



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8567/1
Permit Holder:	Shire of Kent
Duration of Permit:	10 April 2020 to 10 April 2030

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

ADVICE NOTE

The area referred to in condition 11 of this Permit totals 3.508 hectares.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of gravel extraction.

2. Land on which clearing is to be done

East Road reserve (PIN 11639417), Pingrup
Hollands Tank Road reserve (PIN 11633446), Pingrup

3. Area of Clearing

The Permit Holder must not clear more than 1.01 hectares of native vegetation within the area cross hatched yellow on attached Plans 8567/1 a and 8567/1 b.

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. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

6. Type of clearing not authorised

This Permit does not authorise the Permit Holder to clear native vegetation after 30 March 2025.

PART II –MANAGEMENT CONDITIONS

7. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

8. Weed and dieback 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 *dieback* and *weeds*:

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

9. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner from east to west within the East Road reserve and from west to east within the Hollands Tank Road reserve to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

10. Wind erosion management

The Permit Holder must commence extraction activities no later than three (3) months after undertaking the authorised clearing activities to reduce the potential for wind erosion.

11. Revegetation Plan

Within 12 months of the commencement of clearing, the Permit Holder must implement and adhere to the 'Gravel Pit Revegetation Plan for the East Road Gravel Pit, Kent' and 'Gravel Pit Revegetation Plan for Holland Tank Road Gravel Pit Extension, Kent' dated March 2019, including but not limited to the following actions:

- (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) commence *revegetation* and *rehabilitation* the area cross-hatched red on the attached Plans CPS 8567/1c and 8567/1d by;
 - (i) laying the vegetative material and topsoil retained under condition 11(a);
 - (ii) deliberately *planting* native vegetation that will result in similar species composition, structure and density of native vegetation to the surrounding vegetation with East Road reserve and Hollands Tank Road reserve; and
 - (iii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.
- (c) establishing four 10 x 10 metre quadrat monitoring sites within the *rehabilitated* areas;
- (d) fencing the rehabilitated areas;
- (e) water planted vegetation between November and March during first year following planning;
- (f) implement hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the site;
- (g) undertake weed control activities annually;
- (h) achieve the following completion criteria after the five year monitoring period for areas *revegetated* and *rehabilitated* under this Permit:

Criterion	Aspect	Completion targets	Completion criteria	Monitoring
1	Species richness	Species richness of minimum 50 per cent of commercially available species	Species richness and number of plants/m ² in the <i>rehabilitation</i> area is at least 50 per cent of the species that have been planted.	The species and number of plants/m ² in the <i>rehabilitation</i> area will be counted annually during spring for five years.
2	Vegetation structure – <i>Eucalyptus eremophila</i> Mallee Woodland within the East Road reserve	Vegetation at the site to be broadly representative pre-clearing vegetation unit represented	Vegetation structure to consists of one tree species occurring within the vegetation unit	Structure to be assessed annually during spring for five years
	Vegetation structure – <i>Eucalyptus pleurocarpa</i> Mallee Woodland within the East Road reserve	Vegetation at the site to be broadly representative pre-clearing vegetation unit represented	Vegetation structure to consists of one tree species occurring within the vegetation unit	Structure to be assessed annually during spring for five years
	Vegetation structure – Tall open shrubland over shrubland within the Hollands Tank Road reserve	Vegetation at the site to be broadly representative of the pre-clearing vegetation unit represented	Structure of the <i>rehabilitation</i> area to consists of a of five species occurring within the project area	Structure to be assessed annually during spring for five years
3	<1 per cent weeds are present.	Total combined weed cover should not exceed 10 per cent baseline area.	The revegetation site should have no more than 10 per cent cover of either minor and major environmental weeds.	Monitor the <i>rehabilitation</i> site for priority weeds by quadrats annually during spring for five years.
4	Survival rate to be achieved.	If after planting a survival rate of at least 50 per cent is not achieved, infill planting must occur.	The <i>rehabilitation</i> area needs to ensure a survival rate of at least 50 per cent of the density planted is achieved after five years.	The number of surviving plants in the <i>revegetation</i> areas will be monitored annually during spring for five years.
5	Stem Density/composition - <i>Eucalyptus eremophila</i> Mallee Woodland within the East Road reserve	Minimum plant density (p/ha) is 40 per cent of baseline data.	The <i>rehabilitation</i> area contains a minimum of 1250 native plant stems established per hectare.	Stem density to be assessed annually during spring for five years.
	Stem Density/composition - <i>Eucalyptus pleurocarpa</i> Mallee Woodland within the East Road reserve	Minimum plant density (p/ha) is 20 per cent of baseline data.	The <i>rehabilitation</i> area contains a minimum of 1000 native plant stems established per hectare.	Stem density to be assessed annually during spring for five years.

	Stem Density/composition - Tall open shrubland over shrubland within the Hollands Tank Road reserve	Minimum plant density (p/ha) is 20 per cent of baseline data	The <i>rehabilitation</i> area contains a minimum of 1500 native plant stems established per hectare.	Stem density to be assessed annually during spring for five years
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- (i) undertake remedial actions for area *revegetated* and *rehabilitated* where monitoring indicated that revegetation has not met the completion criteria, outlined in 11(h); including
 - (i) revegetate the area by deliberately *planting* native vegetation that will result in the minimum target in 11(h) and ensuring only *local provenance* seeds and propagating material are used; and
 - (ii) undertake further weed control activities; and
- (j) monitoring is to be undertaken by an *environmental specialist*.

PART III - RECORD KEEPING AND REPORTING

12. Records must be kept

The Permit Holder must maintain the following records for activities done in 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;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) Actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 7 of this Permit.
- (c) Actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 8 of this Permit.
- (d) In relation to the revegetation of areas pursuant to condition 11 of this Permit:
 - (i) a description of the rehabilitation activities undertaken;
 - (ii) the size of the area rehabilitated (in hectares); and
 - (iii) the date that the area was rehabilitated;
 - (iv) the species composition, structure and density of revegetation and rehabilitation; and
 - (v) a copy of the environmental specialist report and activities undertaken during monitoring.

13. 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 12 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, 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 30 December 2029, 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:

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

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

direct seeding means a method of re-establishing vegetation through 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;

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 100 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;

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

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; and

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 Biodiversity, Conservation and Attractions Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Samara Rogers
MANAGER
NATIVE VEGETATION REGULATION



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

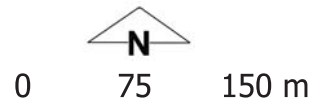
16 March 2020

Plan 8567/1 a



Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Roads
- Image



MGA 94
Geocentric Datum of Australia 1994

Samara Rogers

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




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Plan 8567/1 b



Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Roads
- Image



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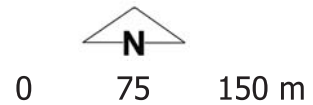
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Plan 8567/1 c



Legend

-  CPS subject to conditions
-  Local Government Authorities
-  Roads
- Image



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Plan 8567/1 d

118°46'4.800"

118°46'12.000"

118°46'19.200"

118°46'26.400"

-33°21'21.600"

-33°21'28.800"

-33°21'36.000"

-33°21'43.200"

-33°21'21.600"

-33°21'28.800"

-33°21'36.000"

-33°21'43.200"

LOT 24 ON DEPOSITED PLAN 35761

8567/1

SHIRE OF KENT

Road

8567/1

Hollands Tank Rd

LOT 2319 ON DEPOSITED PLAN 209011




118°46'4.800"

118°46'12.000"

118°46'19.200"

118°46'26.400"

Legend

-  CPS subject to conditions
-  Local Government Authorities
-  Roads
- Image

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Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8567/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Shire of Kent
Application received date: 25 June 2019

1.3. Property details

Property: East Road reserve (PIN 11639417)
Hollands Tank Road reserve (PIN 11633446)
Local Government Authority: Shire of Kent
Localities: Pingrup

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
2.76 ha (revised to 1.01 ha)		Mechanical Removal	Extractive industry

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 16 March 2020

Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing is at variance with principle (e), may be at variance with principle (a), (b), (e), (g) and (h), and is not likely to be at variance with the remaining principles.

The Delegated Officer considered the following:

- The vegetation within the application area is considered significant as a remnant of native vegetation in an area that has been extensively cleared. The Delegated Officer determined that the significant environmental impact can be adequately mitigated through revegetation and rehabilitation of areas outside of the application area;
- the proposed clearing may temporarily impact on an ecological linkage. Staged clearing and rehabilitation measures will mitigate this risk;
- the proposed clearing may increase the risk of weeds and dieback spreading into the adjacent native vegetation. Weed and dieback management measures will mitigate this risk; and
- the proposed clearing may increase the risk of land degradation in the form of wind erosion. Soil management measures will mitigate this risk.

The Delegated Officer took into account that the applicant removed a portion of the application area that contained remnant of native vegetation in degraded (Keighery, 1994) to excellent (Keighery, 1994) that contains eight priority flora species and committed to rehabilitate approximately 3.508 hectares of land outside of the application area.

In determining to grant a clearing permit subject to conditions, the Delegated Officer determined that the proposed clearing is not likely to lead to any unacceptable impacts on the environment.

2. Site Information

Clearing Description: The original application was for the proposed clearing of a combined area of 2.76 hectares of native vegetation within East Road reserve (PIN 11639417) (1.56 hectares) (Figure 1) and Hollands Tank Road reserve (PIN 11633446) (1.15 hectares) (Figure 3), Pingrup, for the purpose of gravel extraction.

Following correspondence received by the Department of Water and Environmental Regulation (DWER) the applicant reduced the application area to the combined area of 1.01 hectares, specifically, 0.75 hectares in East Road reserve (Figure 2) and 0.26 hectares in Hollands Tank Road reserve (Figure 4).

Vegetation Description

The two gravel pit areas are mapped as Beard vegetation association 380, described as mixed heath with scattered tall shrubs *Acacia* spp., Proteaceae and Myrtaceae. (Sheppard et al., 2001).

A reconnaissance and targeted flora and vegetation survey was undertaken across the two application areas. The vegetation within East Road reserve was described as consisting of two vegetation units:

- *Eucalyptus eremophila* mallee woodland which is described as mallee woodland of *Eucalyptus eremophila* over *Melaleuca pungens* tall shrubs over *Austrostipa elegantissima* scattered grass and clay loam in a drainage line (Ecoedge, 2019a); and
- *Eucalyptus pleurocarpa* mallee woodland which is described as mallee woodland of *Eucalyptus pleurocarpa* over variable shrubland that includes *Adenanthos flavidiflorus*, *Banksia armata*, *B. cirsioides*, *B. meisneri* subsp. *meisneri*, *Bossiaea preissii*, *Lysinema pentapetalum* and *Xanthorrhoea nana* on yellow sand (Ecoedge, 2019a).

The vegetation within Hollands Tank Road reserve was described as consisting of one vegetation unit, a tall open shrubland of *Allocasuarina acutivalvis* over shrubland (Ecoedge, 2019b).

Vegetation Condition

The condition of the vegetation within the application areas ranged from good to excellent condition (Ecoedge, 2019a; 2019b) using the Keighery (1994) scale.

Vegetation condition ratings are defined as follows:

- Excellent: Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species (Keighery, 1994).
- Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).
- Good: Vegetation structure significantly altered by very obvious signs of multiple disturbance; retains basic structure or ability to regenerate (Keighery, 1994).
- Degraded: Basic vegetation structure severely impacted by disturbance; scope for regeneration but not to a state approaching Good condition without intensive management (Keighery, 1994).

All vegetation in the Hollands Tank Reserve and approximately 97 per cent of the application area within East Road reserve is considered to be in excellent (Keighery, 1994) condition (Ecoedge, 2019a; 2019b).

Soil type

The East Road reserve area is mapped within the Newdegate 6 Subsystem, described as areas of significant rock outcrop including monadnocks, and sheet rock. Associated soils include stony soils, yellow/brown deep sandy duplex soils, deep sands and red soils (Schoknecht et al., 2004).

The Hollands Tank Road reserve area is mapped within the Newdegate 4 Subsystem, described as gently undulating to undulating, dissected, plain to gently undulating rises, and distinct lateritic breakaway areas. Soils are dominantly shallow gravels, duplex sandy gravels and yellow/brown sandy duplex soils (Schoknecht et al., 2004).

Comments:

The local area referred to in the assessment of this application is defined as a 20 kilometre radius measured from the perimeter of the application area. The local area retains approximately 13.6 per cent native vegetation cover.



Figure 1 Map of the original application area within the East Road area (cross-hatched in blue)



Figure 2 Map of the revised application area within East Road reserve (cross-hatched in blue)



Figure 3 Map of the original application area within the Hollands Tank Road reserve (cross-hatched blue)



Figure 4 Map of the revised application area within the Hollands Tank Road reserve (cross-hatched blue)



Figure 5a Representative photo of the vegetation within the East Road reserve (Ecoedge, 2019a)



Figure 5b Representative photo of the vegetation within the Hollands Tank Road reserve (Ecoedge, 2019b)

3. Minimisation and mitigation measures

Supporting documents provided by the applicant have noted that alternate sources of gravel have been sought including sources within already cleared agricultural land without success. Other available sources have been noted to be too far from the proposed works to be viable (Ecoedge, 2019c; 2019d). The following mitigation measures have been noted by the applicant;

- The extraction site will be revegetated in accordance with a revegetation plan to minimise impacts to the ecological linkage values of the application area.
- The revegetation will mitigate impacts to drainage caused by the extraction of gravel.
- Weed control will mitigate the risk of recolonization of the area by weeds.
- Priority flora species will be avoided where practicable.
- The proposed clearing and rehabilitation will commence in stages.

Revegetation plans for the application area have been provided (Ecoedge, 2019e; 2019f) with the following common objectives:

- Re-establishment of the pre-cleared vegetation unit through targeted direct seeding and planting of seedlings to establish dominant plant species, where possible.
- Facilitate natural establishment of native flora through post-extraction pit profiling, breakup of exposed clay and use of topsoil, habitat rock/debris and overburden.
- Minimise threats to establishment of natural plants and seedlings by managing weeds and physical disturbance at the site.

Common completion criteria measures between the two sites include; species density, species richness and weed cover. The revegetation plans have noted the difficulty in obtaining commercially available seed and tube stock and have applied adjusted species richness to reflect the difficulty (Ecoedge, 2019e; 2019f).

On 8 January 2020, the DWER wrote to the applicant to advise that the proposed clearing had the potential to impact on an ecological linkage, a high level of biodiversity and priority flora species, namely:

Within the East Road reserve area:

- *Verticordia coronata* (P3); and
- *Acacia obesa* (P3).

Within the Hollands Tank Road area:

- *Daviesia uncinata* (P3);
- *Banksia pteridifolia* subsp. *inretita* (P2);
- *Drosera grieviei* (P1); and
- *Synaphea flexuosa* (P2).

The applicant subsequently reduced the application area from 2.76 hectares to 1.01 hectares, thereby minimising the environmental impacts to the above listed species through:

- the avoidance of clearing of *Verticordia coronata* and *Acacia obesa* and retaining a 30-meter safety buffer for these species within East Road Reserve; and
- the avoidance of clearing of *Drosera grieviei*, *Synaphea flexuosa* and *Banksia pteridifolia* subsp. *inretita*, and retaining a 30-meter safety buffer for these flora species, and retaining three of five *Daviesia uncinata* within the Hollands Tank Road reserve.

In addition, to mitigate the impact on the ecological linkage the applicant has committed to rehabilitate approximately 0.48 hectares of previously cleared area within the East Road reserve (Figure 6a) and approximately 3.028 hectares within the Hollands Tank Road reserve (Figure 6b) in accordance with the revegetation plans described above.



Figure 6a Map of the area proposed to be rehabilitated within the East Road reserve (cross-hatched red)

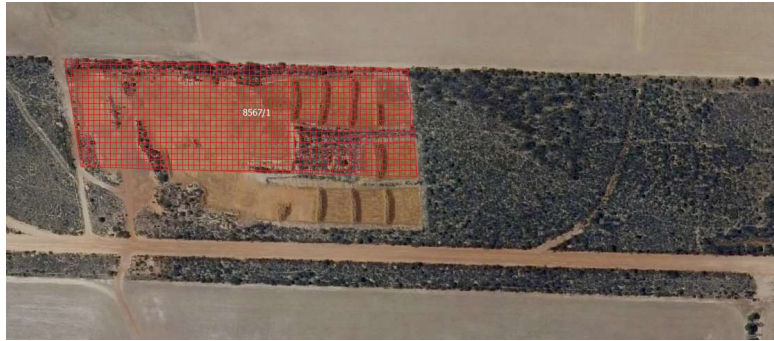


Figure 6b Map of the area proposed to be rehabilitated within the Hollands Tank Road reserve (cross-hatched red)

The following assessment is the preliminary assessment of the original combined area of 2.76 hectares. Section 5 outlines the amendments made by the applicant and the consideration of the variances made in response to the amendments.

4. Assessment of application against clearing principles, planning instruments and other relevant matters

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

Proposed clearing is at variance with this Principle

As noted in Section 2 above, the vegetation within the application areas contains a mixture of types including; *Eucalyptus eremophila* mallee woodland, *Eucalyptus pleurocarpa* mallee woodland and a shrubland of *Allocasuarina acutivalvis* over shrubland (Ecoedge, 2019a; 2019b). The vegetation within the application area is considered to be in degraded to excellent (Keighery, 1994) condition (Ecoedge, 2019a and b) with more than 90 per cent of the application area reported to be in excellent (Keighery, 1994) condition.

As discussed in Principle (b), numerous conservation significant fauna species have been recorded within the local area (Department of Biodiversity Conservation and Attractions (DBCA), 2007-). A fauna habitat survey completed on behalf of the applicant found 10 fauna species within the East Road reserve area and seven fauna species within the Hollands Tank Road reserve area, none of which are of conservation significance. The surveys also noted no secondary evidence of conservation significant species or any evidence of foraging by threatened black cockatoo species (Harewood, 2019a; 2019b).

According to available databases, 33 priority flora species have been recorded within the local area of the East Road reserve (Western Australian Herbarium, 1998-). As discussed under Principle (c), five threatened flora species have been recorded within the local area of the East Road reserve area. A targeted flora and vegetation survey identified 57 flora species within the survey area, two of which are priority species with no threatened flora species recorded (Ecoedge, 2019a).

The species *Acacia obesa* (P3) was identified by two individuals within an access area to the existing gravel pit. Available databases show this species is known from only 18 records within Western Australia within a narrow range of which this recording would represent a range extension of the species. In addition to this, the species *Verticordia coronata* (P3) was recorded at two locations within the survey area (Ecoedge, 2019). This species is known from 35 records within Western Australia. The recordings within the survey area represent an extension of the range for this species.

According to available databases, 36 priority flora species have been recorded within the local area of the Hollands Tank Road reserve area (Western Australian Herbarium, 1998-). As discussed under Principle (c), five threatened flora species have been recorded within the local area of the Hollands Tank Road reserve area. A targeted flora and vegetation survey identified 40 flora species within the survey area, four of which are priority species with no threatened flora species recorded (Ecoedge, 2019b).

The species *Daviesia uncinata* (P3) was identified by five individuals within the survey area. Available databases show this species is known from only 33 records within Western Australia with some recordings within the local area being located within secure tenure. In addition to this, the species *Banksia pteridifolia* subsp. *inretita* (P2) was identified by five individuals at one location within the survey area (Ecoedge, 2019). This species is known from only nine records within Western Australia within a narrow range and any new recordings of this species may be significant for the species. The species *Drosera grieveri* (P1) was recorded at one location within the survey area containing five individuals. This species is known from 25 records within WA and the recording within the Hollands Tank Road area may present a range extension for the species. One individual of the species *Synaphea flexuosa* (P2) was recorded within the survey area. This species is known from 20 records within Western Australia with some local recordings in secure tenure.

Given the priority flora species identified within the application area have limited known distributions with a number of recordings representing range extensions, the proposed clearing of the priority flora within the application area is significant. Additional targeted surveys beyond the application area are required to further quantify and provide context for local and regional impacts on these species.

Within the local area, there are several mapped occurrences of the Commonwealth listed 'Eucalypt Woodlands of the Western Australian Wheatbelt' Threatened Ecological Community (TEC). Noting the vegetation types identified within the two application areas, being Eucalypt mallee woodland and *Allocasuarina* shrubland, the vegetation within the application area is not representative of this TEC. As discussed under Principle (d), the application area is not representative of a state listed TEC.

The application area is part of an ecological linkage as both the East Road reserve area and the Hollands Tank Road area are within a 150-200 meter wide strip of native vegetation that connect smaller patches of vegetation within the local area including remnant vegetation within freehold areas and nature reserves.

As the application area forms an ecological linkage, is in mostly excellent (Keighery, 1994) condition and contains priority flora and habitat for fauna, the vegetation within the application area comprises an area of high biodiversity and the proposed clearing is at variance with this Principle.

(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.

Proposed clearing may be at variance with this Principle

According to available databases, the following fauna species have been recorded within the local area of the East Road reserve (DBCA, 2007):

- *Dasyurus geoffroyi* (Chuditch) (vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Biodiversity Conservation Act 2016* (BC Act);
- *Leipoa ocellata* (Malleefowl) (vulnerable under the EPBC Act and the BC Act);
- *Notamacropus eugenii* subsp. *derbianus* (Tammar Wallaby) (listed as Priority 4 by DBCA);
- *Phascogale calura* (Red-tailed Phascogale) (vulnerable under the EPBC Act and conservation dependent under the BC Act);
- *Pseudomys occidentalis* (Western Mouse) (listed as Priority 4 by DBCA);
- *Psophodes nigrogularis* (Western Whipbird) (endangered under the EPBC Act and the BC Act);
- *Psophodes nigrogularis* subsp. *oberon* (Western Whipbird) (listed as Priority 4 by DBCA); and
- *Thinornis rubricollis* (Hooded Plover) (listed as Priority 4 by DBCA).

A fauna survey found no conservation significant fauna or any secondary evidence of conservation significant fauna within the East Road reserve area (Harewood, 2019a). There were limitations with the survey, including that the survey was completed over a two-hour period on one day. The survey recorded 10 fauna species, none of which are conservation significant. The survey noted that while no conservation significant fauna were recorded within the application area, the vegetation within the application area may provide habitat for fauna moving across the landscape.

The following fauna species have been recorded within the local area of the Hollands Tank Road reserve area (DBCA, 2007):

- *Botaurus poeciloptilus* (Australasian Bittern) (endangered under the EPBC Act and the BC Act);
- *Calidris acuminata* (Sharp-tailed Sandpiper) (specially protected migratory species);
- *Calyptorhynchus latirostris* (Carnaby's Cockatoo) (endangered under the EPBC Act and the BC Act);
- *Falco peregrinus* (Peregrine Falcon) (other specially protected fauna under the BC Act);
- *Leipoa ocellata* (Malleefowl) (vulnerable under the EPBC Act and the BC Act);
- *Limosa lapponica* (Bar-tailed Godwit) (vulnerable or critically endangered under EPBC Act and the BC Act depending on the subspecies);
- *Notamacropus eugenii* subsp. *derbianus* (Tammar Wallaby) (listed as Priority 4 by DBCA);
- *Notamacropus irma* (Western Brush Wallaby) (listed as Priority 4 by DBCA);
- *Oxyura australis* (Blue-billed Duck) (listed as Priority 4 by DBCA);
- *Phascogale calura* (Red-tailed Phascogale) (vulnerable under the EPBC Act and conservation dependent under the BC Act);
- *Pseudocheirus occidentalis* (Western Ringtail Possum) (critically endangered under the EPBC Act and the BC Act);
- *Pseudomys occidentalis* (Western Mouse) (listed as Priority 4 by DBCA);
- *Pseudomys shortridgei* (Heath Mouse) (endangered under the EPBC Act and vulnerable under the BC Act);
- *Psophodes nigrogularis* (Western Whipbird) (endangered under the EPBC Act and the BC Act);
- *Thinornis rubricollis* (Hooded Plover) (listed as Priority 4 by DBCA); and
- *Tringa nebularia* (Common Greenshank) (specially protected migratory species).

A survey completed on behalf of the applicant found no conservation significant fauna or any secondary evidence of conservation significant fauna within the Hollands Tank Road area (Harewood, 2019b). There were limitations with the survey, including that the survey was completed over a two-hour period on one day. The survey recorded seven fauna species, none of which are conservation significant. The survey noted that while no conservation significant fauna were recorded within the application area, the vegetation within the application area may provide habitat for fauna moving across the landscape.

According to available databases, there are numerous records of *Leipoa ocellata* (Malleefowl) within the local area in nature reserves and within roadside vegetation. Malleefowl are a ground dwelling species found in semi-arid to arid shrublands and low woodlands, especially those dominated by mallee eucalypts on sandy soils (Benshmesh, 2007). The species is known to utilise strips of native vegetation along roadsides for dispersal (Benshmesh, 2007). Given that Malleefowl are elusive and rare, their presence may easily be missed (Benshmesh, 2007). Although Malleefowl were not observed directly or indirectly within the application area, the vegetation within the application area is likely to be suitable habitat for movement of the species throughout the landscape.

The application area is within the mapped breeding range for Carnaby's black cockatoo (*Calyptorhynchus latirostris*). The surveys also included targeted searches for foraging, roosting and breeding habitat for the species. The following flora species known to provide foraging for Carnaby's cockatoo, were recorded within the application area (Harewood, 2019a and b):

- *Hakea cygna*, *H. prostrata*, and *H. pandanica*;
- Silver Marlock (*Eucalyptus pleurocarpa*);
- *Grevillea teretifolia*; and
- *Banksia blechnifolia*, *B. cirsioides*, *B. meisneri*, *B. nivea*, *B. obovata*, *B. sessilis* and *B. alliacea*.

The species listed above provide varying levels of preference for foraging by Carnaby's cockatoo, however, no evidence of foraging was recorded during the survey (Harewood, 2019a; 2019b).

'Breeding habitat' for Carnaby's cockatoo is defined as trees of species known to support breeding within the range of the species which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, suitable DBH is 500 millimetres (Commonwealth of Australia, 2012). The fauna surveys found no trees within the application area with suitable DBH to support breeding Carnaby's cockatoo as most trees were small, mallee type (Harewood, 2019a; 2019b).

Given the predominately excellent (Keighery, 1994) condition of the vegetation within the application area, and that the application area is part of a larger remnant, it is considered that the application area may contain suitable habitat for fauna. Slow, progressive directional clearing will aid ground dwelling fauna to move into native vegetation adjacent to the application area, ahead of the clearing activity.

The local area has been extensively cleared (refer to Principle (e)). Aerial imagery indicates that the application area is likely to function as an ecological linkage between areas of remnant vegetation in the local area, and may facilitate landscape connectivity and contribute to fauna dispersal between larger isolated bushland fragments in an extensively cleared landscape. Staged clearing and rehabilitation will ensure that the linkage is only temporarily impacted.

Considering the above, the proposed clearing may be at variance with this Principle.

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

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

According to available databases, five threatened flora species have been recorded within the local area of East Road reserve including *Acacia leptalea*, *Adenanthos pungens* subsp. *pungens*, *Caladenia melanema*, *Duma horrida* subsp. *abdita* and *Roycea pycnophylloides*.

According to available databases, five threatened flora species have been recorded within the local area of Hollands Tank including; *Acacia auratiflora*, *Acacia lanuginophylla*, *Calectasia pignattiana*, *Duma horrida* subsp. *abdita* and *Grevillea involucrata*.

Flora surveys of the two application areas noted that no threatened flora species were recorded within the application area (Ecoedge, 2019a; 2019b). It is considered that the flora survey provided by the applicant was sufficiently timed to enable identification of threatened flora species known to occur within the local area.

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

(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.

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

According to available datasets, the state listed TEC 'Unwooded freshwater wetlands of the southern Wheatbelt of Western Australia, dominated by *Duma horrida* subsp. *abdita* and *Tecticornia verrucosa* across the lake floor' is located approximately 4.5 kilometres west of the Hollands Tank Road reserve area. The vegetation within the application area is not representative of this state listed TEC.

Given the above, the application area is not likely to comprise the whole or a part of, or be necessary for the maintenance of a state listed TEC and the proposed clearing is not likely to be at variance with this Principle.

(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

Proposed clearing is at variance with this Principle

The National Objectives and Targets for Biodiversity Conservation 2001-2005 in Australia has a target 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 application area is located within the Mallee Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion which retains approximately 56.53 per cent of its pre-European vegetation extent (Government of Western Australia, 2019). The mapped Beard vegetation association 380 retains approximately 41.78 per cent of its pre-European vegetation extent within the Mallee Bioregion (Table 1). The local area retains approximately 13.6 per cent vegetation cover.

Noting the current vegetation extent within the local area is below the 30 per cent threshold and that the application area contains a high level of biodiversity, contains priority flora and contributes to an ecological linkage, the application area is considered to be a significant remnant within an extensively cleared area.

Given the above, the proposed clearing is at variance with this Principle.

Table 1: Remnant Native Vegetation Extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed lands (ha)	Current extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA bioregion:					
Mallee	7,395,894.36	4,180,937.68	56.53	1,289,384.08	17.43
Beard vegetation association					
380	580,374.88	351,916.10	60.64	140,820.47	24.26
Beard vegetation association in IBRA bioregion:					
380 (in Mallee)	34,362.43	14,357.62	41.78	10,541.54	30.68

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is not at variance with this Principle

According to available datasets, no watercourses or wetlands are located within close proximity to the application area. The closest waterbodies to the application area are significant streams. A significant stream is mapped approximately 485 meters to the south of the East Road area and a minor non-perennial watercourse is mapped approximately 1.2 kilometers east of the Hollands Tank road area. There are no other wetlands or major watercourses mapped within the application area.

Noting the descriptions of the vegetation within the application area (Ecoedge, 2019a; 2019b) and the distance from any known watercourses or wetlands, it is considered that the vegetation within the application area is not growing in association with a watercourse or wetland.

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

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

Proposed clearing may be at variance with this Principle

The application area has been mapped by DPIRD within the Newdegate 4 subsystem and the Newdegate 6 subsystem, described in more detail within Section 2 (Schoknecht et al., 2004). Table 2 outlines the land degradation risks for the two mapped soil systems.

Table 2: Land degradation risk for mapped soil types

Risk categories	Newdegate 4 Subsystem (250Nw_4)	Newdegate 6 Subsystem (250Nw_6)
Wind erosion	30-50% of the map unit has a high to extreme hazard	10-30% of the map unit has a high to extreme hazard
Water erosion	<3% of the map unit has a very high to extreme hazard	<3% of the map unit has a very high to extreme hazard
Salinity	<3% of the map unit has a moderate or high hazard or is presently saline	<3% of the map unit has a moderate or high hazard or is presently saline
Subsurface Acidification	>70% of the map unit has a high susceptibility	30-50% of the map unit has a high susceptibility
Flood risk	<3% of the map unit has a moderate to high hazard	<3% of the map unit has a moderate to high hazard
Water logging	<3% of the map unit has a moderate to very high to risk	<3% of the map unit has a moderate to very high to risk
Phosphorus export risk	<3% of the map unit has a high to extreme hazard	<3% of the map unit has a high to extreme hazard

As indicated within Table 2, the soil types within the application area present low risk of land degradation with the exception of subsurface acidification which presents a high risk within the Newdegate 4 subsystem. However, given the size of the proposed clearing within an extensively cleared landscape, the proposed clearing is not likely to impact on subsurface acidification. The Newdegate 4 subsystem is mapped as having moderate wind erosion risk. The risk of wind erosion can be mitigated if the soils are not left exposed for long periods of time. Ensuring the excavation works commence within two months of clearing will mitigate this risk.

Given the potential for wind erosion, the proposed clearing may be at variance with this Principle.

(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.

Proposed clearing may be at variance with this Principle

According to available databases, there are no conservation areas within close proximity to the East Road area, the closest reserves are vested with purposes not related to conservation. However, the area is a part of an ecological linkage within a highly cleared landscape.

According to available databases, there are various conservation areas within close proximity to the Hollands Tank Road area including the Lake Janet Nature Reserve and the Hollands Rocks Nature Reserve located approximately 450 meters and 1.8 kilometers respectively.

Both the East Road area and the Hollands Tanks Road area are within a mostly intact patch of remnant vegetation and contribute to an ecological link across the landscape. The proposed clearing poses risk of weed introduction to areas of remnant vegetation adjacent to the proposed clearing area. Weed and dieback management measures will mitigate this risk.

Considering the above, the proposed clearing may be at variance with this Principle.

(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.

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

As discussed under Principle (f), the closest watercourses to the application areas are significant streams located more than 450 meters from the application areas. Given the distance to the nearest surface water, the proposed clearing is not likely to cause deterioration of the surface water.

Groundwater salinity over the application area has been mapped as being 14000 to 35000 milligrams per litre total dissolved solids within the East Road reserve area and 7000 to 14000 milligrams per litre total dissolved solids within the Hollands Tank Road reserve area. Noting the extent of clearing within a vegetated road reserve, the proposed clearing is not likely to cause deterioration of groundwater.

The proposed clearing is not likely to be at variance with this Principle.

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

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

The mean rainfall of the local area is approximately 400 millimetres per annum. As discussed under Principle (g), the soils within the application area are not considered a high risk for flooding given their moderate permeability. Noting the soil type, vegetation condition, extent of the proposed clearing and relatively low annual rainfall of the local area, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

The proposed clearing is not likely to be at variance with this Principle.

Planning instruments and other relevant matters.

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the Department of Water and Environmental Regulation website on 16 August 2019 with a 21 day submission period. No public submissions have been received in relation to this application.

5. Reconsideration of clearing principles following applicant's submissions

On 8 January 2020, the DWER wrote to the applicant, outlining the impacts identified during the assessment of the application, and inviting the applicant to provide additional advice addressing these matters. The applicant was requested to modify the application area to avoid and minimise the impacts identified by reducing the area to be cleared which avoided clearing of areas containing priority flora, a high level of biodiversity and contributing to an ecological linkage.

On 7 February 2020, the applicant amended the application area by reducing the clearing area from 2.76 hectares to 1.01 hectares. The reduced area avoids clearing of *Verticordia coronata* (P3), *Acacia obesa* (P3), *Banksia pteridifolia* subsp. *inretita* (P2), *Synaphea flexuosa* (P2), *Drosera grievei* (P1) and reduce the clearing of *Daviesia uncinata* (P3) from five individuals to three.

A further review of DBCA databases was undertaken to assess the impact of clearing of two individuals of *Daviesia uncinata* on its conservation status. The review indicates that the species is known from 42 recorded populations (excluding 5 populations identified during the Flora survey (Ecoedge, 2019a, 2019b)) across approximately 240 kilometres in various local government authorities as described on Figure 7 below. Noting the number of records, the distribution of this species and separation distances between the application area and known DBCA records, it is considered that the proposed clearing of 2 individuals is not likely to impact the conservation status of this species.

In regard to an ecological linkage, the applicant has committed to revegetate a combined area of approximately 3.508 hectares in order to retain east-west linkage within both, East Road reserve and Hollands Tank Road reserve. Due to a temporary impact on an ecological linkage, there is no change to the variance of this principle and the proposed clearing may be at variance with principle (b). A requirement to rehabilitate the areas cross-hatched red on Figures 6a-b and conduct gravel extraction within three months of clearing will be added on permit to minimise the impact on the fauna corridor.

Noting the revised proposed clearing will have a minor impact on one P3 species and an ecological linkage will be only temporary, the vegetation within the application area may contain a high level of biodiversity, and therefore may be at variance with clearing principle (a).

In regard to principle (e), the DWER acknowledge that the application area is considered significant as a remnant of native vegetation in an area that has been extensively cleared. Noting the proposed revegetation and rehabilitation of natural areas outside of the application area, and that the applicant have pursued avoidance and mitigation options as described in Section 3 above, it was considered that the revegetation of areas cross-hatched red on Figure 6a and 6b will adequately address environmental impacts on the remnant vegetation.

There is no change to the remaining clearing principles following the reduction in the application area.

6. References

- Benshemesh, J. (2007) National Recovery Plan for Malleefowl 2006-2010. Department of Environment and Heritage, Adelaide, South Australia.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species, Canberra
- Department of Parks and Wildlife (Parks and Wildlife) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed November 2019.
- Ecoedge (2019a), Reconnaissance and Targeted Flora and Vegetation Survey at the East Road Gravel Pit, Kent, Prepared for the Shire of Kent Western Australia. DWER reference: DWERDT171634
- Ecoedge (2019b), Reconnaissance and Targeted Flora and Vegetation Survey at the Holland Tank Road Gravel Pit, Kent, Prepared for the Shire of Kent Western Australia. DWER reference: DWERDT171614
- Ecoedge (2019c) Supporting documentation for a Clearing Permit Application for the East Road Gravel Pit, Kent. DWER reference: A1814324
- Ecoedge (2019d) Supporting documentation for a Clearing Permit Application for the Holland Tank Road Gravel Pit. DWER reference: DWERDT171630
- Ecoedge (2019e) Gravel Pit Revegetation Plan for East Road Gravel Pit Extension, Kent. DWER reference: DWERDT171638
- Ecoedge (2019f) Gravel Pit Revegetation Plan for Holland Tank Road Gravel Pit Extension, Kent. DWER reference: DWERDT171622
- Government of Western Australia (2019). 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Parks and Wildlife, Perth.
- Harewood (2019a) Proposed Borrow Pit Fauna Habitat Assessment East Road, Shire of Kent. DWER reference :DWERDT171634
- Harewood (2019b) Proposed Borrow Pit Fauna Habitat Assessment Holland Tank Road, Shire of Kent. . DWER reference: DWERDT171618
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Shire of Kent (2019) Application for a clearing permit (CPS 8567/1). DWER reference: A
- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- Western Australian Herbarium (1998-) FloraBase-the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (accessed November 2019).

GIS Databases:

- Groundwater salinity
- SAC Bio Datasets (Accessed November 2019)
- Hydrography, linear
- Remnant vegetation
- Department of Agriculture and Food Western Australia Subsystems
- DBCA Tenure
- Aboriginal Sites of Significance
- Soils, Statewide