44 occur within the application area (40 *E. marginata* and four *E. gomphocephala*). Four of these trees have one hollow greater than 100 millimetre diameter at the entrance and two trees have two hollows greater than 100 millimetre diameter at the entrance, all of these six trees are *E. marginata*. The application area provides potential nesting habitat for black cockatoos (Parks and Wildlife 2013d).

The three cockatoo species roost at night in tall Eucalyptus and *Corymbia* trees (Commonwealth of Australia 2012). The roost sites are normally nearby to a water source and within an area of quality foraging habitat

(Commonwealth of Australia 2012). The application area is within close proximity to two mapped lakes, which are 100 and 400 metres from the application area. There are numerous other watercourses and wetlands within the local area (10 kilometre radius). Given this, the application area may consist of roosting habitat for black cockatoos.

The western ringtail possum generally inhabits coastal or near coastal habitats occurring predominately in peppermint forest and woodland, and tuart (*Eucalyptus gomphocephala*) forest usually with a peppermint understorey (Commonwealth of Australia 2009). The highest density populations of western ringtail possums occur in areas with high canopy continuity (Commonwealth of Australia 2009). A flora and vegetation survey mapped the variations in the mid-storey density of the application area. The density varied from low to high, with the majority being medium-low (Ekologica Pty Ltd 2012). During this survey, no evidence of western ringtail possums was observed. Previous studies over the application area and adjacent vegetation has observed four unused dreys in vegetation adjacent to the application area (Strategen 2009). A Parks and Wildlife site inspection observed western ringtail possum scats in three locations within the application area and observed evidence of grazing on *Agonis flexuosa* (peppermint trees) (Parks and Wildlife 2013a). The scats were identified in areas of vegetation mapped as low and medium-low mid-storey density. The application area, even areas identified as having low value for western ringtail possums, is likely to provide habitat for this species.

The application area may also provide habitat for the rainbow bee-eater (*Merops ornatus*; protected under international agreement), carpet python (*Morelia spilota* subsp. *imbricata*; specially protected), and quenda (*Isodon obesulus* subsp. *fusciventer*; Priority 5) as well as a range of non-conservation significant species. Evidence of brushtail possums (*Trichosurus vulpecular*) was observed throughout the application area (Parks and Wildlife 2013a).

The application area is located approximately 130 metres from a conservation category geomorphic wetland and forms part of an intact dryland buffer for the wetland. Clearing of the buffer may disrupt fauna movement between the wetland and other vegetation as well as removing vegetation used by wetland fauna at certain times of the year, such as for breeding and aestivation (Parks and Wildlife 2013c). During a site inspection in 2008, the remains of a long-necked tortoise (*Chelodina ohlanga*) was found in habitat adjacent to the wetland, establishing that vegetation outside of the wetland is providing important functions in association with the wetland (DEC 2008).

The application area contains significant habitat for several conservation significant fauna. Therefore, the proposed clearing is at variance to this principle. Checking the vegetation for fauna species prior to clearing will assist in mitigating the potential impact to these species.

To counterbalance the significant residual impacts the proposed clearing will have on Carnaby's cockatoo, Baudin's cockatoo, forest red-tailed black cockatoo and western ring-tailed possum the applicant has proposed an offset which consists of placing a conservation covenant over 35 hectares of native vegetation adjacent to the northern boundary of the application area.

Methodology

References:

Commonwealth of Australia (2009)
Commonwealth of Australia (2012)
DEC (2008)
Ekologica Pty Ltd (2012)
Parks and Wildlife (2007 -)
Parks and Wildlife (2013a)
Parks and Wildlife (2013d)
Shah (2006)
Strategen (2007)
Strategen (2009)

GIS Databases:

Carnaby's cockatoo roosting sites
SWERL Linkages

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

Comments

Proposed clearing is not likely to be at variance to this Principle

Six rare flora species have been mapped within the local area (10 kilometre radius).

A Level 2 flora and vegetation survey did not identify any rare flora species within the application area (Ekologica Pty Ltd 2012). This survey was conducted during September and October, which is the flowering time of the rare flora species identified within the local area (10 kilometre radius). A previous Level 1 flora and vegetation survey conducted in September did not identify any rare flora species within the application area (Bennett Environmental Consulting 2007).

Whilst the flora surveys were conducted in Spring months during flowering time, one rare flora species is best surveyed for between July to August, as this is when its diagnostic leaves are visible (Parks and Wildlife 2013e). Collections of the above-mentioned species in late September and mid October refer to the prominent green leaves and consequently this demonstrates that the diagnostic leaves of this species can still be evident

in the later months (RPS 2013a). In addition, the proponent has amended the application to remove the unsurveyed, eastern portion of the original application area. This area was the most likely to contain this rare orchid species as it was closer to the wetlands.

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

Methodology References:
Bennett Environmental Consulting (2007)
Ekologica Pty Ltd (2012)
Parks and Wildlife (2013e)
RPS (2013a)

GIS Databases:
Pre-European vegetation
SAC Bio datasets (Accessed May 2016)
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 Proposed clearing is not at variance to this Principle

Two threatened ecological communities (TEC) have been mapped within the local area (10 kilometre radius); Shrublands and Woodlands on Muchea Limestone (Endangered) and Dense Shrublands on clay flats (Vulnerable). Both of these TECs are mapped on different vegetation and soil types to the application area.

The vegetation and soil type of the application area are not representative of either of these TECs. Therefore, the proposed clearing is not at variance to this principle.

Methodology GIS Databases:
-Pre-European vegetation
-SAC Bio datasets (Accessed May 2016)
-Soils, Statewide

(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 Proposed clearing may be at variance to this Principle

Aerial imagery indicates the local area (10 kilometre radius) is approximately 45 percent vegetated.

The IBRA Bioregion (Swan Coastal Plain) and the local government agency (Shire of Harvey) retain approximately 39 per cent and 52 per cent of their respective pre-European extents (Government of Western Australia 2014).

The application area is mapped as Beard vegetation association 998, which retains approximately 18,865 hectares (37 per cent) of its pre-European extent within the Swan Coastal Plain IBRA Bioregion (Government of Western Australia 2014).

The application area is also mapped as Heddle vegetation Yoongarillup complex, which retains approximately 9,766 hectares (39 per cent) of its pre-European extent within the Swan Coastal Plain IBRA Bioregion (Parks and Wildlife 2015).

A site inspection conducted by Parks and Wildlife officers identified the application area as representative of Karrakatta-Central and South Heddle vegetation complex, rather than the mapped Yoongarillup Heddle vegetation complex, given its location on a sand dune (Parks and Wildlife 2013a). This complex retains approximately 11,374 hectares (23 per cent) of its pre-European extent (Parks and Wildlife 2015). This vegetation complex retains less than the national objectives and targets for biodiversity conservation in Australia which aim to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). The applicant has advised that the application area should not be considered representative of the Karrakatta Central and South Heddle complex given the lack of *Jacksonia* or *Banksia menziesii* present and that this complex is a Perth region complex (RPS 2013a).

The application area occurs in an area of vegetation identified under the Greater Bunbury Regional Scheme as the McLarty/Kemerton/Twin Rivers/Preston River/Gwindinnup Ecological Linkage (North-South) and the Leschenault/Kemerton Ecological Linkage (East-West) (EPA 2003). These same linkages are identified in the South West Regional Ecological Linkages Project (SWREL) (Molloy et al. 2009). These linkages provide an important corridor for the dispersal of native fauna as well as consisting of significant breeding and foraging habitat for local fauna, maintenance of ecological processes and genetic transfer of flora and fauna and is therefore an important part of retaining the diversity within the application area. The proposed clearing will reduce the width of the ecological linkage and may degrade its quality, leaving it susceptible to edge effects such as weed and feral animal invasion.

The application area has also been identified as a Peel Regionally Significant Natural Area under the Environmental Protection Bulletin No.12 (EPA 2010). A significant natural area is as area with significant flora, vegetation and landform values in the Peel region.

Given the application area contains a high level of biodiversity, priority flora, significant fauna habitat, may be representative of a priority ecological community and contributes to an ecological linkage it is a significant remnant of vegetation.

Therefore, the proposed clearing may be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion* Swan Coastal Plain	1,501,222	580,697	39	37
Local government* Shire of Harvey	170,788	88,380	52	75
Board vegetation association in Bioregion* 998	50,867	18,865	37	42
Heddle vegetation complex** Yoongarillup Complex	24,773	9,766	39	20

Methodology

References:

- Commonwealth of Australia (2001)
- EPA (2003)
- EPA (2010)
- Government of Western Australia (2014)
- Molloy et al. (2009)
- Parks and Wildlife (2015)
- RPS (2013a)

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

Proposed clearing is not likely to be at variance to this Principle

There are numerous watercourses and wetlands within the local area (10 kilometer radius). The closest of these is a conservation category geomorphic wetland (sumpland), which is located approximately 130 metres from the application area.

This wetland is the westernmost sumpland in a system of adjoining sumplands that are part of a larger north-south chain of wetlands that runs along the eastern side of the property (Parks and Wildlife 2013c).

The application area is connected to the conservation category wetland by a continuous vegetated corridor. However, no wetland vegetation occurs within the application area (Parks and Wildlife 2013a).

Along the western edge of the application area, there is a ridgeline approximately 10 metres higher than the wetland (DEC 2008). The vegetated dune is providing an intact dryland buffer to the wetland and may be infiltrating rainfall to the wetland, which is a common process on the Swan Coastal Plain (Parks and Wildlife 2013c).

Clearing of vegetation along and below this ridgeline may result in an increase of sedimentation into the wetland. An increase of sedimentation is linked to an excess of nutrients within wetlands, thereby affecting the water quality of the wetland (DEC 2007).

Given the proposed clearing occurs approximately 130 metres from the wetland and the entire buffer comprises good quality, dense native vegetation, the proposed clearing is not likely to impact the wetland. Therefore, the proposed clearing is not likely to be at variance to this principle.

Methodology References:
DEC (2007)
Parks and Wildlife (2013a)
Parks and Wildlife (2013c)

GIS Databases:
Geomorphic wetlands, 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 Proposed clearing may be at variance to this Principle

The soil within the application area is mapped as Cb39, which Northcote et al. (1960 - 1968) describes as subdued dune-swale terrain: chief soils are leached sands on the low dunes.

The application area has a mean annual rainfall of 900 millimetres. Given the porous nature of the soil, significant water erosion is unlikely to occur.

The main land degradation risk associated with this sandy soil type is wind erosion. Advice provided by the Commissioner of Soil and Land Conservation identified the soil of the application area as having a low to high risk of wind erosion (Commissioner of Soil and Land Conservation 2013). Vegetative buffering, staged clearing and revegetation are likely to reduce the impact of wind erosion. The proponent has advised that staged clearing and revegetation will occur.

Therefore, the proposed clearing may be at variance to this principle.

Methodology References:
Commissioner of Soil and Land Conservation (2013)
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 Proposed clearing may be at variance to this Principle

There are numerous conservation areas within the local area (10 kilometre radius) including Leschenault Peninsula Conservation Park (five kilometres southwest), Myalup State Forest (six kilometres northeast), Yalgorup National Park (six kilometres northwest), Bengier Swamp Nature Reserve (nine kilometres east) and several adjoining Parks and Wildlife managed freehold properties (closest is 250 metres southeast).

The application area occurs in an area of vegetation identified under the Greater Bunbury Regional Scheme as the McLarty/Kemerton/Twin Rivers/Preston River/Gwindinnup Ecological Linkage (North- South) and the Leschenault/Kemerton Ecological Linkage (East-West) (EPA 2003). These same linkages are identified in the South West Regional Ecological Linkages Project (SWREL) (Molloy et al. 2009). Under the SWREL Project the application area has a proximity value of 1b to the axis line, meaning the vegetation has an edge touching, or is less than 100 metres from, a natural area with a proximity value of 1a (with 1a having an edge touching, or is less than 100 metres from a linkage axis line) (Molloy et al. 2009).

These linkages provide an important corridor for the dispersal of native fauna as well as consisting of significant breeding and foraging habitat for local fauna, maintenance of ecological processes and genetic transfer of flora and fauna and is therefore an important part of retaining the diversity within the application area. The proposed clearing will further degrade the quality of the linkage, leaving it susceptible to edge effects such as weed and feral animal invasion.

The application area has also been identified as a Peel Regionally Significant Natural Area under the Environmental Protection Bulletin No.12 (EPA 2010). A significant natural area is an area with significant flora, vegetation and landform values in the Peel region.

The area proposed to be cleared lies within the north western section of the Kemerton Industrial Park (KIP) Buffer Area. The buffer is to ensure the impacts of the industry within the KIP core do not adversely impact the public beyond the buffer (Edgeloe et al. 2009). The buffer area is not intended to accommodate industry (Edgeloe et al. 2009).

The KIP is comprised of regionally significant vegetation, wetlands and fauna, with most of these valuable areas located within the buffer area (Edgeloe et al. 2009). The strategy plan identifies the application area as a significant area of remnant vegetation, for the use of vegetation management. In these areas, conservation of remnant vegetation is a high priority (Edgeloe et al. 2009).

The KIP Strategy Plan supports further quarrying within the buffer areas, but acknowledges it is limited by environmental values and topography, which is essential in maintaining landscape values and buffering the impacts of industry in the Industry Core (Edgeloe et al. 2009). The strategy plan recommends that sand quarrying within the KIP occur on the eastern side of the dunal ridges running through the area (Edgeloe et al. 2009). The application area falls to the west of the ridge.

This area has been identified in the Greater Bunbury Region Scheme as Special Control Area No. 2 (SCA No.2). The EPA (2003) has mapped selected areas within SCA No.2 as having high conservation and vegetation significance, and recommends that these areas be zoned as Regional Open Space. The area under application is within these mapped areas of high conservation significance.

Given the above, the application area occurs within a conservation area and may impact on the environmental values of adjacent and nearby conservation areas and therefore the proposed clearing may be at variance to this principle.

Methodology References:
Edgeloe et al. (2009)
EPA (2003)
EPA (2010)
Molloy et al. (2009)

GIS Databases:
-Parks and Wildlife managed lands

(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 Proposed clearing is not likely to be at variance to this Principle

There are numerous watercourses within the local area (10 kilometre radius). The closest of these is a conservation category geomorphic wetland, which is located approximately 130 metres from this wetland.

Along the western edge of the application area, there is a ridgeline approximately 10 metres higher than the wetland (DEC 2008). The vegetated dune is providing an intact dryland buffer to the wetland and may be infiltrating rainfall to the wetland, which is a common process on the Swan Coastal Plain (Parks and Wildlife 2013c).

Clearing of vegetation along and below this ridgeline may result in an increase of sedimentation into the wetland. An increase of sedimentation is linked to an excess of nutrients within wetlands, thereby affecting the water quality of the wetland (DEC 2007).

The wetlands within close proximity to the application area are likely to be hydrologically connected and impacts from the proposed clearing may impact wetlands some distance away (Parks and Wildlife 2013c).

The groundwater salinity within the application area is 500-1000 milligrams per litre of Total Dissolved Solids. This level of groundwater salinity is considered to be marginal.

Given the proposed clearing occurs approximately 130 metres from the wetland and the entire buffer comprises good quality, dense native vegetation, the proposed clearing is not likely to impact the water quality of the nearby significant wetlands. Therefore, the proposed clearing is not likely to be at variance to this principle.

Methodology References:
DEC (2007)
DEC (2008)
Parks and Wildlife (2013c)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments Proposed clearing is not at variance to this Principle

The soil within the majority of the application area is mapped as Cb39, which Northcote et al. (1960 - 1968) describes as subdued dune-swale terrain: chief soils are leached sands on the low dunes.

Given the porous nature of the sandy soils of the application area, the proposed clearing is unlikely to cause or exacerbate flooding. Therefore it is not at variance to this principle.

Methodology References:
Northcote et al. (1960-68)

GIS Databases:
Soils, statewide

Planning instruments and other relevant matters.

Comments The application area has been identified as a Peel Regionally Significant Natural Area under the Environmental Protection Bulletin No.12 (EPA 2010). A significant natural area is an area with significant flora, vegetation and landform values in the Peel region.

The area under application is not recognised as strategic basic raw materials source in the Greater Bunbury Regional Scheme under the Strategic Minerals and Basic Raw Materials Resource Policy. The applicant has advised the application area is a key strategic basic raw materials (BRM) source (RPS 2013a). The 'Basic Raw Materials Demand and Supply Study for the Bunbury-Busselton Region' states 'there is a continued future demand for BRM as the study area continues to be one the fastest growing development areas in Western Australia and as the BRM products are generally consumed by the communities that produce them their continued supply is essential to sustain community development. Despite there being material in the study area, sand and limestone are becoming critical and supplied need to be made available close to demand areas to reduce cost and associated road transport issues' (WAPC 2012). The application area is identified as a Priority Resource Location and as regionally significant BRM.

The applicant has advised that the application area is the sole source of sand supply for MJB Industries pipe and precast manufacturing company, which is one of only four plants in WA and the only pipe plant outside of the metro area supplying concrete pipe and precast products to the southern part of the state (RPS 2013a). South west operations do not have reliable good quality sand supply and this issue has now reached a critical stage (RPS 2013a).

The Environmental Protection Authority (EPA 2005) has advised that "The land in question, being Lots 120, 121 and 122 has a history of several development proposals submitted by previous proponents. In line with past advice, the EPA will not support proposals that will result in the destruction of this high conservation area. Therefore, the EPA will not support further land clearing on Lot 120, 121 and 122."

The application area is located within the South West Coastal Groundwater Area covered by the *Rights in Water and Irrigation Act 1914*. The applicant has advised that dewatering of the site is not required.

The application area is mapped as having moderate to low acid sulfate soil (ASS) risk and low salinity risk (Commissioner of Soil and Land Conservation 2006). The applicant has advised that excavation would cease before the average winter water table is reached, thereby reducing the potential for interception of ASS (RPS 2013b).

Two clearing permit applications (CPS 1400/1 and CPS 2849/1) have previously been refused by the former Department of Environment and Conservation on the same property. The first application (CPS 1400/1) was to clear up to 52.5 hectares of vegetation on Lot 120, 121 and 122 on Diagram 59932. The applicant appealed the refusal of the clearing permit application and the Minister for Environment dismissed the appeal. A second application (CPS 2849/1) was to clear 11 hectares of degraded vegetation on Lot 120 on Diagram 59932. The application was amended during assessment to clear 5.5 hectares of vegetation on Lot 122 on Diagram 59932, over the area currently being assessed. This application was refused.

The applicant has provided the following reasons for applying to clear vegetation in very good condition on Lot 122 on Diagram 59932, as opposed to degraded condition vegetation on Lot 120 on Diagram 59932 (RPS 2013a, RPS 2013b):

- Sand resources are located on Lot 122 on Diagram 59932, therefore sand extraction at any other locality in the area (such as Lot 120) is not economically feasible.
- The sand within the application area is very good quality, coarse quartz sand, low in silt content and is the best quality material available in the Greater Bunbury Region.
- Edge effects such as vegetation degradation will be minimised through locating the proposed sand extraction immediately adjacent to the existing sand extraction pit.
- There is already existing access to the proposed sand extraction site. Therefore, there will be less disturbance to surrounding vegetation, as an access road does not need to be constructed.

In relation to the current application, on 8 August 2013 DER sent a letter to the applicant regarding the environmental impacts of the proposed clearing of 8 hectares and requested that the applicant advise on how these impacts would be mitigated. The applicant was also requested to address planning matters. A consultant acting on the applicant's behalf responded to DER's letter on 3 October 2013. The applicant reduced the application area from 8 hectares to 6.5 hectares, removing a section of the application area that had not been surveyed.

The applicant has proposed to offset the residual environmental impacts identified in this assessment by placing a conservation covenant over 35 hectares of native vegetation adjacent to the proposed clearing. In April 2016 the applicant submitted an application for a memorial under the *Soil and Land Conservation Act 1945*.

On 24 March 2015 the Shire of Harvey issued Planning Consent for sand extraction on Lot 122 Forrest Highway, Binningup (Shire of Harvey 2015).

In December 2015 it was identified that an area of approximately 2 hectares within the application area was cleared prior to the clearing permit being granted.

On 6 April 2016 the Shire of Harvey issued an Extractive Industry Licence for the operations at Lot 122 Forrest Highway, Binningup (Shire of Harvey 2016).

This clearing proposal was referred to the Department of the Environment (DotE) and on 22 April 2014 it was determined to be a controlled action. This decision was made due to the proposed action being likely to impact on 6.5 hectares of native vegetation that contains high quality foraging habitat for the listed endangered Carnaby's cockatoo and both listed vulnerable forest red-tailed black cockatoo and Baudin's cockatoo. On 19 June 2014 DotE approved this proposal. The approval contained an offset condition which requires a Conservation Covenant be placed over 35 hectares of native vegetation. The 35 hectare area indicated on the approval corresponds with the area conditioned under this clearing permit.

No public submissions have been received in relation to this application.

Methodology **References:**
Commissioner of Soil and Land Conservation (2013)
EPA (2005)
EPA (2010)
RPS (2013a)
RPS (2013b)
Shire of Harvey (2015)
Shire of Harvey (2016)
WAPC (2012)

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Plan 5625/1



Legend

-  Clearing Instruments Offets
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



1:8,453

(Approximate when reproduced at A4)
GDA 94 (Lat/Long)
Geocentric Datum of Australia 1994

James Widenbar Date *2/6/2016*
James Widenbar

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



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