GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8486/1
Permit Holder:	Bunbury Harvey Regional Council
Duration of Permit:	21 May 2020 to 21 May 2025

In regards to condition 8, it is noted that the Permit Holder has allocated 16.8 hectares of its banked offset site at Lot 4703 on Plan 207023, Cookernup, to this project. The nominated 16.8 hectare area contains similar environmental values to the application area, being; habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Forest red-tailed black cockatoo (*Calyptorhynchus banksia naso*), and vegetation commensurate with the Banksia Woodlands of the Swan Coastal Plain threatened ecological community.

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

PART I – CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of landfill and associated infrastructure.

2. **Land on which clearing is to be done**
   Lot 45 on Plan 17161, Wellesley.

3. **Area of Clearing**
   The Permit Holder must not clear more than 8.41 hectares of native vegetation within the area cross-hatched yellow on attached Plan 8486/1a.

4. **Clearing Not Authorised**
   The Permit does not authorise the Permit Holder to clear within the area cross-hatched red on attached Plan 8486/1a.

5. **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.

PART II – MANAGEMENT CONDITIONS

6. **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.

7. 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 known *dieback* or *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.

8. Wind erosion management

The Permit Holder must begin construction works within 2 months of clearing activity to mitigate against *land degradation* through wind erosion.

9. Offset - Land acquisition

(a) The Permit Holder must fund the purchase of the area cross-hatched red on Plan 8486/1b to be ceded to the Department of Biodiversity, Conservation and Attractions for conservation.

(b) The Permit Holder shall provide documentary evidence to the *CEO* on or before 31 December 2020, that the area cross-hatched red on Plan 8486/1b has been ceded to the Department of Biodiversity, Conservation and Attractions.

10. Fauna management - directional clearing

Clearing shall be conducted in a slow, progressive manner from south to north to allow fauna to move out of the clearing area and into adjacent remnant vegetation.

11. Fauna management - pre-clearing inspections

(a) In relation to the area cross-hatched yellow on attached Plan 8486/1a, the Permit Holder must engage a *fauna specialist* to inspect that area, including all trees and tree hollows present, within 24 hours prior to, and for the duration of clearing, for the presence of (*Pseudocheirus occidentalis*) western ringtail possum(s).

(b) Clearing must cease in any area where fauna referred to in condition 11(a) above are identified until either:

(i) the western ringtail possum(s) individual has moved on from that area to adjoining *suitable habitat*; or

(ii) the western ringtail possum(s) individual has been removed by a *western ringtail possum specialist*.

(c) Any western ringtail possum (*Pseudocheirus occidentalis*) individuals removed in accordance with condition 11(b)(ii) of this Permit must be relocated by a *western ringtail possum specialist* to *suitable habitat*.

(d) Where fauna is identified under condition 11(a) of this Permit, the Permit Holder must provide the following records to the *CEO* as soon as practicable:

(i) the number of individuals identified;

(ii) the date each individual was identified;

(iii) the location where each individual was 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;

(iv) the number of individuals removed and relocated;

(v) the relevant qualifications of the *western ringtail possum specialist* undertaking removal and relocation;

(vi) the date each individual was removed;

(vii) the method of removal;

(viii) the date each individual was relocated;

(ix) the location where each individual was relocated to, recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and

(x) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

PART III – RECORD KEEPING AND REPORTING

12. Record keeping

The Permit Holder must maintain the following records in relation to the clearing of native vegetation authorised under this Permit:

(a) 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;
(b) the date(s) that the area was cleared;
(c) the size of the area cleared (in hectares);
(d) the direction that clearing was undertaken;
(e) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 5 of this Permit;
(f) actions taken to minimise the risk of the introduction and spread of *dieback* and *weeds* in accordance with condition 6 of this Permit;
(g) actions taken to minimise the risk of *land degradation* in accordance with condition 7 of this Permit; and
(h) details required in accordance with fauna management condition 11 of this Permit.

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 has been undertaken, a written report confirming that no clearing under this Permit has been undertaken, must be provided to the *CEO* on or before 30 June of each year.
(c) Prior to 16 February 2025, 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;

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 and authorisation issued under the *Biodiversity Conservation Act 2016*;

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

land degradation includes salinity, erosion, soil acidity and waterlogging;

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;

suitable habitat means habitat known to support western ringtail possums (*Pseudocheirus occidentalis*) within the known current distribution of the species, typically characterised by abundant foliage, presence of suitable nesting structures such as tree hollows, as well as high canopy cover and continuity. Known habitat includes peppermint (*Agonis flexuosa*) dominated woodlands, jarrah (*Eucalyptus marginata*) and

marri (*Corymbia calophylla*) forests, riparian vegetation with a canopy of Bullich (*Eucalyptus megacarpa*) or flooded gum (*Eucalyptus rudis*), karri (*Eucalyptus diversicolor*) forests, sheoak (*Allocasuarina fraseriana*) dominated woodlands, and other stands of myrtaceous trees growing near swamps, watercourses or floodplains;

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 species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
(c) not indigenous to the area concerned.

western ringtail possum specialist means a person who holds a tertiary qualification specialising in environmental science or equivalent, has a minimum of two years work experience in western ringtail possum (*Pseudocheirus occidentalis*) identification, surveys of western ringtail possums and capture and handling of western ringtail possums, and holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016.*

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

21 April 2020

Plan 8486/1a

Legend

CPS layers

- CPS subject to conditions
- CPS areas approved to clear
- Land TenureLGATE - 226
- Localities - Landgate

Image

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Mathew Gannaway
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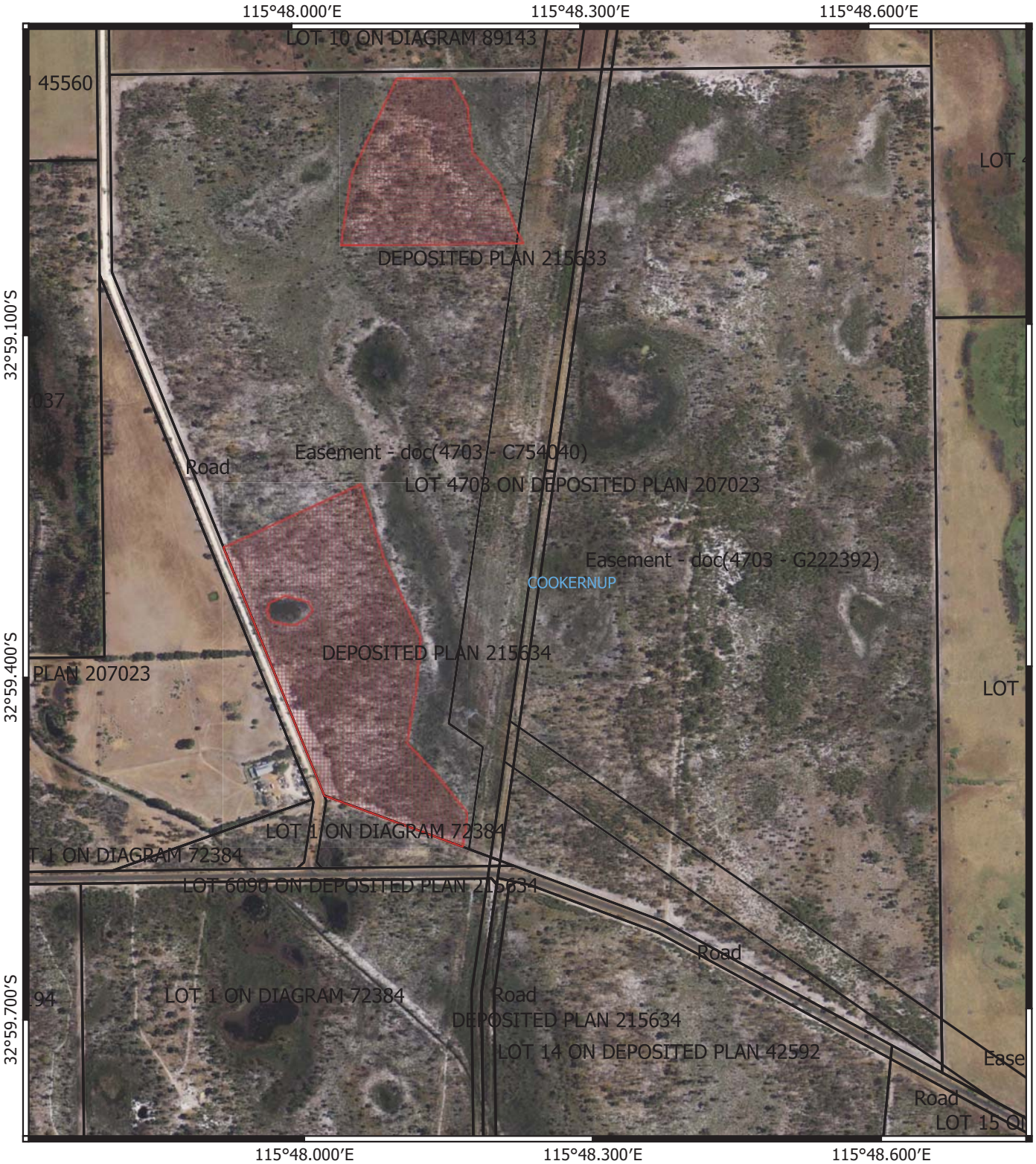
Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8486/1b



Legend

CPS layers

- CPS subject to conditions
- Land TenureLGATE - 226
- Localities - Landgate

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8486/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Bunbury Harvey Regional Council
Application received date: 08 May 2019

1.3. Property details

Property: Lot 45 on Plan 17161, Wellesley
Local Government Authority: Shire of Harvey
Localities: Wellesley

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
11.5 (original)		Mechanical Removal	Landfill and associated infrastructure
8.41 (revised)		Mechanical Removal	Landfill and associated infrastructure

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 21 April 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 Principles (a), (b), and (e), may be at variance with Principles (g) and (h), and is not likely to be at variance with the remaining clearing Principles.

The Delegated Officer noted that the application area contains 7.8 hectares of native vegetation that is representative of the Commonwealth listed *Banksia* Woodlands of the Swan Coastal Plain threatened ecological community (TEC) and provides significant foraging habitat for the three black cockatoo species; Baudin's cockatoo (*Calyptorhynchus baudinii*), Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) and Carnaby's cockatoo (*Calyptorhynchus latirostris*).

To mitigate the significant residual impacts identified above, and in accordance with the WA Environmental Offset Policy and Environmental Offsets Guidelines, a combined offset of 16.8 hectares of foraging habitat for black cockatoos and *Banksia* Woodlands of the Swan Coastal Plain TEC within Lot 4703 on Plan 207023, Cookernup is required.

Although the application area forms part of a significant remnant in an area that has been extensively cleared, an offset is not required due to being in a constrained area as part of the Greater Bunbury Region Scheme.

The Delegated Officer also determined that the application area provides suitable habitat for Western Ringtail Possums (*Pseudocheirus occidentalis*), Quenda (*Isoodon obesulus fusciventer*) and South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*). To minimise the direct impact of clearing on any individuals present, a condition has been placed on the permit requiring the clearing activity to be undertaken in a slow, progressive, and directional (e.g. south to north) manner to allow the fauna to disperse into the adjacent remnant vegetation, and for pre-clearance hollow inspections to be undertaken by a qualified environmental specialist.

The Delegated Officer noted that the sandy soils within the application area are prone to wind erosion. It was determined that the risk to land degradation could be mitigated through beginning construction works within two months of the clearing activity.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent native vegetation. Weed and dieback management measures may minimise this impact.

After consideration of the above, the Delegated Officer decided to grant a clearing permit subject to weed and dieback management, erosion management, fauna management and offset conditions.

2. Site Information

Clearing Description

The application is to clear 8.41 hectares of native vegetation within Lot 45 on Plan 17161, Wellesley, for the purpose of expanding the Stanley Road Waste Management Facility (Figure 1; BHRC, 2019).

Vegetation Description

The application area is mapped as the Bassendean Complex-Central and South vegetation complex. This vegetation ranges from woodland of *Eucalyptus marginata* (Jarrah) - *Allocasuarina fraseriana* (Sheoak) - *Banksia* species to low woodland of *Melaleuca* species, and sedgelands on the moister sites. This area includes the transition of *Eucalyptus marginata* (Jarrah) to *Eucalyptus todtiana* (Pricklybark) in the vicinity of Perth (Heddle et al., 1980).

A site inspection of the application area undertaken by officers from the Department of Water and Environmental Regulation (DWER) identified three vegetation communities within the application area (DWER, 2019):

- Community 1: *Banksia attenuata* and *Eucalyptus marginata* over a mid-storey dominated by *Kunzea glabrescens* over sparse grassy weeds and native ground cover in a degraded condition. This community was observed within the central portion of the application area and had been greatly altered by historical park land clearing.
- Community 2: *Banksia attenuata*, *Banksia grandis* and *Eucalyptus marginata* over a diverse native understorey in a very good condition.
- Community 3: *Banksia* woodland with *Eucalyptus marginata* and *Agonis flexuosa* over native understorey in a very good condition. This community was observed in a small section at the southern end of the western portion of the application area.

The flora and vegetation survey conducted by Strategen-JBS&G during 23 September 2019 recorded one vegetation type over the application area, described as *Eucalyptus marginata* and *Banksia attenuata* low to mid woodland over *Kunzea glabrescens* mid shrubland to mid open shrubland over low open herbland of *Leucopogon propinquus*, *Hibbertia hypericoides* and *Dasypogon bromeliifolius* (Strategen-JBS&G, 2019).

Vegetation Condition

The flora and vegetation survey determined that the application area ranges from degraded to excellent (Keighery, 1994) condition (Strategen-JBS&G, 2019), described as:

- Excellent: Vegetation structure intact; disturbance affecting individual species; 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).

Soil type

Four soil types have been mapped in the application area (Schoknecht et al., 2004):

- Spearwood S1c Phase: Dune ridges with deep bleached grey sands with yellow-brown subsoils, and slopes up to 15 per cent;
- Bassendean B1 Phase: Extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands sometimes with a pale yellow B horizon or a weak iron-organic hardpan at depths generally greater than 2 metres; *Banksia* dominant;
- Bassendean B1a Phase: Extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands with an intensely coloured yellow B horizon occurring within 1 metres of the surface; marri and jarrah dominant; and
- Bassendean B6 Phase: Sandplain and broad extremely low rises with imperfectly drained deep or very deep grey siliceous sands.

Comments

The local area considered in the assessment of this application is defined as a 10 kilometre radius measured from the perimeter of the application area.

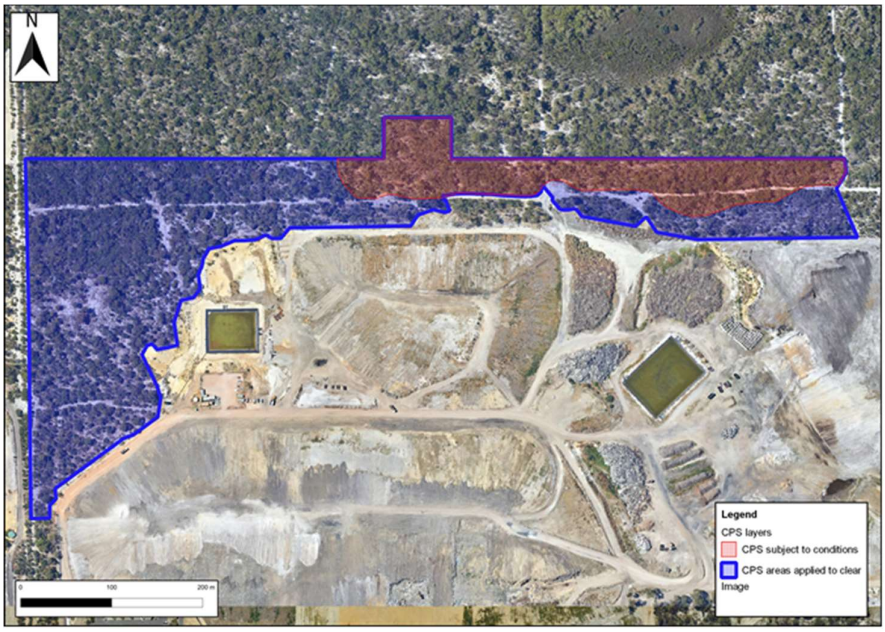

Figure 1. Application area (shaded blue). The area shaded red ('CPS subject to conditions') is the area that is not authorised to be cleared under CPS 8486/1.

Figure 2. Photographs of the application area (DWER, 2019).

3. Minimisation and mitigation measures

The original clearing permit application proposed to clear 11.5 hectares of native vegetation for the purpose of expanding the Stanley Road Waste Management Facility (BHRC, 2019). The applicant did not provide any avoidance or mitigation measures in the original clearing permit application (BHRC, 2019). However, in a meeting with DWER officers in June 2019, the applicant advised that expanding the landfill on the existing site was preferable than developing at a separate location, as existing supporting infrastructure could be utilised. To counterbalance the significant residual impacts to the *Banksia* Woodlands of the Swan Coastal Plain TEC and habitat for threatened fauna, an offset proposal was submitted to support the clearing permit application. The suitability of the offset proposal is discussed under section 6 of this report.

Based on a preliminary assessment conducted by the DWER, the application area was identified as containing approximately 2.6 hectares of suitable habitat for threatened flora species (further discussed under Principle (c)). The applicant has agreed that until further targeted survey work is undertaken, the portion of the application area identified as suitable habitat for threatened flora, will not be cleared (Figure 1). This area will be conditioned on the permit as an area that is not authorised to be cleared. Based on this, the approved clearing area has been reduced to 8.41 hectares.

4. Assessment of application against clearing principles

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

Proposed clearing is at variance with this Principle

The application area is considered to comprise a high level of biodiversity, as it contains suitable habitat for threatened fauna species, intersects a South West Regional Ecological Linkages (SWREL) axis line (ID 47), and contains vegetation representing the Commonwealth listed *Banksia* Woodlands of the Swan Coastal Plain TEC (*Banksia* Woodlands TEC).

As outlined in section 2, the flora and vegetation survey recorded one vegetation type across the application area, ranging from degraded to excellent (Keighery, 1994) condition. The Department of Biodiversity, Conservation and Attractions (DBCA) advised that portions of the application area may have been historically cleared and/or grazed by livestock, and combined with the current heavy level of kangaroo grazing, has resulted in some areas having a depauperate to absent understory (DBCA, 2019a). The survey recorded 7.8 hectares of the application area to represent the Commonwealth listed *Banksia* Woodlands TEC, listed as Endangered under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Strategen-JBS&G, 2019). No other priority or threatened ecological communities are likely to occur within or adjacent to the application area.

One priority listed species, *Acacia semitrullata* (P4) was recorded just outside of the eastern boundary of the application area during the site inspection (DWER, 2019). DBCA advised that this species is found throughout the local area, and therefore may extend throughout the surrounding upland vegetation of the application area (DBCA, 2019a). DBCA also advised that the application area may also support *Pterostylis frenchii* (P2), however given the kangaroo grazing pressure, flowering heads are likely to be grazed before identification can be confirmed (if present) (DBCA, 2019a). A flora and vegetation survey of the application area identified a total of 50 native flora species, however no priority or threatened flora species were recorded (Strategen-JBS&G). It is not likely that the proposed clearing will have any significant impact on the conservation status of *Acacia semitrullata* or *Pterostylis frenchii* (DBCA, 2019a).

As discussed under Principle (c), no threatened flora species were recorded during the survey. However, the application area contains suitable habitat for threatened flora species, being *Drakaea elastica*, *Drakaea micrantha* and *Caladenia huegelii*. Given the timing of the survey, the presence of *Drakaea elastica* and *Drakaea micrantha* cannot be excluded. Until further targeted surveys can be undertaken to confirm the presence of the two *Drakaea* sp., the applicant has agreed to not undertake any clearing of the area identified as suitable habitat. This portion of the application area will not be authorised to be cleared under this clearing permit (Figure 1).

Sixteen introduced weeds were identified during the survey (Strategen-JBS&G, 2019). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species and dieback into non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of weed and dieback management practices.

As discussed under Principle (b), the application area supports significant foraging habitat for Baudin's cockatoo (*Calyptorhynchus baudinii*), Forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*) and Carnaby's cockatoo (*Calyptorhynchus latirostris*) (collectively known as black cockatoos), and habitat that is suitable for the Western Ringtail Possum (*Pseudocheirus occidentalis*). The application area is also likely to support habitat for other native fauna, and forms part of a small scale, but strategic fauna corridor within the local area. Fauna management measures, including undertaking clearing in a slow, progressive and directional manner, and pre-clearance tree hollow inspections will minimise the direct impact of clearing to individuals.

Based on the above, the proposed clearing is at variance with this Principle. It is considered that a suitable offset (outlined in Section 6 of this report) will counterbalance the significant residual impacts to black cockatoos and the *Banksia* Woodlands TEC. The applicant has advised that the proposed offset will consist of land acquisition.

(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 is at variance with this Principle

According to available databases, 16 threatened fauna species, eight priority fauna species, and 17 fauna species listed under international agreement have been recorded within the local area (10 kilometre radius). Of these species, the application area is likely to support black cockatoos, Western Ringtail Possums, Quenda (*Isoodon obesulus fusciventer*), and the South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*).

One broad fauna habitat type, Eucalyptus Woodland, was recorded within the application area, described as comprising an overstorey that includes marri and jarrah, a midstorey that comprises species including *Acacia*, *Banksia* and *Kunzea* over an understorey of *Xanthorrhoea preissii* and low shrubs (Strategen JBS&G, 2019). The western side of the application area also contains scattered *Agonis flexuosa* trees (DCBA, 2019a).

As discussed under Principle (a), 7.8 hectares of the application area is mapped as the *Banksia* Woodlands TEC. The dominant flora species that comprises this TEC provides key food resources for black cockatoos. In the Perth-Peel region, where this

application area is located, individual night roosts need food and water within 6 kilometres, with overlapping foraging ranges within 12 kilometres, to support roosting sites and maintain habitat connectivity and movement across the landscape (EPA, 2019). Within the local area, four Forest red-tailed black cockatoo roosting sites, two confirmed roosting sites and three unconfirmed roosting sites have been previously recorded. Permanent water sources, being Brunswick and Wellesley River, is located within 1 kilometre of the application area, and as discussed under Principle (e), the application area is located within an extensively cleared landscape. Given this, the 7.8 hectares of native vegetation within the application area provides significant foraging habitat for black cockatoos. A fauna habitat assessment over the application area recorded 15 trees containing a total of at least 44 hollows (Harewood, 2020). Taking into consideration the area that is not authorised to be cleared (shaded red in Figure 1), the proposed clearing will involve the removal of 11 trees with at least 32 hollows. None of these hollows are of an appropriate size to be utilised by black cockatoo for breeding, therefore the application area is not considered to provide habitat that is suitable for breeding black cockatoos. However, these hollows may be utilised by other fauna including Western Ringtail Possums, who are likely to utilise hollows for daytime refuge in preference to drey building (Harewood, 2020).

Nocturnal surveys for Western Ringtail Possums were conducted on 4 March 2020 and 6 March 2020. The nocturnal survey recorded at least two individuals within the application area, confirming that the application area supports Western Ringtail Possums albeit at low densities (Harewood, 2020). The entire application area, including the low *Banksia* woodlands, is likely to be utilised by Western Ringtail Possums, however, areas where the plant diversity is highest, and where *Kunzea* is densest, are likely to be favoured (Harewod, 2020). Whilst the application area contains habitat suitable for Western Ringtail Possums, the proposed clearing is not likely to remove habitat that is significant for Western Ringtail Possums. The application area is located adjacent to remnant vegetation that extends over 8 kilometres north of the application area, of which the majority is freehold properties under management by the DBCA. Western Ringtail Possum individuals will be able to disperse into the adjacent vegetation, which provides similar habitat values as the application area. In regard to potential direct impact on individuals during the activity of clearing, the implementation of fauna management measures, including pre-clearing hollow inspections and the presence of a fauna spotter during the activity of clearing, will reduce this risk.

The application area may also provide suitable habitat for Quenda and South-western Brush-tailed Phascogale. Quenda have been historically found in or near the application area during trapping programs (Animal Pest Management Services, 2018). This species is usually associated with wetland areas, often feeding in adjacent woodland habitat (DEC, 2012). This type of habitat is present adjacent to the application area and therefore, Quenda is expected to be present within the application area. The South-western Brush-tailed Phascogale are now known to occur between Perth and Albany and have been observed in dry sclerophyll forests and open woodlands that contain hollow-bearing trees. This species has been recorded approximately 950 metres from the application area in 2014. Based on the fauna habitat type recorded, the application area may provide suitable habitat for this species. As described above, there is continuous remnant vegetation that extends north from the application area that fauna are able to disperse to. Given this, the application area is not considered to be significant habitat for either of these species. The implementation of fauna management measures involving the clearing to be conducted in a slow, progressive and directional manner (south to north), will reduce the potential risk of direct impact on individuals that may be present within the application area during the activity of clearing.

A South West Regional Ecological Linkages (SWREL) axis line (ID 47) runs through the application area (Figure 3). An ecological linkage is a series of (both contiguous and non-contiguous) patches which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within and across a landscape (Molloy et al., 2009). The Stanley Road Waste Management Facility occurs over the mapped SWREL axis line (Figure 3), and therefore fauna movement is likely to divert around the existing infrastructure. The expansion of the Stanley Road Waste Management Facility as proposed, is not likely to significantly impact on the existing function of the mapped SWREL ecological linkage. In addition, the vegetation to the east of the application area provides a small scale, but strategic fauna corridor, linking the conservation areas of the Kemerton Industrial lands to the north, with remnant vegetation to the south, and the Leschenault Regional Park along the Brunswick River. While this fauna corridor is not currently located within the application area itself, the maintenance of this corridor's integrity is of conservation value (DBCA, 2019a). Indirect impacts such as spread of weeds and dieback into this area, may be minimised by the implementation of hygiene management measures.

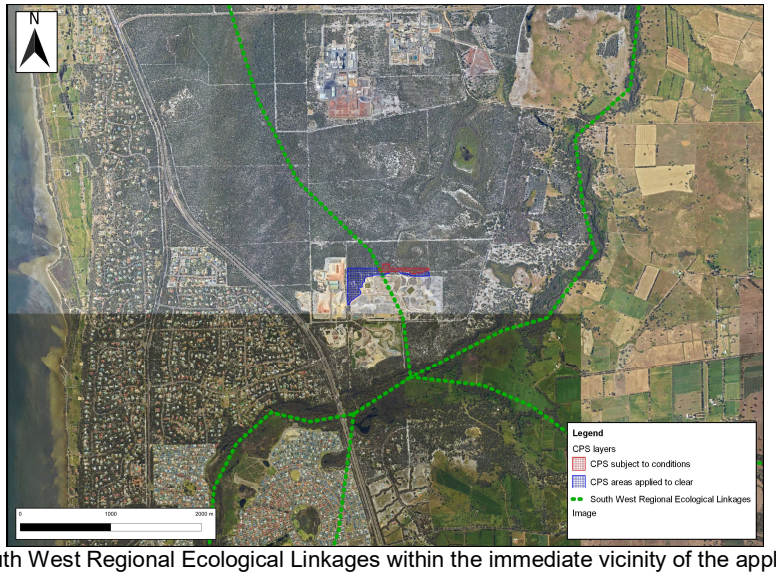

Figure 3. South West Regional Ecological Linkages within the immediate vicinity of the application area.

The use of the application area by conservation significant fauna species and the presence of vegetation supporting ecological linkages indicates that the application area is significant habitat for fauna.

Based on the above, the proposed clearing is at variance with this Principle. It is considered that a suitable offset (outlined in Section 6 of this assessment) will counterbalance the significant residual impacts to black cockatoos. The applicant has advised that the proposed offset will consist of land acquisition. Potential direct impacts to fauna within the application area may be minimised by requiring all clearing activities to be conducted in a slow, progressive and directional (south to north) manner, and potential direct impacts to Western Ringtail Possums may be minimised by the requirement for pre-clearance tree hollow inspections by a qualified environmental specialist.

(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 (Western Australian Herbarium, 1998-). Of these species, three threatened flora species are considered to possibly occur within the application area, based on the presence of suitable habitat:

- *Drakaea elastica*;
- *Drakaea micrantha*; and
- *Caladenia huegelii*.

Drakaea elastica and *Drakaea micrantha* are known from comparable habitat within two kilometres of the application area (DBCA, 2019a). *Drakaea elastica* grows on bare patches of sand within otherwise dense vegetation in low-lying areas alongside winterwet swamps, typically in *Banksia* woodland or spearwood thicket vegetation (DEC, 2009). The site inspection showed that wetland vegetation may be within or in close proximity to the application area (DWER 2019a). *Drakaea micrantha* is usually found in cleared fire breaks or open sandy patches that have been disturbed, and where competition from other plants has been removed and is often found with other *Drakaea* species (DEWHA, 2008).

Caladenia huegelii occurs in areas of mixed woodland of jarrah (*Eucalyptus marginata*), candlestick banksia (*Banksia attenuata*), holly banksia (*Banksia ilicifolia*) and firewood banksia (*Banksia menziesii*) with scattered sheoak (*Allocasuarina fraseriana*) and marri (*Corymbia calophylla*) over dense shrubs of blueboy (*Stirlingia latifolia*), Swan River myrtle (*Hypocalymma robustum*), yellow buttercups (*Hibbertia hypericoides*), buttercups (*Hibbertia subvaginata*), balga (*Xanthorrhoea preissii*), coastal jugflower (*Adenanthos cuneatus*) and *Conostylis* species, from north of Perth to the Busselton area. It usually occurs within 20 kilometres of the coast, associated with the Bassendean sand-dune system (DEWHA, 2009).

A flora survey over the application area during 23 September 2019 did not record any threatened flora species within the application area, however recorded habitat considered to be suitable for all three threatened flora species (Strategen JBS&G, 2019). The timing of this survey was suitable for *Caladenia huegelii*, which flowers from September to October. Therefore, it is likely that the application area is not necessary for the continued existence of *Caladenia huegelii*.

The two *Drakaea* species flower during July and August (Western Australian Herbarium, 1998-), as such, were likely to be undetectable at the time of survey. Given this, the potential presence of these two threatened flora species within the application area cannot be excluded. The survey recorded approximately 2.6 hectares of the application area to be suitable habitat (Figure 4; Strategen-JBS&G, 2020a). To minimise the potential impact to threatened flora, this area will not be authorised to be cleared (Figure 1). Further targeted surveys will be required, and the proposed clearing within this area will be subject to future authorised clearing.

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

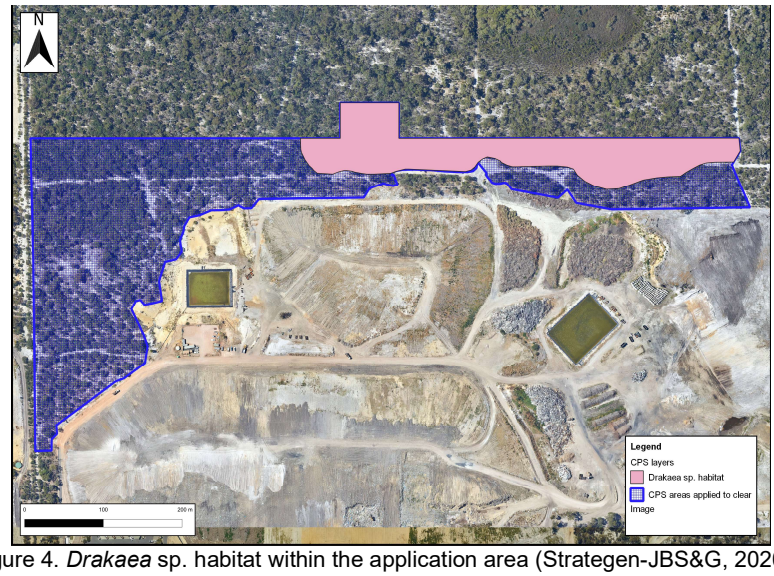

Figure 4. *Drakaea* sp. habitat within the application area (Strategen-JBS&G, 2020a).

(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 databases, there are two state listed TECs recorded within the local area, including the 'Herb rich shrublands in clay pans (floristic community type SCP08)' and the '*Corymbia calophylla - Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain (floristic community type SCP3c)'. The survey did not identify any vegetation within the application area to be representative of any state listed TECs (Strategen-JBS&G, 2019).

Based on the above, 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 in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750. Below this threshold, species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The application area is located in the Swan Coastal Plain Interim Biogeographic Regionalisation for Australia (IBRA) bioregion, which retains approximately 38 per cent of its pre-European native vegetation (Table 1; Government of Western Australia, 2019). The application area is mapped as Bassendean Complex-Central and South vegetation complex. The extent of pre-European vegetation remaining within this complex is approximately 26 per cent, which is below the 30 per cent threshold (Table 1; Government of Western Australia, 2019). In assessing the risk of further loss and subsequent cumulative effects, consideration has been given to the extent of native vegetation remaining within the local area, which is approximately 25 per cent pre-European native vegetation cover.

As the vegetation extent for both the mapped vegetation complex and local area is below the 30 per cent threshold, the application area occurs within an area that has been extensively cleared. As discussed under Principles (a) and (b), the application area provides habitat for threatened fauna, forms part of an important ecological linkage within the local area and contains vegetation that is representative of a Commonwealth listed TEC. Given this, the proposed clearing is at variance with this Principle. However, the Environmental Protection Authority (EPA) recognises the Greater Bunbury Region within the Greater Bunbury Region Scheme to be a constrained area, within which a minimum 10 per cent threshold for ecological communities is recommended (EPA, 2003). As the application area occurs within this constrained area, and given that all vegetation extents are above the revised 10 per cent threshold, offsets are not required.

Table 1. Remnant vegetation extents (Government of Western Australia, 2019).

	Pre-European (ha)	Current Extent (ha)	Extent remaining (%)	Current extent in all DBCA managed lands (ha)	Extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA bioregion					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
Vegetation complex					
Bassendean Complex-Central and South	87,476.26	23,508.66	26.87	4377.36	5.00

(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 likely to be at variance with this Principle

According to available databases, there are no watercourses or wetlands mapped within the application area. However, a small portion of the application area (approximately 0.05 hectares) intersects the buffer of a conservation category wetland (Figure 5). No watercourses or riparian vegetation was observed during the DWER site inspection (DWER, 2019) or during the survey (Strategen-JBS&G, 2019).

As discussed under Principle (c), the permit holder will not be authorised to clear approximately 2.6 hectares, which was identified as suitable habitat for threatened flora. Taking this exclusion area into consideration, the proposed clearing will retain a buffer of over 50 metres from the mapped conservation category wetland.

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

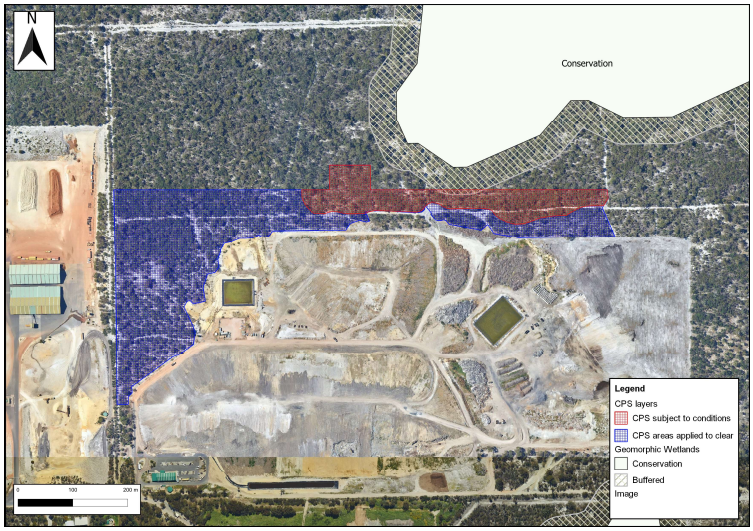

Figure 5. Location of the conservation category wetland in relation to the application area.

(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
As described under section 2, four soil subsystems are mapped within the application area (Schoknecht et al., 2004).

Based on the mapped land degradation risk, the application area has a relatively low likelihood of water erosion, subsurface acidification, flooding and waterlogging (Table 2; van Gool et al., 2005). The application area has a moderate risk of salinity (Table 2; van Gool et al., 2005).

Seventy per cent of the mapped units has a high to extreme risk of wind erosion (van Gool et al., 2005). The site inspection (DWER, 2019) did not show that the adjacent cleared areas were subject to significant erosion; however, erosion management should be proposed to mitigate any possible erosion that may occur. Undertaking the proposed works within two months of clearing will assist in mitigating this risk.

Based on the potential for wind erosion to occur, the proposed clearing may be at variance with this Principle.

Table 2. Land degradation risk (van Gool et al., 2005).

Risk categories	Spearwood S1c Phase	Bassendean B1a Phase	Bassendean B6 Phase	Bassendean B1 Phase
Wind erosion	>70% of map unit has a high to extreme wind erosion risk	>70% of map unit has a high to extreme wind erosion risk	>70% of map unit has a high to extreme wind erosion risk	>70% of map unit has a high to extreme wind erosion risk
Water erosion	10-30% of map unit has a high to extreme water erosion risk	<3% of map unit has a high to extreme water erosion risk	<3% of map unit has a high to extreme water erosion risk	3-10% of map unit has a high to extreme water erosion risk
Salinity	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	50-70% of map unit has a high subsurface acidification risk or is presently acid	<3% of map unit has a high subsurface acidification risk or is presently acid	10-30% of map unit has a high subsurface acidification risk or is presently acid	<3% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk
Water logging	<3% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk	10-30% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk

(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
The application area is located approximately 250 metres south of a freehold lot under management by the DBCA. The proposed clearing has the potential to increase the spread of dieback and weeds, potentially affecting the conservation area.

Based on the above, the proposed clearing may be at variance with this Principle. The implementation of dieback and weed management practices are likely to minimise the risk.

(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

Groundwater salinity within the application area is mapped as 500 to 1,000 total dissolved solids, milligrams per litre. This level of groundwater salinity is classified as 'fresh'. Given this level, the proposed clearing is not likely to increase groundwater salinity. The proposed clearing is not likely to deteriorate the quality of groundwater.

As discussed in Principle (f), there are no watercourses in the application area, and taking into consideration the area not authorised to be cleared, the proposed clearing will retain a buffer of over 50 metres from a conservation category wetland mapped to the north of the application area (Figure 5). Given this, the proposed clearing is not likely to deteriorate the quality of surface water.

Based on the above, 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 application area has a low risk of flooding and waterlogging (van Gool et al., 2005), therefore the proposed clearing is not likely to cause or exacerbate, the incidence or intensity of flooding.

Based on the above, 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 DWER website on 13 June 2019 with a 21 day submission period. No public submissions have been received in relation to this application.

The Applicant intends to refer the proposal to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) under the EPBC Act in relation to impacts to black cockatoos and the *Banksia* Woodlands TEC. It is understood that this referral is currently being prepared and will be lodged shortly (Strategen-JBS&G, 2020b).

The Shire of Harvey advised that the proposed development is exempt from requiring development approval under the Greater Bunbury Region Scheme (Shire of Harvey, 2019).

On 2 October 2019, it was identified that approximately 0.316 hectares of the application area had been cleared. A DWER compliance investigation concluded that a small portion (0.005 hectares) of this clearing may be exempt, however the remainder of this cleared area was not. The DWER advised the applicant to cease clearing until a decision was made on this clearing permit application. This cleared area has been removed from the application area. No further action has been undertaken.

5. Offsets considered after the assessment

Offset proposal

The assessment against the ten Clearing Principles has identified that the proposed clearing is at variance with Principles (a), (b), and (e). It is considered that the proposed clearing will result in the following significant residual impacts:

- Loss of up to 7.8 hectares of the *Banksia* Woodlands TEC; and
- Loss of up to 7.8 hectares of black cockatoo foraging habitat.

Although the application area forms part of a significant remnant in an area that has been extensively cleared (therefore at variance with Principle (e)), an offset is not required due to being in a constrained area as part of the Greater Bunbury Region Scheme.

To counterbalance the significant residual impacts to the above, the applicant proposes an offset that involves funding the purchase of a portion of Lot 4703 on Plan 207023, Cookernup, by DBCA for their management in perpetuity. The property is located approximately 27.7 kilometres north of the application area. The DBCA (2019b) advised that the entirety of this property is of conservation value as it is a large area of continuous remnant vegetation including both upland and wetland vegetation. The location supports large areas of conservation category wetlands and large populations of the priority listed flora species, *Acacia semitrullata* (P4) and *Acacia flagelliformis* (P4) (DBCA, 2019b).

The DBCA recorded six vegetation types (VT) during a site inspection of the entirety of Lot 4703 on Plan 207023, Cookernup, in 2015, including:

- VT1: *Banksia attenuata, Banksia ilicifolia, Eucalyptus marginata* woodlands. This vegetation would be examples of both floristic community types (FCT) 21a and FCT21b, although *Scholtzia involucrata* and *Calytrix fraseri* are quite widespread and may indicate that the woodland vegetation here is transitioning to FCT23 (central *Banksia* woodlands). All this vegetation is the federally listed *Banksia* Woodlands TEC.
- VT3: this is dampland wetland vegetation. A small portion of VT3 is an example of FCT04, and the remaining extent of this community is predominantly a drier form of dampland vegetation dominated by *Melaleuca preissiana* over a closed *Hypocalymma angustifolia* low heath. The mapped extent of this vegetation also includes transitional vegetation between the damplands and FCT6.

- VT3a: this is where *Anarthria laevis* becomes a dominant in the dampland vegetation; the southern-most occurrence of FCT3a has been historically cleared and is of a poorer condition compared to the excellent example at the north of the location.
- VT6: this is a closed wetland heath of *Astartea fascicularis, Pericalymma elliptica, Calothamnus lateralis*, over *Meeboldina* sedge species. The health of this community ranges from excellent in the lower lying areas to poor in the drier areas where there is vegetation decline due to hydrological stress. In places, *Hakea varia* and *Anarthria laevis* occur in this community. Fringing the two south-eastern most examples of this wetland is *Dielsia stenostachya* which is of conservation significance as occurrences in this area are the only places the species occurs south of Perth (it is typically found between Perth and Gingin).
- VT8: these are long inundated wetlands of *Melaleuca rhaphiophylla* or *Melaleuca preissiana* over a *Lepidosperma longitudinale* closed sedgeland. The core of these wetlands is often bare ground. These wetlands are generally surrounded by *Melaleuca lateritia* and *Melaleuca teretifolia*.
- VT9: this is an area that has been historically cleared, prior to clearing the majority of this area would have been a continuation of VT1. The area is currently dominated by a closed tall scrub of *Kunzea glabrescens*, the area is very dense and was unable to be inspected in detail. The regrowth vegetation is weed free but appears to have poor structure and species diversity. Given the area is weed free it is likely that with time structure and diversity will develop.

Since the 2015 site inspection, the entire location was burnt by the 2016 Yarloop wildfire. A perimeter inspection of the location was undertaken in early 2019 by DBCA, and excellent bushland recovery was noted. In particular, the fire event is likely to assist in the development of structure and diversity in VT9 (DBCA, 2019b).

Based on the vegetation types described above, the entirety of Lot 4703 on Plan 207023, Cookernup, is not suitable as an offset site. The wetland portion (VT3, VT3a, VT6 and VT8) is not suitable as an offset, as the environmental values of these areas are dissimilar to the application area. Given this, the offset proposal does not include these vegetation types within the offset site.

Offset suitability

The upland vegetation comprising VT1 is suitable as an offset site to counterbalance the significant residual impacts to the *Banksia* Woodlands TEC and black cockatoo foraging habitat (Figure 6). In its current condition, the upland vegetation comprising VT9 is not considered suitable as an offset site. However, depending upon the regeneration of the area, there is a possibility that it may be banked as an offset site for future authorised clearing (Figure 7).

Figure 6. Upland vegetation (VT1) suitable as an offset site.

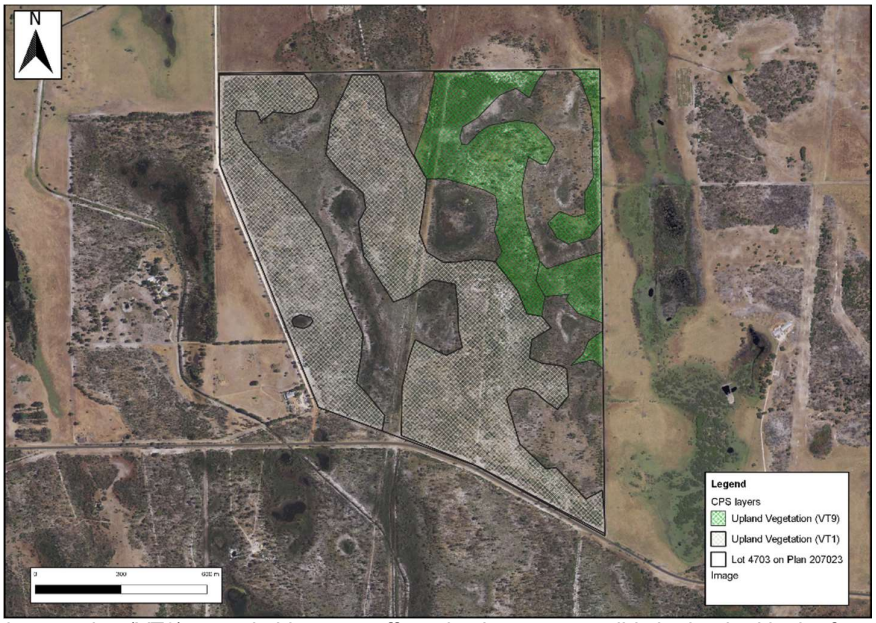

Figure 7. Upland vegetation (VT9) not suitable as an offset site, but may possibly be banked in the future dependent on regeneration.

Given the variation in the condition of the vegetation within the offset site, VT1 and VT9 have been assigned numbers Area 1 to 4, in order to calculate the amount (in hectares) available to be offset and banked for future authorised clearing (Table 3; Figure 8).

Table 3. Description of Areas 1 to 4 within offset site.

Vegetation Type	Area	Description	Amount within offset site (hectares)
VT1	Area 1	Area 1 is representative of the *Banksia* Woodlands TEC. The vegetation within Area 1 is considered to be 'like-for-like' with the application area. Overall, Area 1 is considered to be in very good (Keighery, 1994) condition.	26.36
	Area 2	Area 2 is also representative of the *Banksia* Woodlands TEC, however is patchy and in a lesser quality than Area 1. Overall, Area 2 is considered to be in good (Keighery, 1994) condition.	45.6
VT9	Area 3	Areas 3 and 4 have been historically cleared. However, prior to clearing the majority of this area would have been a continuation of VT1, therefore it may possibly be used as a banked offset site for future authorised clearing. However, this will be dependent upon regeneration success. Areas 3 and 4 have not been included as a banked offset, as it still is in a degraded (Keighery, 1994) condition, and is not suitable as an offset.	18
	Area 4		7.72

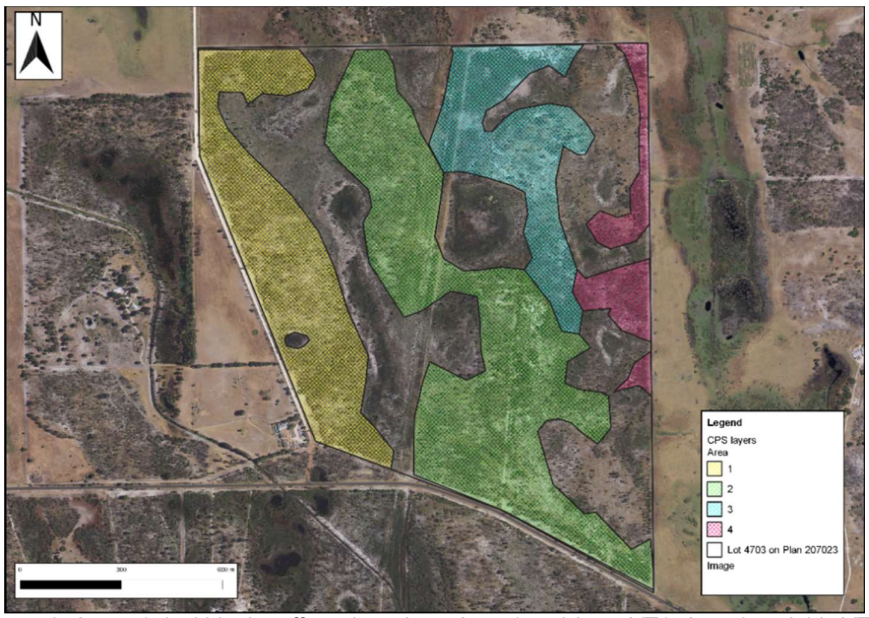

Figure 8. Areas 1-4 within the offset site; where Area 1 and 2 are VT1, Area 3 and 4 is VT9.

In assessing whether the proposed offset is adequately proportionate to the significance of the environmental values being impacted, DWER undertook a calculation using the former Department of Agriculture, Water and the Environment's Offsets Assessment Guide. The Offsets Assessment Guide indicated that the allocation of 16.8 hectares of vegetation within the offset site is adequate in counterbalancing the significant residual impacts of the proposed clearing of 7.8 hectares of black cockatoo foraging habitat and *Banksia* Woodlands TEC. Of the 16.8 hectare required to be offset, 10.76 hectares will be offset using Area 1, and the remaining 6.04 hectares will be offset using Area 2 (Figure 9). This is consistent with the WA Environmental Offsets Policy September 2011.

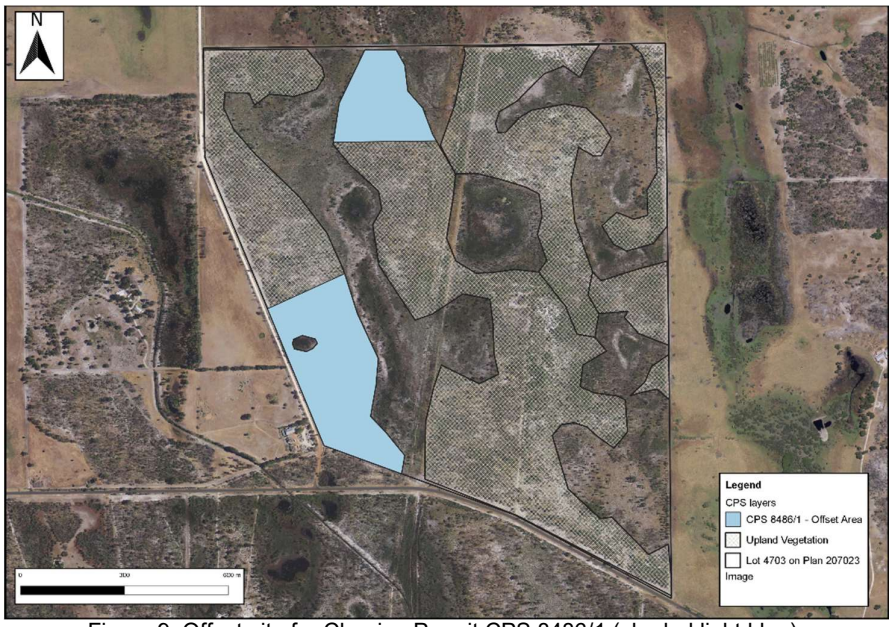

Figure 9. Offset site for Clearing Permit CPS 8486/1 (shaded light blue).

In addition to clearing permit application CPS 8486/1, there are two other clearing permits for the Stanley Road Waste Management Facility, being CPS 7259/2 and CPS 5394/5, which will be utilising the same offset site at Lot 4703 on Plan 207023, Cookernup. Clearing permit CPS 7259/2 required 3.5 hectares as an offset, and clearing permit CPS 5394/5 required 12.1 hectares. The offsets for both of these clearing permits will utilise the area remaining within Area 1.

In total, there is 71.96 hectares of VT1 (across Area 1 and Area 2) that can be used as an offset. The total offset site required for clearing permits CPS 5394/5, CPS 7259/2 and CPS 8486/1 is 32.4 hectares. Given this, there will be 39.56 hectares of VT1 (remaining within Area 2), that can be banked for future authorised clearing (Figure 4). The remaining area within Area 2 will be recorded as a banked offset site in the WA Offsets Register. It should be noted that use of the banked offset site will not be automatically accepted in every instance. In each case, the applicant must demonstrate how the offset counterbalances the significant residual impacts of the associated clearing. Where relevant, this may include a requirement to provide additional site-level information verifying the environmental values of the offset site.

In regard to VT9 (Area 3 and Area 4), here an additional 25.72 hectares that may possibly be banked (Figure 4). However, the use of Area 3 and Area 4 as a banked offset is dependent on the regeneration success. Additional site-level information verifying the environmental values of these areas will be required prior to accepting these areas to be banked for future use. Given this, Area 3 and Area 4 will not be recorded as a banked offset site in the WA Offsets Register.

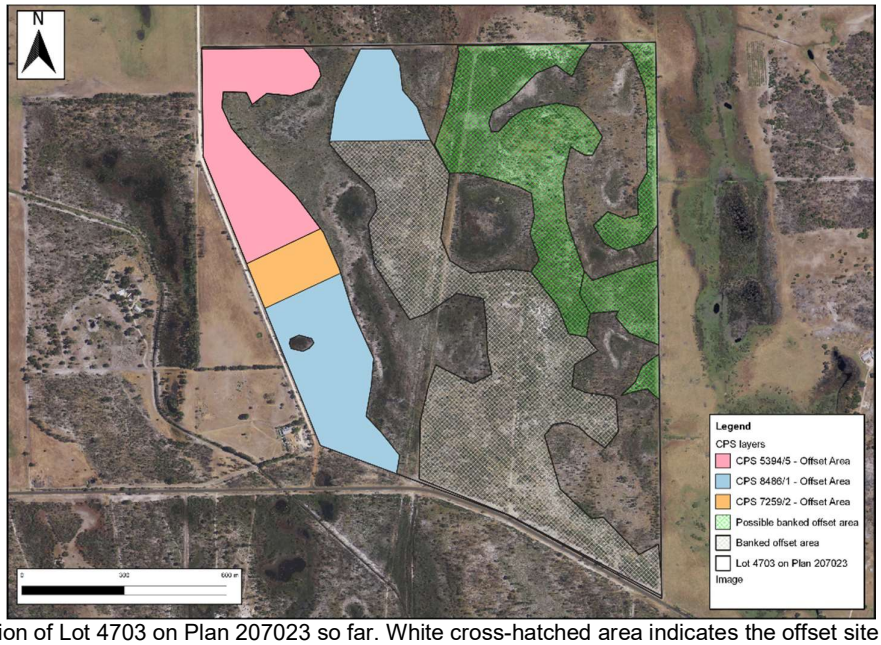

Figure 10. Utilisation of Lot 4703 on Plan 207023 so far. White cross-hatched area indicates the offset site to be banked; the green cross-hatched area indicates the area that may possibly be banked (dependent upon the regeneration of VT9).

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GIS Databases:

- Aboriginal Heritage Places
- Black Cockatoo Breeding Sites – Buffered
- Black Cockatoo Roost Sites
- Black Cockatoo Records
- DBCA Legislated Lands and Waters
- Environmentally Sensitive Areas
- Groundwater Salinity Statewide
- Hydrography, linear
- IBRA Vegetation Statistics
- Geomorphic Wetlands, Swan Coastal Plain
- SCP Vegetation Complex Statistics
- Soil and Landscape Mapping – Best Available
- South West Regional Ecological Linkages
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

Appendix: Justification of values used in the Commonwealth Offset Assessment Guide

Field Name	Description	Justification for value used - Area 1	Justification for value used - Area 2
IUCN Criteria	The IUCN criteria for the value being impacted	1.2% - Under the EPBC Act, Carnaby's Cockatoo and Baudin's Cockatoo are listed as Endangered, and Forest Red-tailed Black Cockatoo is listed as Vulnerable. The Banksia Woodlands TEC is also listed as Endangered under the EPBC Act. Given the impacts are to all three black cockatoo species and the Banksia Woodlands TEC, the highest conservation status (Endangered) is applicable.	1.2% - Under the EPBC Act, Carnaby's Cockatoo and Baudin's Cockatoo are listed as Endangered, and Forest Red-tailed Black Cockatoo is listed as Vulnerable. The Banksia Woodlands TEC is also listed as Endangered under the EPBC Act. Given the impacts are to all three black cockatoo species and the Banksia Woodlands TEC, the highest conservation status (Endangered) is applicable.
Area of impact (habitat/community) or Quantum of impact (features/individuals)	The area of habitat/community impacted or number of features/individuals impacted	4.41 hectares - Area of black cockatoo habitat and significant remnant vegetation that will be cleared.	7.09 hectares - Area of black cockatoo habitat and significant remnant vegetation that will be cleared.
Quality of impacted area (habitat/community)	The quality score for area of habitat/community being impacted - a measure of how well a particular site supports a particular threatened species or ecological community and contributes to its ongoing viability	6 - Vegetation condition of the clearing area ranges from degraded to excellent. Area likely to provide foraging habitat for Black cockatoos, potential for roost sites and breeding. Area also a SWREL corridor. This is considered to equate to a score of 6.	6 - Vegetation condition of the clearing area ranges from degraded to excellent. Area likely to provide foraging habitat for Black cockatoos, potential for roost sites and breeding. Area also a SWREL corridor. This is considered to equate to a score of 6.
Time over which loss is averted (habitat/community)	This describes the timeframe over which changes in the level of risk to the proposed offset site can be considered and quantified	20 - The offset involves acquiring the land and entering into a conservation covenant to maintain the vegetation in perpetuity. Therefore the maximum of 20 years was applied.	20 - The offset involves acquiring the land and entering into a conservation covenant to maintain the vegetation in perpetuity. Therefore the maximum of 20 years was applied.
Time until ecological benefit (habitat/community) or Time horizon (features/individuals)	This describes the estimated time (in years) that it will take for the main benefit of the quality (habitat/community) or value (features/individuals) improvement of the proposed offset to be realised	1 - It is considered that it will take no more than 1 year to acquire the offset area and place a conservation covenant.	1 - It is considered that it will take no more than 1 year to acquire the offset area and place a conservation covenant.
Start area (habitat/community) or Start value (features/individuals)	The area of habitat/community or number of features/individuals proposed to offset the impacts	8.9 hectares - Area of remnant vegetation proposed to be offset	17.2 hectares - Area of remnant vegetation proposed to be offset for CPS 8486/1 - remainder 28.44 ha

Start quality (habitat/community)	The quality score for the area of habitat/community proposed as an offset - a measure of how well a particular site supports a particular threatened species or ecological community and contributes to its ongoing viability	6 - The offset area will be located to the north of the clearing area. The offset area contains vegetation that consists of a similar age, structure and vegetation description as the area to be cleared. The area likely contains foraging habitat for black cockatoos. The lot has both upland and lowland areas which add to the ecological character of the location. For Area 1, which seems to have both over and understory intact, a score of 6 has been applied, the same as that applied to the clearing area.	5 - The covenant area will be located to the north of the clearing area on riverdale road. The offset area contains vegetation that "consists of a similar age, structure and vegetation description as the area to be cleared". The area likely contains foraging habitat; however the area has had some historical disturbance likely from tracks servicing the overhead power lines (as can be seen in aerial photographs) and some understory has been impacted. The lot has both upland and lowland areas which add to the ecological character of the location. Therefore a score of 5 has been applied.
Future quality without offset (habitat/community) or Future value without offset (features/individuals)	The predicted future quality score (habitat/community) or value (features/individuals) of the proposed offset site without the offset	6 - The quality is considered unlikely to change over a 1 year period to acquire the offset	5 - The quality is considered unlikely to change over a 1 year period to acquire the offset
Future quality with offset (habitat/community) or Future value with offset (features/individuals)	The predicted future quality score (habitat/community) or value (features/individuals) of the proposed offset site with the offset		
Risk of loss (%) without offset (habitat/community)	This describes the chance that the habitat/community on the proposed offset site will be completely lost (i.e. no longer hold any value for the protected matter of concern) over the foreseeable future without an offset	80% - The offset site is zoned 'General farming' and is surrounded by land also zoned 'General farming'. However, south of the proposed offset area is owned by DBCA to become reserves. Without acquiring the land and placing the covenant, the risk of loss of the site is considered to be 80% as there are clearing exemptions that could apply at least on part of the lot and it could become farmland relatively easily.	80% - The offset site is zoned 'General farming' and is surrounded by land also zoned 'General farming'. However, south of the proposed offset area is owned by DBCA to become reserves. Without acquiring the land and placing the covenant, the risk of loss of the site is considered to be 80% as there are clearing exemptions that could apply at least on part of the lot and it could become farmland relatively easily.
Risk of loss (%) with offset (habitat/community)	This describes the chance that the habitat/community on the proposed offset site will be completely lost (i.e. no longer hold any value for the protected matter of concern) over the foreseeable future with an offset	10% - It is considered that the risk of loss of the site will reduce to 10% as the site would eventually become an extension of the DBCA reserves	10% - It is considered that the risk of loss of the site will reduce to 10% as the site would eventually become an extension of the DBCA reserves
Confidence in result (%) – risk of loss (habitat/community)	The capacity of measures to mitigate risk of loss of the proposed offset site	90% - It is considered that there is a high level of confidence that acquiring and placing a covenant will result in a substantial reduction in risk of loss of the site.	90% - It is considered that there is a high level of confidence that acquiring and placing a covenant will result in a substantial reduction in risk of loss of the site.
Confidence in result (%) – Change in quality (habitat/community) or Change in value (features/individuals)	The level of certainty about the successful achievement of the proposed change in quality (habitat/community) or value (features/individuals)	90% - It is considered that the offset is not likely to result in a change in quality.	90% - It is considered that the offset is not likely to result in a change in quality.
% of impact offset	% of the significant residual impact that would be offset by the proposed offset (note: the offset calculations combined should equate to 100% for each residual impact)	100.16%	100.33%
Other comments	Include here any relevant additional comments (e.g. the size of offset required to offset 100% of the residual impacts)	The above considers that no intervention (rehab/reveg/weeding/etc. activities will be undertaken at the offset site. All the area will be alotted using CPS 5394 and CPS 7259, and part CPS 8486.	The above considers that no intervention (rehab/reveg/weeding/etc. activities will be undertaken at the offset site. The area will accommodate offset for CPS 8486 and some banked for future use. The vegetation within the site that could be banked is 40.43 ha which could be used to offset future clearing of up to 16.7 ha of clearing.