GOVERNMENT OF WESTERN AUSTRALIA

# CLEARING PERMIT

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

## PERMIT DETAILS

Area Permit Number: CPS 8395/1
Duration of Permit: From 19 September 2019 to 19 September 2024

## PERMIT HOLDER

Shire of Ashburton

## LAND ON WHICH CLEARING IS TO BE DONE

Lot 550 on Deposited Plan 414367, Talandji
Lot 551 on Deposited Plan 414367, Talandji

## AUTHORISED ACTIVITY

The Permit Holder must not clear more than 70.66 hectares of native vegetation within the areas cross-hatched yellow on attached Plan 8395/1.

## CONDITIONS

**1. 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

**2. Direction of clearing**

The Permit Holder shall conduct clearing in a progressive manner from one direction to the other (e.g. west to east) to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

**3. Erosion Management**

The Permit Holder must ensure that construction of the Pilbara Regional Waste Management Facility commences within three months of the authorised clearing being undertaken.

**4. Revegetation and Rehabilitation**

(a) The Permit Holder must *revegetate* and *rehabilitate* areas cleared for *temporary works* within 6 months of the area no longer being required for the purpose for which it was cleared.
(b) The Permit Holder is not required to *revegetate* and *rehabilitate* an area specified in condition 4(a) of this Permit if the Permit Holder intends to use that cleared area for another purpose within 24 months of that area no longer being required for the purpose for which it was originally cleared under this Permit.

**5. 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*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
(b) ensure that no known *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

**6. Vegetation management**

(a) Within three months of commencing clearing under this Permit, the Permit Holder shall construct a fence enclosing the areas cross hatched yellow on attached Plan 8395/1.

(b) Within one month of installing the fence required under condition 6(a), the Permit Holder shall notify the *CEO* in writing that the fence has been completed.

## PART III - RECORD KEEPING AND REPORTING

**7. Records must be kept**

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

(a) In relation to the clearing of native vegetation authorised under this Permit:

(i) the species composition, structure and density of the cleared area;

(ii) 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;

(iii) the date that the area was cleared;

(iv) the size of the area cleared (in hectares);

(v) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 1 of this Permit;

(vi) actions taken in accordance with conditions 2 and 3 of this Permit;

(vii) actions taken to minimise the risk of the introduction and spread of weeds in accordance with condition 5 of this Permit; and

(viii) the date that the fence was constructed in accordance with condition 6 of this Permit.

(b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 4 of this Permit:

(i) the size of the area *revegetated* and *rehabilitated* (in hectares);

(ii) the date(s) on which the area *revegetated* and *rehabilitated* was undertaken; and

(iii) the boundaries of the area *revegetated* and *rehabilitated* recorded as a *shapefile.*

**8. 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 7 of this Permit; and

(ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.

(b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.

(c) Prior to 19 June 2024, the Permit Holder must provide to the *CEO* a written report of records required under condition 7 of this Permit where these records have not already been provided under condition 8(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*;

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

***mulch*** means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

***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.

***shapefile*** means a shapefile consisting of polygons using the Geocentric Datum of Australia (GDA);

***temporary works*** means access tracks, spoil areas, side tracks, site offices, storage areas, laydown areas, extraction sites, camps, project surveys, pre-construction activities and similar works associated with a project activity that are temporary in nature;

***weed/s*** means any plant -

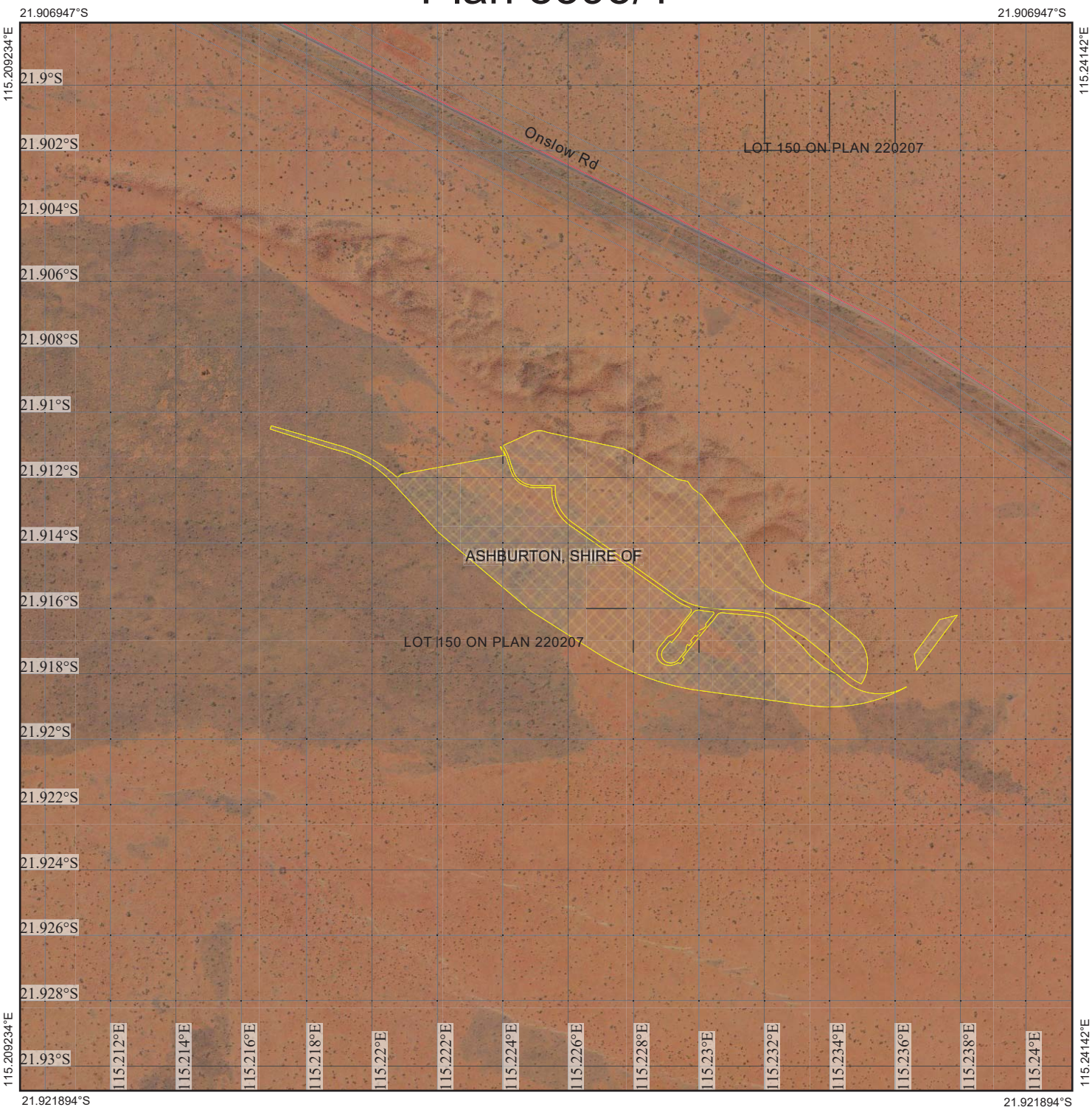
(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
(c) not indigenous to the area concerned.

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

20 August 2019

# Plan 8395/1




## Legend

- Imagery
- Clearing Instruments Activities
- Local Government Authority

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(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

..... Date 20 August 2019

Mathew Gannaway

Officer with delegated authority 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.:** 8395/1
**Permit type:** Area Permit

### 1.2. Applicant details

**Applicant's name:** Shire of Ashburton
**Application received date:** 1 March 2019

### 1.3. Property details

**Property:** Lots 550 and 551 on Deposited Plan 414367
**Local Government Authority:** Shire of Ashburton
**Localities:** Talanji

### 1.4. Application

| Clearing Area (hectares) | Method of Clearing | Purpose category: |
|---|---|---|
| 70.66 | Mechanical Removal | Waste disposal/management |

### 1.5. Decision on application

**Decision on Permit Application:** Grant
**Decision Date:** 20 August 2019

**Reasons for Decision:**

The clearing permit application was received on 1 March 2019 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing may be at variance to principles (a), (g) and (h) and is not likely to be at variance to the remaining clearing principles.

Based on the assessment of the application area, the Delegated Officer determined that:

- the application area may comprise a high level of biological diversity;
- the proposed clearing activities may impact on the Maryan's keeled slider, short-tailed mouse and western pebble-mound mouse, should they be utilising the application area at the time of clearing;
- the proposed clearing may cause appreciable land degradation in the form of wind erosion between clearing and establishment of the waste management facility; and
- the proposed clearing may result in the spread of weeds into adjacent vegetation proposed for inclusion into the Cane River Conservation Park.

To minimise the potential for appreciable land degradation and the spread of weeds, the clearing permit contains conditions requiring:

- the commencement of construction of the waste management facility within three months of any clearing being undertaken, to minimise wind erosion; and
- the movement of machinery to be restricted to the limits of the application area, that no known weed affected material is brought into the application area, and the cleaning of earth moving machinery prior to entering and leaving the application area.

To minimise direct impacts to the Maryan's keeled slider, short-tailed mouse and western pebble-mound mouse, a condition has been placed on the clearing permit which requires the applicant to undertake slow, progressive one directional clearing to allow fauna to move into adjacent habitat ahead of the clearing activity.

To minimise impacts and prevent inadvertent damage as a result of clearing to nearby occurrences of Priority 1 flora species *Abutilon* sp. Pritzelianum, a condition has been placed on the clearing permit which requires the applicant to construct a fence around the application area.

Noting that some of the clearing associated with the waste management facility may be temporary (tracks etc.), a revegetation condition has been placed on the clearing permit requiring the applicant to revegetate any temporarily cleared areas.

In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

## 2. Site Information

**Clearing Description**

The application is to clear 70.66 hectares of native vegetation within Lots 550 and 551 on Deposited Plan 414367, Talandji, for the purpose of constructing the Pilbara Regional Waste Management Facility (figure 1).

**Vegetation Description**

The application area is mapped as Beard vegetation association 98 which is described as hummock grasslands, shrub steppe; kanji over soft spinifex and *Triodia basedowii* (Shepherd et al., 2001).

A detailed flora and vegetation survey which encompassed a larger area (Study Area) encompassing the application area, mapped the vegetation within the application area as (Phoenix Environmental Sciences (Phoenix), 2018) (Figure 1):

- Open shrubland comprising mid open *Grevillea stenobotrya* shrubland over low open *Tephrosia virens* shrubland over low *Triodia basedowii*, *Triodia epactia* and *Aristida holathera* grassland (mapped over approximately 9.2 hectares of the application area); and
- Hummock grassland comprising isolated low *Corymbia hamersleyana* and/or *Corymbia zygophylla* mallee over isolated mixed shrubs over low *Triodia basedowii* hummock grassland (mapped over approximately 61.46 hectares of the application area).

**Vegetation Condition**

The detailed flora and vegetation survey identified that the vegetation within the application area ranges between the following conditions:

- Excellent; Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994); and
- Completely Degraded; The structure of the vegetation is no longer intact and the area is completely or almost completely without native species (Keighery, 1994).

The majority of the vegetation within the application area is in excellent (Keighery, 1994) condition, with minor areas, such as access tracks and drill pads in a completely degraded (Keighery, 1994) condition (Phoenix, 2017; Phoenix, 2018).

**Soil type**

Two broad landform systems have been mapped within the application area, being:

- Giralia Land System, described as sandy plains with linear dunes and broad sandy swales supporting hummock grasslands of hard and soft spinifex with scattered acacia shrubs; and
- Uaroo Land System, described as broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered acacia shrubs.

**Comments**

The local area referred to in the assessment of this application is defined as a 50 kilometre radius surrounding the application area.

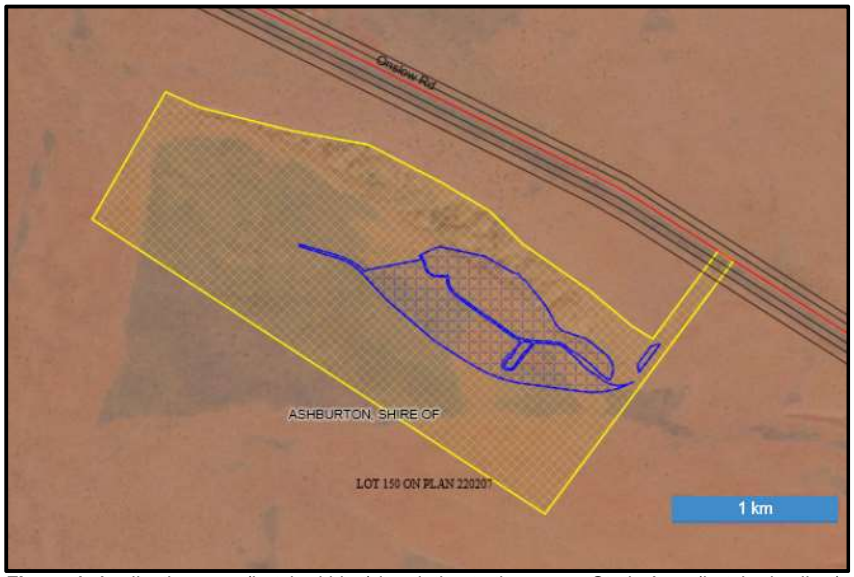


**Figure 1**. Application area (hatched blue) in relation to the survey Study Area (hatched yellow).

## 3. Assessment of application against clearing principles

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

**Proposed clearing may be at variance to this Principle**

In September 2017, Phoenix was commissioned by Talis Consultants, on behalf of the Shire of Ashburton, to undertake a flora and vegetation survey and terrestrial fauna survey (Survey 1) of a larger footprint area of 435 hectares (the Study Area) which encompassed the application area. The survey involved a single season reconnaissance flora and vegetation survey and a level 1 targeted terrestrial vertebrate fauna survey (Phoenix, 2017). A total of 45 flora species and sub-species were recorded during the survey (Phoenix, 2017).

A further detailed flora and vegetation survey of the Study Area was undertaken by Phoenix in 2018 (Survey 2). The aim of the survey was to build on the information collected in the abovementioned reconnaissance flora and vegetation survey, and included surveying of quadrats and relevés, targeted significant flora searches, and vegetation type and condition mapping. Targeted searches were undertaken for conservation significant flora throughout the Study Area, which occurred in all quadrats and relevés, as well as opportunistic sampling and meandering transect searches (Phoenix, 2018). A total of 51 flora species and sub-species were recorded during the survey (Phoenix, 2018). As detailed in Section 2 of this report, this survey identified two vegetation types within the application area, which were largely in an excellent (Keighery, 1994) condition (Phoenix, 2018).

The application area is located within unallocated Crown land, which was formerly a pastoral station (ex Mt Minnie pastoral lease). The former Mt Minnie Station is proposed to be added to the Cane River Conservation Park, located southeast of the Study Area, although the site of proposed works (being the current application area) will be excluded from this reserve addition. The survey noted that the recorded vegetation types within the application area are representative of the broadly mapped Beard vegetation association (98) described as Hummock grasslands, shrub steppe; kanji over soft spinifex and *Triodia basedowii*, which is a widespread community well represented at a regional level (Phoenix, 2018). This vegetation association is mapped over approximately 50 per cent of the larger ex Mt Minnie pastoral station (comprising approximately 110,000 hectares).

As discussed under Principle (c), there are no threatened flora species recorded within the local area and no threatened flora species were recorded within the Study Area during the abovementioned surveys (Phoenix, 2017; Phoenix, 2018).

Two priority flora species, being *Triumfetta echinata* (Priority 3) and *Abutilon* sp. Pritzelianum (Priority 1) (highly likely, however not definitively confirmed), were identified within the Study Area during both surveys. Survey 2 notes that while the seasonal timing of the survey was suitable to identify conservation significant flora species in the region (at the end of the wet season), the region had experienced less than average rainfall over the wet season resulting in dry conditions and a fewer number of healthy and identifiable plant species (Phoenix, 2018).

A total of 37 plants believed to be *Abutilon* sp. Pritzelianum were identified within the larger Study Area during Survey 2, however, definitive confirmation was not possible, given that these plants were sterile at the time of identification, and the majority of the plants were withered due to climatic conditions (Phoenix, 2018). Of these 37 plants, three individuals (comprising 8.1 per cent of the total population recorded within the survey) occurred within the boundary of the application area (Phoenix, 2018). *Abutilon* sp. Pritzelianum is known from 46 records over a range of 765 kilometres, with population sizes (when noted) ranging from 1 to 220 plants. The species has been recorded in the Carnarvon, Murchison and Pilbara bioregions. Survey 2 noted that given the limited regional survey effort, and likely detection of *Abutilon* sp. Pritzelianum in two adjacent dunes outside of the Study Area, it is likely the species also occurs more broadly in the vicinity of the Study Area (Phoenix, 2018).

The applicant has advised that one of the three abovementioned *Abutilon* sp. Pritzelianum plants within the application area is located on the southern boundary, in the middle of a proposed levee bund and is unable to be avoided, as the levee bund location is required to adequately mitigate flooding impacts at the site. The two other individuals are located on the northern side of the application area associated with a bushfire track. The applicant has advised that the track runs through a depression in the dune (rather than the dune ridge), and cannot be altered without a substantial increase in engineering works to ensure vehicle safety on the dune (Talis Consultants, 2019). All of the remaining 34 plants recorded during the survey have been excluded from the clearing footprint, and to ensure these plants are not inadvertently impacted as a result of clearing, the applicant will be required to fence the application area. Noting this, the range and number of known records of this species, the proposed clearing is not likely to significantly impact on the local extent of this species or on its conservation status.

One dead (likely to the climatic conditions) *Triumfetta echinata* individual was identified within the larger Study Area, which occurred approximately 20 metres from the boundary of the application area (Phoenix, 2017). Numerous fruit were observed at the base of the dead plant and subsequently it is likely that the species may still occur at this location as seed in the soil seed bank (Phoenix, 2018). This species is known from seven records over a range of 130 kilometres and has been recorded in the Carnarvon, Gascoyne and Pilbara bioregions. Noting that no individuals of this species were recorded within the application area, which will be fenced to prevent inadvertent impacts to nearby flora species, the proposed clearing is not likely to significantly impact on the local extent of this species or on its conservation status.

Based on the habitat types within the Study Area, it is also considered that three additional priority flora species may occur, being; *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) (Priority 1), *Eremophila forrestii* subsp. *viridis* (Priority 3) and *Goodenia nuda* (Priority 4) (Phoenix, 2017; Phoenix, 2018). However, these species were not identified within the larger Study Area during either survey.

As discussed under Principle (d), according to available datasets, there are no threatened ecological communities (TEC) recorded within the local area, and the application area is not considered to be representative of any known TEC's (Phoenix, 2017; Phoenix, 2018).

According to available datasets, there is one priority ecological community (PEC) recorded within the local area, known as the Tanpool land system (Priority 1) located approximately 40 kilometres east of the application area. This PEC is described as a highly restricted land system that occurs between Pannawonica and Onslow, consisting of stony plains and low ridges of sandstone and other sedimentary rocks supporting hard spinifex grasslands and snakewood shrublands (DBCA, 2019a). Survey 2 did not identify any PECs within the larger Study Area (Phoenix, 2018) and the application area is not considered to be representative of this community. Noting this, the application area is not likely to comprise of any PECs.

As discussed under Principle (b), the proposed clearing provides suitable habitat for seven species of conservation significant fauna. However, noting that none of these species were recorded within the Study Area during a fauna survey, and the extent of surrounding habitat (99 per cent vegetative cover within the local area) of which a large portion appears to be consistent with the application area, the proposed clearing is not likely to comprise significant fauna habitat. To minimise direct impacts to the Maryan's keeled slider, western pebble-mound mouse, and short-tailed mouse (which may be utilising the application area at the time of clearing), the applicant will be required to undertake slow progressive directional clearing to allow fauna to move into adjacent habitat ahead of the clearing activity.

One introduced flora species *_Cenchrus ciliaris_* (buffel grass) was recorded within the Study Area (Phoenix, 2017; Phoenix, 2018). DBCA has advised that "this species is rated as a rapidly invasive species with high ecological impact in the Pilbara region, and therefore it is critical that clearing and associated disturbance activities do not spread or increase the occurrence of this weed" (DBCA, 2019b). Appropriate weed management practices will assist in minimising the spread of this weed into adjacent native vegetation as a result of clearing.

Given that the application area includes suitable habitat for conservation significant fauna and contains a priority flora species, the proposed clearing may comprise a high level of biodiversity and may be at variance to this Principle. It is acknowledged that the values present within the application area also occur within the immediate vicinity, and may occur throughout the larger ex Mt Minnie Pastoral Station (comprising approximately 110,000 hectares). Therefore, it is considered that the proposed clearing is not likely to have a significant impact on the level of biodiversity in the local area, and will not lead to an unacceptable risk to the environment.

**(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 not likely to be at variance to this Principle**

Survey 1 identified two fauna habitat types within the application area, being (Phoenix, 2017):

- Mosaic of hummock grassland and shrubland on plain (comprising approximately 61.46 hectares of the application area), which is described as a mosaic of hummock grassland and shrubland vegetation dominated by *Acacia* and *Grevillea* species on varying sandy to clay-loam and gravelly substrates. The vegetation consisted of scattered areas of mixed shrub cover ranging from 1 to 3 metres over mixed smaller shrubs and hummock grasses and areas dominated by patches of immature and mature *Triodia* grasses. The habitat occurred predominantly in the western half of the Study Area and is well represented beyond the boundary of the Study Area; and
- Shrubland on sand dune (comprising approximately 9.2 hectares of the application area), which is described as mixed shrubland on sand dune habitat, often dominated by *Acacia* and *Grevillea* species to 3 metres over mixed smaller shrubs and mixed hummock and tussock grasses with large open areas of exposed dune. This habitat predominantly occurs along the eastern border of the Study Area and consisted of a single dune system running parallel to Onslow Road.

Survey 1 incorporated active fauna searches, avifauna surveying, bat echolocation and night parrot call recordings, opportunistic records and bilby survey plots. Eight level 1 terrestrial fauna sites were surveyed within the Study Area, which covered all recorded fauna habitats. With regard to the active searches, these were undertaken at each of the eight level 1 fauna survey sites and primarily targeted diurnal herpetofauna and mammals from direct sightings and secondary evidence. Additional searches were undertaken in any observable microhabitats considered likely to support mammals, reptiles and amphibians (Phoenix, 2017).

Survey 1 determined that the species depicted in Table 1 below, have the potential to occur within the larger Study Area, based on the suitability of habitat (Phoenix, 2017) :

**Table 1. Fauna species with potential to occur within the application area (Phoenix, 2017).**

| Name and conservation status | Likelihood of occurrence | Summary of records and occurrence | Closest record to the application area |
|---|---|---|---|
| Western pebble-mound mouse (*Pseudomys chapmani*) (Priority (P) 4) | Possible | May occur in areas where suitable stony or gravelly substrates providing suitable pebbles are present; however, this habitat is sparse within the Study Area. Species often recorded in areas of low undulating topography and gentle stony slopes throughout most of its range. | Approximately 19 kilometres northwest. |
| Short-tailed mouse (*Leggadina Lakedownensis*) (P4) | Likely | Likely to occur throughout the Study Area where suitable vegetation cover is present. | Approximately 19 kilometres northwest. |

| | | | |
|---|---|---|---|
| Grey Falcon (*Falco hypoleucos*) (state listed as Vulnerable) | Possible | May occasionally occur within Study Area to forage, though unlikely to nest due to the absence of suitable tall nesting structures. | Approximately 41 kilometres south-southeast |
| Night parrot (*Pezoporus occidentalis*) (state listed as Critically Endangered) | Possible | Species habitat preferences poorly known; however, may occur in areas where suitable vegetation present to forage or nest, particularly areas with mature *Triodia* which may be used for nesting. | Approximately 31 kilometres north-northwest. |
| Peregrine falcon (*Falco peregrinus*) (state listed as other specially protected fauna) | Possible | May occasionally occur within the Study Area to forage, though unlikely to nest due to the absence of suitable nesting sites. | Approximately 18 kilometres north-northwest. |
| Maryan's keeled slider (*Lerista planiventralis maryani*) (P1) | Likely | Likely to occur in areas where loose sandy substrates and leaf litter are present within the Study Area. | Approximately 32 kilometres north-northwest |
| Fork-tailed swift (*Apus pacificus*) (Migratory species protected under international agreement) | Likely | Likely to occasionally occur above the study area to forage; however, unlikely to land or nest within the Study Area. | Approximately 17.5 kilometres west-northwest |

The grey falcon, peregrine falcon and fork tailed swift are highly mobile avian fauna species with large home ranges. While these species may occasionally visit the application area to forage, it is unlikely to provide significant habitat for these species noting the availability of extensive suitable foraging habitat within the surrounding local area.

Current guidance identifies broad habitat requirements for the night parrot as including areas of old-growth spinifex (*Triodia*) for roosting and nesting, together with foraging habitats that are likely to include various native grasses and herbs, and may or may not contain shrubs or low trees (Phoenix, 2017). Noting that scattered small patches of mature spinifex were identified throughout parts of the Study Area (Phoenix, 2017), the application area may provide suitable habitat for this species. However targeted acoustic call recordings conducted during the fauna survey did not detect this species, therefore, the proposed clearing is not likely to impact on significant habitat for this species.

There is little documented about the habitat and ecology of the Maryan's keeled slider. However, noting the closest record of this species, and that it was not recorded during the fauna survey which included active searches in observable microhabitats considered likely to support reptiles (Phoenix, 2017), the proposed clearing is not likely to impact on significant habitat for this species.

DBCA provided advice regarding impacts to the short-tailed mouse and the western pebble-mound mouse and advised that "given the lack of field recorded observations, the scale of the clearing and the fact that the Study Area does not occur at the range limits of either of these species, the proposed clearing does not appear likely to cause a significant impact on either species at the species level" (DBCA, 2019b). Noting this advice, that evidence of these species was not recorded during the fauna survey, which included active searches in observable microhabitats considered likely to support reptiles, and the availability of extensive suitable foraging habitat within the surrounding area, the proposed clearing is not likely to impact on significant habitat for these species.

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

DBCA did however note that the proposed clearing "could impact on the short-tailed mouse at the individual or family group level" (DBCA, 2019b). To minimise direct impacts to any individuals of the Maryan's keeled slider, short-tailed mouse or western pebble-mound mouse that may be utilising the application area at the time of clearing, the applicant will be required to undertake slow progressive directional clearing to allow fauna to move into adjacent habitat ahead of the clearing activity.

**(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 to this Principle**

According to available datasets there are no threatened flora species recorded within the local area. The two flora surveys did not identify any threatened flora species within the larger Study Area, and no additional threatened flora species were identified as potentially occurring within the application area based on habitat suitability (Phoenix, 2017; Phoenix, 2018).

Given the above, the vegetation within the application area is not likely to include or be necessary for the continued existence of threatened flora, therefore the proposed clearing is not likely to be at variance to 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 to this Principle**

According to available datasets there are no TEC's recorded within the local area. The vegetation types recorded within the application area are not considered to be representative of any TEC's, and the flora surveys did not identify any TEC's within the larger Study Area (Phoenix, 2017; Phoenix, 2018).

Given the above, the vegetation within the application area is not likely to comprise the whole or part of, or be necessary for the maintenance of a TEC, therefore the proposed clearing is not likely 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 not likely to be at variance to 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 which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

As indicated in Table 1 below, the application area is mapped as Beard vegetation association 98 which has approximately 100 per cent of its pre–European vegetation remaining in the Carnarvon bioregion (Government of Western Australia, 2018). The Carnarvon Bioregion retains approximately 99.7 per cent of its pre-European vegetation.

The local area is highly vegetated and retains approximately 99 per cent (998,903 hectares) native vegetation cover (taking into account the coastal water mark). The application area represents approximately 0.007 per cent of the remaining native vegetation within the local area and the proposed clearing would reduce the extent of native vegetation within the local area to approximately 998,832 hectares.

While the application area contains three individuals of a Priority 1 flora species and suitable habitat for conservation significant fauna, noting that the mapped vegetation type, IBRA bioregion and local area retain considerably more than 30 per cent of their vegetation extents respectively, it is considered that the application area is not within an area that has been extensively cleared.

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

**Table 2: Vegetation extents**

| | Pre-European | Current Extent | Remaining | Current Extent in DCBA Managed Lands |
|---|---|---|---|---|
| | (ha) | (ha) | (%) | (%) |
| **IBRA Bioregion*** | | | | |
| Carnarvon | 8,382,890 | 8,360,801 | 99.7 | 12.2 |
| **Beard vegetation association in Bioregion** | | | | |
| 98 | 221,820 | 221,812 | 100 | 25 |

**(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 to this Principle**

According to available databases, there are no watercourses or wetlands mapped within the application area. The closest hydrological feature to the application area is a non-perennial lake located approximately 2.5 kilometres away.

The flora surveys did not identify any hydrological features or riparian vegetation within the application area (Phoenix, 2017; Phoenix, 2018), noting this, and the distance to known wetlands or watercourses, it is considered that the vegetation within the application area is not likely to be growing in, or in association with a watercourse or wetland.

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

The soils within the application area have been mapped at a regional scale as the Giralia Land System (comprises approximately 60 per cent of the application area) and Uaroo Land System (comprises approximately 40 per cent of the application area).

The mapped sandy soils outlined within Section 2 of this report are highly permeable, and therefore the proposed clearing is not likely to result in water erosion or waterlogging, particularly noting the absence of wetlands or watercourses within the application area.

The mapped soils are however prone to wind erosion. Noting the extent of clearing proposed, there is the potential for wind erosion to cause land degradation should the surface soils within the application area be exposed post clearing for an extended duration.

Given the above, the proposed clearing may result in appreciable land degradation via wind erosion and may be at variance to this Principle.

To manage the generation of excessive dust as a result of wind erosion during clearing activities, the applicant has advised that a 10,000 litre water cart will be utilised to stabilise soils. It is considered that wind erosion may be further minimised by the utilisation of cleared areas within an appropriate period following clearing activities. Therefore, to minimise the risk of wind erosion, the applicant will be required to undertake construction works over the cleared areas within three months of the date of clearing, which will prevent the prolonged exposure of bare sandy soils. It is considered that these measures will adequately minimise the risk of wind erosion.

**(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 to this Principle**
According to available databases, the closest conservation area to the application area is the Cane River Conservation Park, which is located approximately 26 kilometres north-west of the application area.

The application area is located within the former Mt Minnie pastoral lease. This former pastoral lease is proposed for future addition to the Cane River Conservation Park. The former Department of Parks and Wildlife (2014) provided written support for the location of the proposed waste facility at this site, noting that the site of proposed works (being the application area) will be excluded from this reserve addition.

One introduced flora species **Cenchrus ciliaris* (buffel grass) was recorded in one location across the study area (Phoenix, 2017). DBCA has advised that "this species is rated as a rapidly invasive species with high ecological impact in the Pilbara region, and therefore it is critical that clearing and associated disturbance activities do not spread or increase the occurrence of this weed" (DBCA, 2019b). There is a risk that the proposed clearing will increase the risk of spreading this weed into surrounding vegetation proposed for future conservation, which may therefore impact on the environmental values of what will be the larger Cane River Conservation Park.

Given the above, the proposed clearing may be at variance to this Principle.

Appropriate weed management practices will assist in minimising the spread of this weed into adjacent native vegetation as a result of clearing.

**(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 to this Principle**
As discussed under Principle (f), there are no watercourses or wetlands mapped within the application area, and none were identified during flora surveys of the application area (Phoenix, 2017; Phoenix, 2018). The closest water body is a non-perennial lake located approximately 2.5 kilometres from the application area.

Noting the distance to the closest hydrological feature, and extent of surrounding native vegetation which provides an extensive buffer to the wetlands and watercourses within the local area, the proposed clearing is not likely to cause deterioration in the quality of surface water.

Groundwater salinity within the application area has been mapped as fresh at between 3000 and 7000 milligrams per litre total dissolved solids, which is considered to be moderately saline. Given the extensive vegetative cover surrounding the application area, the proposed clearing is unlikely to lead to a perceptible rise in the water table or increase in groundwater salinity levels.

Given the above, the proposed clearing is not likely to be at variance to 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 to this Principle**
Mean annual rainfall at the locality of the application area is approximately 400 millimetres. The Carnarvon bioregion has a semi-arid to arid climate, receiving the majority of its rainfall during winter months.

As discussed under Principle (g), the two broad Land Systems mapped over the application area (Giralia System and Uaroo System) are predominately described as sandy plains, and as such are considered to be highly permeable. Noting this, the moderate mean annual rainfall described above, the lack of wetlands or watercourses mapped within the application area, and the extensively vegetated surrounding landscape, it is considered that the proposed clearing is unlikely result in an increase in the incidence or intensity of flooding

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

**Planning instruments and other relevant matters.**

The Shire of Ashburton proposes to clear 70.66 hectares of native vegetation within Lots 550 and 551 on Deposited Plan 414367, Talandji, for the purpose of constructing the Pilbara Regional Waste Management Facility. The Pilbara Regional Waste Management Facility is to be located on the former Mt Minnie pastoral lease. The applicant has advised that the facility will serve the wider Pilbara region, including the mining, industrial and gas sectors (Shire of Ashburton, 2019a).

The clearing is proposed to be undertaken progressively throughout the lifespan of the facility (Shire of Ashburton, 2019b). Specifically, approximately 31.86 hectares of the total 70.66 hectares of native vegetation under application would be required for Phase 1 of the project. The applicant advised that clearing will be undertaken using a scraping technique to remove the minimum volume of soil required in order to clear the vegetation, with all vegetation to be stockpiled for rehabilitation purposes, including revegetation of the capped landfill (Shire of Ashburton, 2019b).

The application area is within the footprint of the area approved for clearing under Clearing Permit CPS 7758/1. The Permit was granted for hydrological and geotechnical investigations associated with the proposed waste facility.

The application area is located within the Pilbara Groundwater and Surface Water areas which are proclaimed areas under the *Rights in Water and Irrigation Act 1914* (RIWI Act). The Applicant has been granted two water licences under the RIWI Act:

- Instrument GWL202784(1), granted under section 26D of the RIWI Act to construct as non-artesian wells; and
- Instrument GWL202785(1), granted under section 5C of the RIWI Act, to take 20,000kl annually for the purpose of dust suppression and construction purposes.

The applicant has also applied to the Department of Water and Environmental Regulation (DWER) for an *Environmental Protection Act 1986* works approval (reference number W6225/2019/1) for the proposed waste facility. DWER is yet to make a determination on the works approval application.

The clearing permit application was advertised on DWER's website on 29 March 2019, inviting submissions from the public within a 21 day period. No submissions have been received.

No Aboriginal Sites of Significance have been recorded within the application area.

## 4. References


Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

Department of Biodiversity, Conservation and Attractions (DBCA) (2019a) Priority Ecological Communities for Western Australia, Version 28.

Department of Biodiversity, Conservation and Attractions (DBCA) (2019b) Flora and fauna advice for Clearing Permit Application CPS 8395/1 (DWER Ref: A1787617).

Department of Parks and Wildlife (2014) Advice concerning the location of the proposed waste facility (DWER Ref A1518992).

Government of Western Australia (2019) 2018 South West Vegetation Complex Statistics. Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth, https://catalogue.data.wa.gov.au/dataset/dbca

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Phoenix Environmental Sciences (2017) Flora and vegetation survey and terrestrial fauna survey for the Pilbara Regional Waste Management Facility. Prepared for Talis Consultants (DWER Ref: A1551445).

Phoenix Environmental Sciences (2018) Detailed flora and vegetation survey for the Pilbara Regional Waste Management Facility. Prepared for Talis Consultants (DWER Ref: A1769189).

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 Ashburton (2019a) Pilbara Waste Management Facility, retrieved 28 May 2019 from https://www.ashburton.wa.gov.au/services/waste-management/pilbara-waste-management-facility

Shire of Ashburton (2019b) Information in support of clearing permit application CPS 8395/1 (DWER Ref A1769189).

Talis Consultants (2019) Additional Information to Support Clearing Permit Application CPS 8395/1, received 31 July 2019. DWER Ref A1812943.


**GIS Databases:**

- Aboriginal Sites of Significance
- Beard vegetation associations
- Department of Biodiversity Conservation and Attractions, Tenure
- Hydrology, linear
- IBRA Australia
- Remnant vegetation
- SAC Bio datasets (accessed June 2019)
- Soils, statewide