GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8820/1
Permit Holder:	Shire of Broome
Duration of Permit:	From 9 September 2020 to 9 September 2025

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 gaining access to undertake hydrogeological and geotechnical investigations to determine the suitability for the development of a landfill facility.

2. Land on which clearing is to be done
Lot 593 on Deposited Plan 71791 (Crown reserve 25716), Waterbank
Lot 595 on Deposited Plan 71791 (Crown reserve 25716), Waterbank
Lot 990 on Deposited Plan 414194 (Crown reserve 25716), Waterbank
McGuigan Road Reserve (PINs 11731070, 11731071), Waterbank
Broome-Cape Leveque Road Reserve (PIN 11731068), Waterbank
Lot 1544 on Deposited Plan 75840 (Pastoral lease N49900), Roebuck
Great Northern Highway Road Reserve (Lot 425 on Plan 218390) (PIN 11229938), Roebuck

3. Area of Clearing
The Permit Holder must not clear more than 5.5 hectares of native vegetation within the area cross-hatched yellow on attached Plan 8820/1a and Plan 8820/1b.

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

PART II – MANAGEMENT CONDITIONS

5. 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.

6. Fauna management
The permit holder must conduct clearing activities in a slow, progressive manger to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

7. Flora management

(a) Where *threatened flora* or *priority flora* are identified within the areas cross-hatched yellow on attached Plan 8820/1a and 8820/1b authorised under this Permit in accordance with the "Broome Regional Resource Recovery Park Detailed Flora and Vegetation Assessment" prepared for Talis Consultants by Spectrum Ecology in July 2020, the Permit Holder shall ensure that:
  (i) no clearing of, or within 50 metres of, identified *threatened flora* occurs; and
  (ii) no clearing of identified *priority flora* occurs; and
  (iii) no clearing within 20 metres of identified *priority flora* occurs, with the exception of five *Terminalia kumpaja* individuals located at coordinates 122.27289, -17.87100, where clearing may occur within 20 metres of these individuals.

(b) Prior to undertaking any clearing, the location of each *threatened flora* and *priority flora*, identified under condition 7(a), either as the location of individual plants, or where this is not practical, the areal extent of the population and an estimate of the number of plants, and the buffer distances to *threatened flora* and *priority flora* individuals specified in conditions 7(b)(i) and 7(b)(iii) of this permit are to be documented using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees, and where practicable, buffer distances are to be demarcated through flagging.

8. Priority ecological community management

The permit holder must clear no more than 0.03 hectares of the 'Relict dune system dominated by extensive stands of Mangarr *Sersalisia* (formerly *Pouteria*) *sericea*' priority ecological community within the area cross-hatched red on the attached Plan 8820/1c.

9. Weed management

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) shall only move soils in *dry conditions*;
(c) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
(d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

10. Retain vegetation material and topsoil, Revegetation and Rehabilitation

The Permit Holder shall:
(a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.

(b) at an optimal time within 12 months following completion of geotechnical and hydrogeological investigations, *revegetate* and *rehabilitate* areas not required for future scheduled and approved development, by:
  (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land;
  (ii) ripping the ground on the contour to remove soil compaction;
  (iii) backfill test pits with excavated material; and
  (iv) laying the vegetative material and topsoil retained under condition 10(a) on the cleared area(s).

PART III – RECORD KEEPING AND REPORTING

11. 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 5 of this Permit; and
(vi) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 9 of this Permit.

(b) In relation to flora management pursuant to condition 7 of this Permit:
(i) the location of each *threatened flora* or *priority flora* species recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
(ii) the species name of each *threatened flora* or *priority flora* species identified; and
(iii) records of the buffer distances maintained around each *threatened flora* or *priority flora* species recorded within Plan 8820/1(a) and 8820/1(b).

(c) In relation to *priority ecological community* management pursuant to condition 8 of this Permit:
(i) If the location of *priority ecological communities* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
(ii) the name of each *priority ecological community* identified; and
(iii) the methodology, used to survey and identify priority ecological communities; and
(iv) the extent of the *priority ecological communities* shown on a map.

(d) In relation to the *revegetation and rehabilitation* of areas pursuant to condition 10 of this Permit:
(i) the location of any areas revegetated and rehabilitated, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
(ii) a description of the revegetation and rehabilitation activities undertaken; and
(iii) the size of the area revegetated and rehabilitated (in hectares).

12. 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 11 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 9 June 2025, the Permit Holder must provide to the *CEO* a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

DEFINITIONS

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

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

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.

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

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

flora and vegetation survey means a field-based investigation, including a review of established literature, of the biodiversity of flora and vegetation of the Permit Area, focusing on habitat suitable for priority or threatened ecological communities. The survey should include sufficient surrounding areas to place the Permit Area into local context.

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.

priority ecological community/ies mean those ecological communities described as priority classes 1, 2, 3, 4 or 5 in the *Department of Parks and Wildlife's Priority Ecological Communities for Western Australia* (as amended).

priority flora means those plant taxa described as priority flora classes 1, 2, 3 or 4 in the Department of Biodiversity, Conservation and Attractions *Declared Rare and Priority Flora List for Western Australia* (as amended).

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.

threatened flora means those plant taxa listed as threatened flora under the *Biodiversity Conservation Act 2016*.

weed/s means any plant -

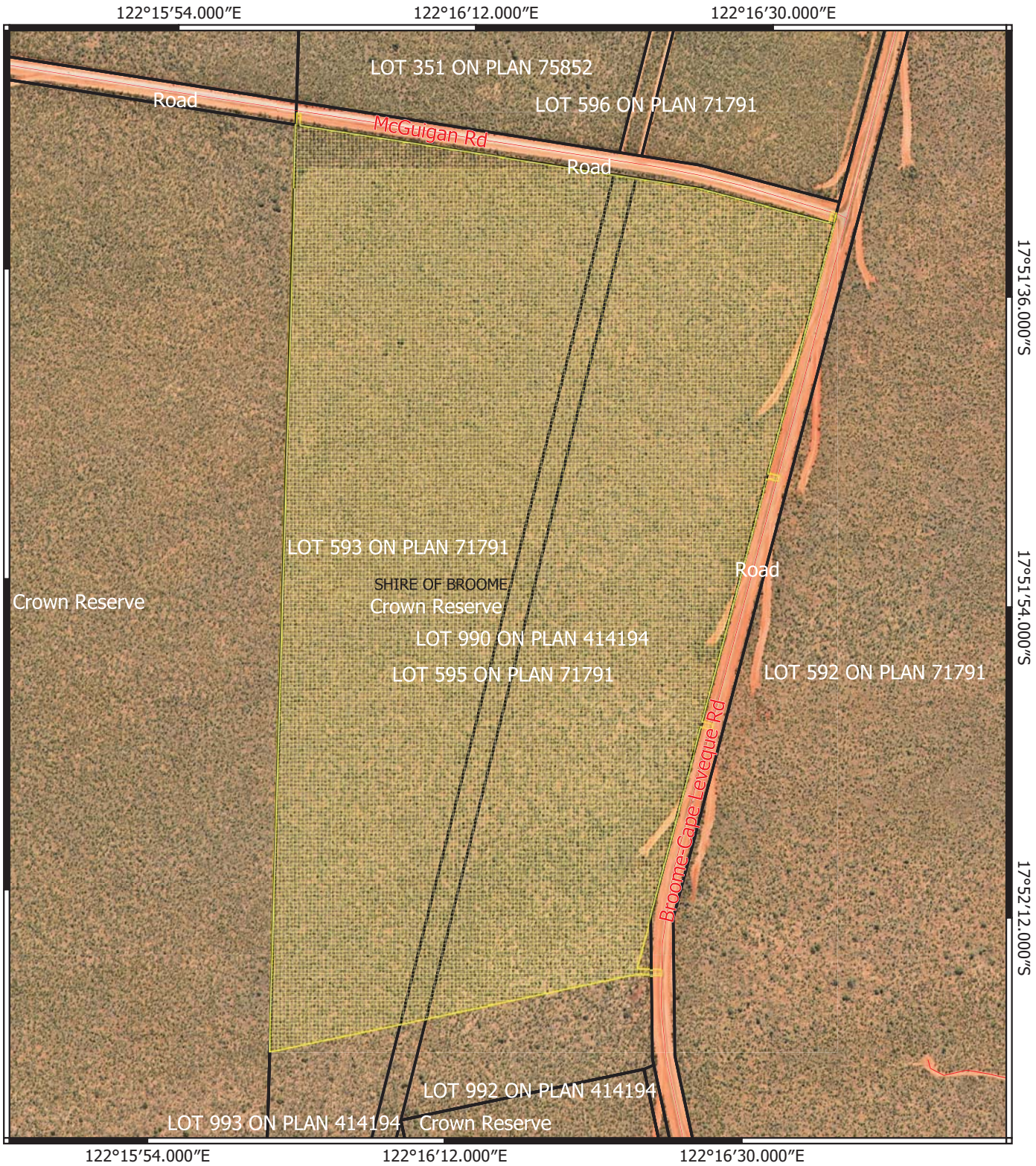
(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
(c) not indigenous to the area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

Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

14 August 2020

Plan 8820/1a



Legend

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- Road Centrelines
- Local Government Authorities
- Cadastre - LGATE 218

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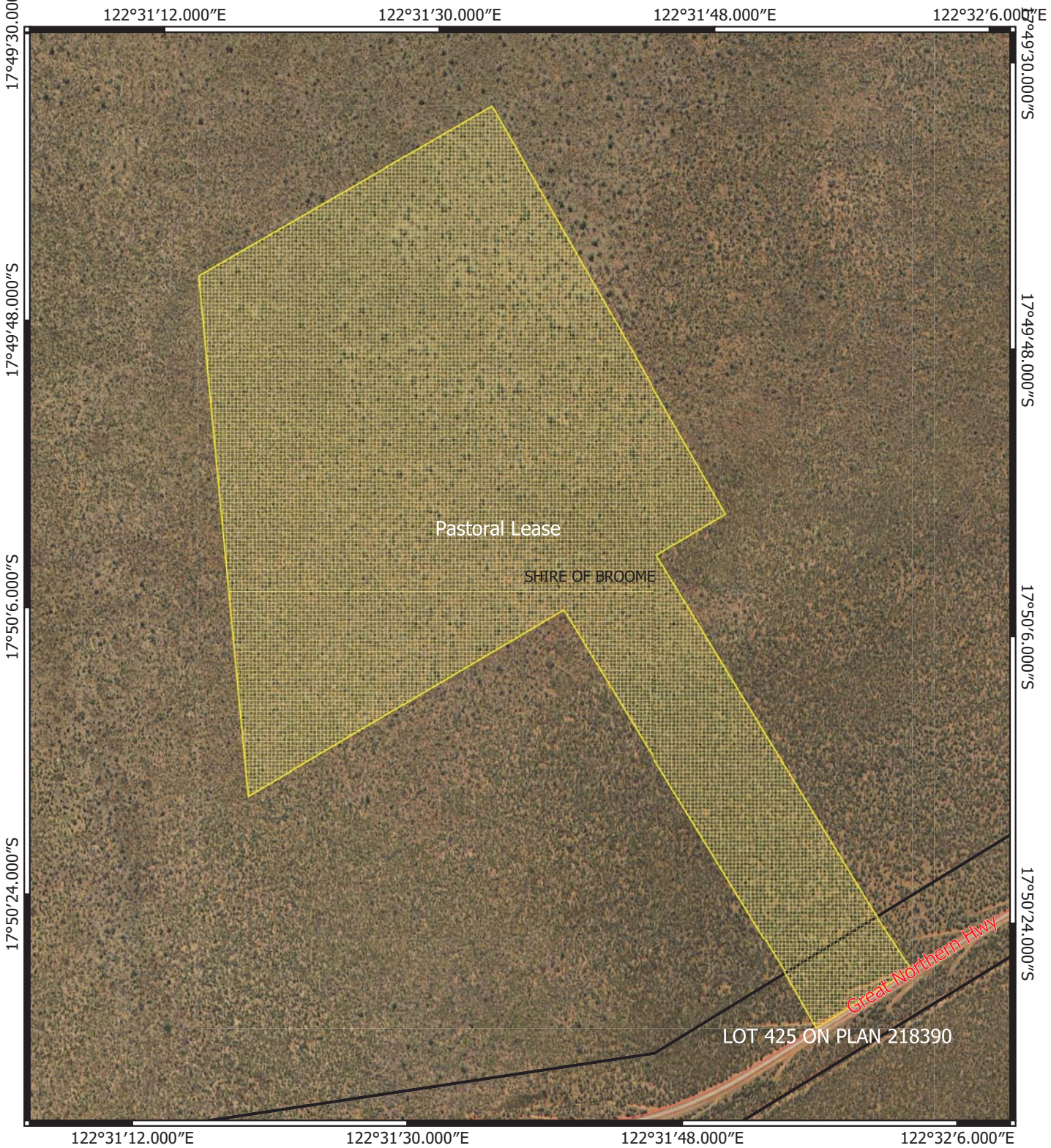
Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8820/1b



Legend

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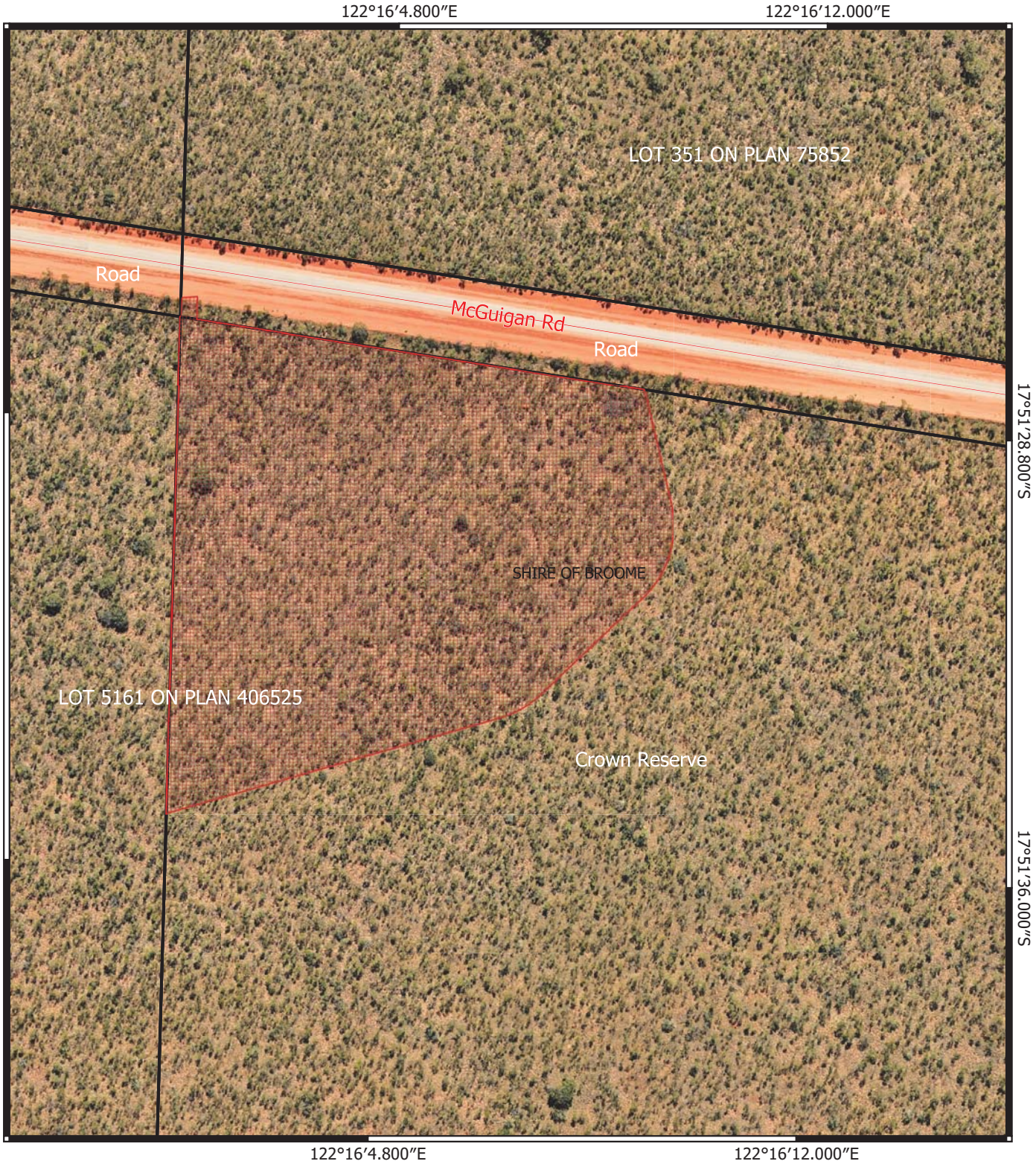
GOVERNMENT OF WESTERN AUSTRALIA

Plan 8820/1c



Legend

- CPS subject to conditions
- Road Centrelines
- Local Government Authorities
- Cadastre - LGATE 218

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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.:	CPS 8820/1
Permit type:	Purpose Permit

1.2. Applicant details

Applicant's name:	Shire of Broome
Application received date:	20 February 2020

1.3. Property details

Property:	Lot 593 on Deposited Plan 71791 (Crown reserve 25716), Waterbank Lot 595 on Deposited Plan 71791 (Crown reserve 25716), Waterbank Lot 990 on Deposited Plan 414194 (Crown reserve 25716), Waterbank McGuigan Road Reserve (PINs 11731070, 11731071), Waterbank Broome-Cape Leveque Road Reserve (PIN 11731068), Waterbank Lot 1544 on Deposited Plan 75840 (Pastoral lease N49900), Roebuck Great Northern Highway Road Reserve (Lot 425 on Plan 218390) (PIN 11229938), Roebuck
Local Government Authority:	Shire of Broome
Localities:	Waterbank and Roebuck

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
5.5	0	Mechanical Removal	Geotechnical investigations

1.5. Decision on application

Decision on Permit Application:	Granted
Decision Date:	14 August 2020
Reasons for Decision:	The clearing permit application was received on 20 February 2020 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and it has been concluded that the proposed clearing may be at variance with principle (a) and is not likely to be at variance with any of the remaining clearing principles. The Delegated Officer determined that the vegetation within the application area contains priority flora individuals and habitat. The Delegated Officer determined that potential impacts to priority flora can be managed through flora management conditions imposed on the permit. This will ensure no priority flora individuals identified are cleared and a 20 metre buffer is established around identified priority flora. The Delegated Officer determined that the proposed clearing is not likely to impact significant habitat for conservation significant fauna, however the application area is likely to be utilised by conservation significant fauna and other fauna. The permit requires that all clearing activities be undertaken in a slow and progressive manner to mitigate potential impacts to fauna. The Delegated Officer determined that the proposed clearing may increase the spread of weeds within adjacent remnant vegetation and conservation areas. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed and dieback management measures. The Delegated Officer determined that given the investigative purpose of the clearing, areas not required for scheduled and approved development in the future will be required to be rehabilitated. In determining to grant a clearing permit subject to conditions, the Delegated Officer considered that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description

The application is for the proposed clearing of 5.5 hectares of native vegetation within a permit boundary of 220 hectares for the purpose of gaining access to undertake hydrogeological and geotechnical investigations to determine the suitability for the development of a landfill facility (Figure 1). The extent of clearing will be limited to test pits, boreholes and temporary access tracks. The application comprises two areas proposed to be cleared:

- **Site D2 (Application Area 1)** is located within Lot 593 on Deposited Plan 71791 (Crown reserve 25716), Lot 595 on Deposited Plan 71791 (Crown reserve 25716), Lot 990 on Deposited Plan 414194 (Crown reserve 25716), McGuigan Road Reserve (PINs 11731070, 11731071) and Broome-Cape Leveque Road Reserve (PIN 11731068) in Waterbank. The area proposed to be cleared is 2.5 hectares within a permit boundary of 98 hectares.
- **Site G1 (Application Area 2)** is located within Lot 1544 on Deposited Plan 75840 (Pastoral lease N49900) and Great Northern Highway Road Reserve (Lot 425 on Plan 218390) (PIN 11229938) in Roebuck. The area proposed to be cleared is 3 hectares within a permit boundary of 122 hectares.

Vegetation Description

According to available datasets, the vegetation within Application Area 1 and Application Area 2, is mapped within Beard vegetation association 750, described as shrublands, pindan; *Acacia tumida* shrubland with grey box and cabbage gum medium woodland over ribbon grass and curly spinifex (Shepherd et al., 2001). The detailed / targeted flora and vegetation survey identified one vegetation type within both Application Area 1 and Application Area 2. Vegetation Type 1 (V001) is described as *Corymbia greeniana* isolated trees over *Acacia eriopoda* open shrubland over *Chrysopogon fallax* and *Triodia* species, isolated tussock and hummock grasses (Spectrum Ecology, 2020b).

Vegetation Condition

The vegetation condition was determined by the reconnaissance and detailed / targeted flora and vegetation assessments commissioned by the applicant (Spectrum Ecology, 2020b,d). The vegetation condition within Application Area 1 and Application Area 2 was described as excellent (100 per cent) (Keighery, 1994) and weeds were rarely recorded (Spectrum Ecology, 2020b).

Soil type

The soils within the application areas are mapped within two land systems (DPIRD, 2017):

- Yeeda System (335Ye): Red sandplains supporting pindan vegetation with dense acacia shrubs, scattered bloodwood and grey box trees and curly spinifex and ribbon grass.
- Wanganut System (335Wa): Sandplains and linear dunes supporting pindan woodlands with acacias and bloodwoods and curly spinifex- ribbon grass, and broad low-lying swales supporting bloodwood-grey box woodlands with curly spinifex-ribbon grass.

Local Area

The local area referred to in the assessment of this application is defined as a 50 kilometre radius measured from the perimeter of each application area. The local area for Application Area 1 and Application Area 2 comprises approximately 98.5 per cent and 98.9 per cent native vegetation cover, respectively.

Figure 1: Application to clear (blue hatched area)

3. Minimisation and mitigation measures

The applicant initially applied to clear 5.5 hectares of native vegetation within a permit area boundary of approximately 249 hectares. The application area comprised two discrete proposed clearing areas:

- Application Area 1 - the applicant proposed to clear 2.5 hectares within a permit area of approximately 122 hectares
- Application Area 2 - the applicant proposed to clear 3 hectares within a permit area of approximately 127 hectares.

The applicant advised within their application that the location of access tracks were considered to minimise disturbance to vegetation (Shire of Broome, 2020). The supporting documentation provided with the application advised the applicant will minimise disturbance to native vegetation by keeping vehicles and machinery to existing cleared areas, tracking over small vegetation where practicable (to avoid direct clearing), using the shortest possible routes to investigation locations, installing bores and trial pits adjacent to tracks where possible, and modifying tracks, bore holes and trial pits to avoid significant vegetation where possible, and the supervision of site investigations and contractor access by qualified personnel (Talis Consulting, 2019a,b). At the completion of the last bore on each track, the support vehicles and drill rig will traverse back along the established access track to minimise disturbance (Talis Consulting, 2019a,b).

Whilst the proposed area to be cleared (5.5 hectares) remained unchanged throughout the assessment of the application, the applicant amended, and overall reduced, the permit area boundary throughout the assessment. On 8 April 2020, the applicant amended the boundary of the Application Area 2 and confirmed the reduction the permit area from 127 hectares to 95 hectares (Talis Consultants, 2020c). The proposed clearing within the reduced boundary remained unchanged at 3 hectares. This reduced the overall permit area boundary across Application Area 1 and 2 from 249 hectares to 217 hectares (Talis Consultants, 2020c).

On 25 May 2020, the applicant confirmed the extension of the Application Area 2 into the road reserve to provide access to the application area, increasing the Application Area 2 permit area boundary from 95 hectares to 98 hectares (Talis Consultants, 2020d). The area proposed to be cleared within this footprint remained unchanged at 3 hectares (Talis Consultants, 2020d). The above amendments made by the applicant throughout the assessment of the application reduced the overall permit area footprint from 249 hectares to 220 hectares, with the proposed clearing within the footprint remaining unchanged at 5.5 hectares (Talis Consultants, 2020c,d,e).

A reconnaissance flora and vegetation and Level 1 fauna survey assessment was undertaken for Application Area 1 and Application Area 2 and submitted with the application (Shire of Broome, 2020). No conservation significant flora or fauna were recorded during the survey (Spectrum Ecology, 2020d; refer to principle a and b). On 29 April 2020, DWER (2020) requested further information from the applicant, including additional flora and vegetation, and fauna surveys. The applicant completed a detailed / targeted flora and vegetation survey throughout the assessment of the application and identified two Priority 1 and one Priority 3 taxa within the Application Area 1 (spectrum Ecology, 2020b). No threatened flora were recorded in Application Area 1 or Application Area 2. No conservation significant flora were identified in Application Area 2.

On 2 July 2020, the applicant consulted further with DWER regarding the locations of the geotechnical and hydrological investigation program (access tracks, boreholes and trial pits) in relation to conservation significant flora (priority flora) identified within Application Area 1 during the survey (Talis Consultants, 2020h). At this time, no priority flora were proposed to be cleared, however, components of the geotechnical investigations associated with the clearing (access tracks and trial pits) were proposed within 20 metres of occurrences of priority flora identified (Figure 2). DWER requested the applicant applies further avoid and minimise mitigation measures.

On 7 July 2020, the applicant confirmed that additional avoid and minimise measures had been applied to priority flora and their habitat (Talis Consultants, 2020g). The geotechnical and hydrogeological investigation locations have been reconfigured to avoid clearing within 20 metres of most priority flora (Talis Consultants, 2020g; Figure 2). The permit includes flora management conditions to mitigate potential impacts to conservation significant flora individuals identified during the detailed / targeted flora and vegetation survey. The permit includes a flora management condition to ensure no clearing of priority flora occurs. No clearing is permitted within 20 metres of priority flora identified, with one exception as stipulated within the permit (refer to principle a).

Talis Consultants (2020g) advised that the trial pit locations for both Application Area 1 and Application Area 2 have been strategically chosen to focus the intrusive investigations on the ideal locations for the development of a landfill, and the following considerations were taken into account for both application areas (Talis Consultants, 2020g):

- Due to the topography of the site, the landfill has been located at the lowest possible level, including south west corner of Application Area 1 and south west corner of Application Area 2. This provides advantages for the stormwater management system to be established at the low point of both application areas and allows the landfill to maximise any future expansion required to the north for both application areas.
- The applicant has maximised the setback from the road by:
    - positioning the proposed landfill location within the south west corner of Application Area 1.
    - positioning the proposed landfill location approximately one kilometre from the Great Northern Highway within Application Area 2.

Talis Consultants (2020g) advised that in making these adjustments, considerations were given to the principles of avoidance of unnecessary clearing and minimising impacts as far as practicable. The geotechnical and hydrogeological investigation routes, particularly at Application Area 1, have been adjusted to avoid disturbance within a 20 metre buffer as practicable (Talis Consultants, 2020g; Figure 2). The monitoring bores are required to be close to the boundary of the site, thereby minimising the need to clear for access tracks and within priority flora buffers (Talis Consultants, 2020g).

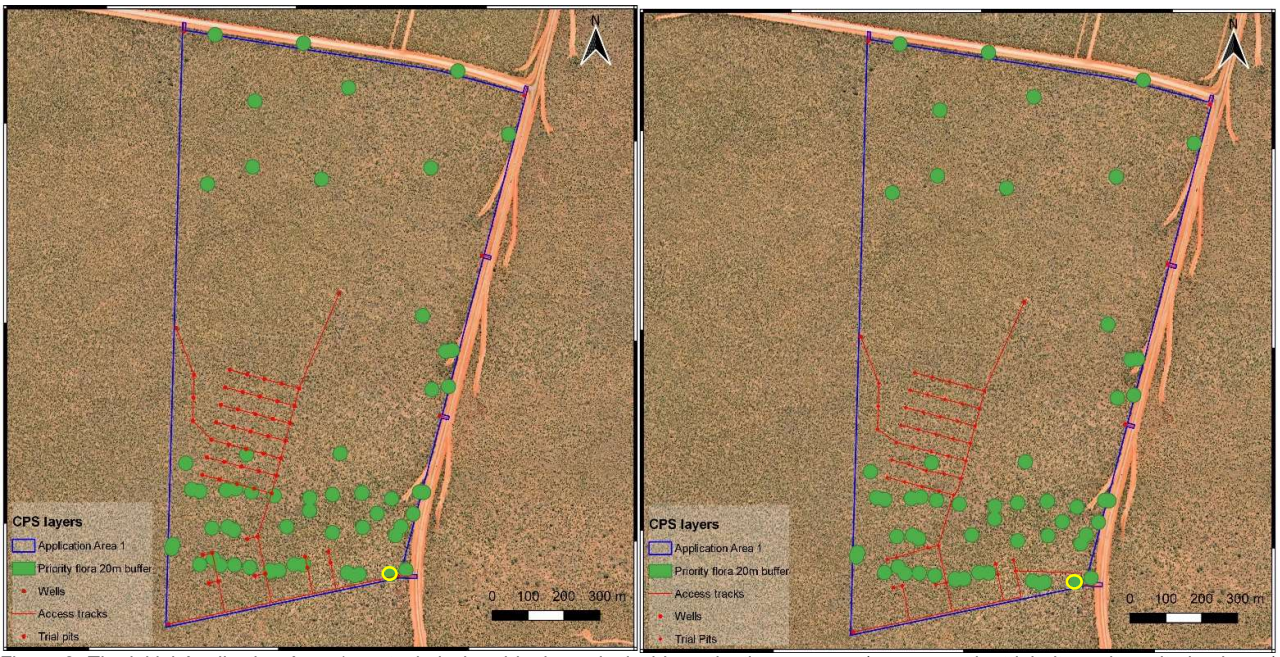

Figure 2. The initial Application Area 1 geotechnical and hydrogeological investigation program (access roads, trial pits and monitoring bores) intersecting 20-metre buffers around priority flora, prior to applying additional avoidance and mitigation measures (left). The final Application Area 1 geotechnical and hydrogeological investigation program configuration avoiding all identified priority flora buffers with one exception (shown as a yellow circle) (right).

4. 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 with this principle

The applicant engaged Spectrum Ecology to conduct a reconnaissance flora and Vegetation and Level 1 terrestrial fauna survey at both application areas Site D2 (Application Area 1) and Site G1 (Application Area 2) to support the application (Spectrum Ecology, 2020d). The surveys were conducted on 26 November 2019. The flora and vegetation survey was consistent with the Environmental Protection Authority (EPA; 2016a) technical guidance for flora and vegetation surveys (Spectrum Ecology, 2020d). The field survey timing was considered seasonally appropriate for a flora and vegetation survey conducted in the

Kimberley Botanical Province (Spectrum Ecology, 2020d). However, conditions were dry and the wet season preceding the survey received less than half the median rainfall, affecting availability of sufficient floristic material to conclusively identify some species (Spectrum Ecology, 2020d). The Level 1 terrestrial fauna survey was conducted for the purpose identifying the presence of conservation significant fauna species and/or their habitat (Spectrum Ecology, 2020d). The survey was conducted in accordance with the EPA (2016b,c) technical guidance for terrestrial fauna surveys and for sampling methods for terrestrial vertebrate fauna (Spectrum Ecology, 2020d).

Talis Consultants commissioned Spectrum Ecology on behalf of the applicant to conduct additional biological surveys within Application Area 1 and Application Area 2. A detailed / targeted flora and vegetation was undertaken between 19 and 23 April 2020 (Spectrum Ecology, 2020b). A Level 2 terrestrial fauna survey was conducted between 15 and 24 April 2020 (Spectrum Ecology, 2020c). The detailed / targeted flora and vegetation survey was undertaken to identify the flora species present, detect potential conservation significant flora species, and classify vegetation communities (Spectrum Ecology, 2020a,b). The survey timing and seasonal conditions were appropriate for the detection of flora or vegetation communities that may be of conservation significance and was consistent with the EPA (2016a) technical guidance for flora and vegetation surveys (Spectrum Ecology, 2020a,b). The Level 2 terrestrial fauna survey was conducted to further confirm the presence or absence of conservation significant fauna within the application area (Spectrum Ecology, 2020a,c). The survey was consistent with the EPA (EPA, 2016b,c) technical guidance for terrestrial fauna surveys and for sampling methods for terrestrial vertebrate fauna (Spectrum Ecology, 2020c).

Application Area 1

The flora and vegetation surveys identified one vegetation type (V001) within Application Area 1, described as *Corymbia greeniana* isolated trees over *Acacia eriopoda* open shrubland over *Chrysopogon fallax* and *Triodia* species isolated tussock and hummock grasses (Spectrum Ecology, 2020a,b). The vegetation within the application area was in excellent (Keighery, 1994) condition (100%) and weeds were rarely recorded (Spectrum Ecology, 2020b).

No threatened or priority flora were recorded during the reconnaissance flora and vegetation survey (Spectrum Ecology, 2020d). *Corymbia paractia* (Priority 1) was considered highly likely to occur within the Application Area 1 due to recent records from other recent surveys, adjacent to the north and east of the application area boundary and with consideration to geology and presence of associated vegetation (Spectrum Ecology, 2020b). The survey could not determine the presence of this species. Whilst the survey was undertaken during the optimal flowering time for the species, dry seasonal conditions and below average rainfall may have contributed to the availability of sufficient floristics material at the time of the survey (Spectrum Ecology, 2020d). Whilst not recorded during the survey, five other priority flora were considered to have a high likelihood of occurrence in the application area, including *Jacquemontia* sp. *Broome* (Priority 1) known from 14 records in the local area, *Glycine pindanica* (Priority 3) known from 39 records in the local area, *Polymeria* sp. *Broome* (Priority 3) known from 7 records in the local area *Seringia katatona* (Priority 3) known from five records in the local area and *Terminalia kumpaja* (Priority 3), known from nine records in the local area (Spectrum Ecology, 2020d; Western Australian Herbarium,1998-).

The detailed / targeted flora and vegetation survey undertaken in April 2020 to support the application did not record any threatened flora taxa (Spectrum Ecology, 2020b). Three priority flora taxa were recorded within or adjacent to Application Area 1, including 14 *Corymbia paractia*, 80 *Terminalia kumpaja* and 715 *Jacquemontia* sp. *Broome* (A.A. Mitchell 3028) (Spectrum Ecology, 2020b). Other significant flora taxa assessed in the desktop were thoroughly searched for but were not found within Application Area 1 or Application Area 2 (Spectrum Ecology, 2020b). The priority flora within the application area were found to have a low local and regional significance (Spectrum Ecology (2020b). Following completion of the survey and during the assessment of the application, the applicant applied avoidance and mitigation measures and reconfigured the geotechnical and hydrogeological investigation program to avoid direct clearing of any priority flora, and within 20 metres of, most priority flora identified (Talis Consultants, 2020g; refer to Section 3, Figure 3). Given the presence of priority flora within the application area, a flora management condition has been imposed on the permit, requiring the permit holder to ensure that no clearing of priority flora occurs.

The flora management condition requires that no clearing within 20 metres of identified priority flora occurs, with one exception as stipulated within the permit. The proposed clearing will occur within 20 metres from five *Terminalia kumpaja* individuals for temporary access tracks (Figure 2). During the assessment of the application, the applicant reconfigured the geotechnical and hydrogeological investigation program to minimise impacts to priority flora as much as practicable (Talis Consultants, 2020g; Section 3). The clearing for access tracks is proposed within the outer extent of the 20-metre buffer surrounding the five *Terminalia kumpaja* individuals, as shown in Figure 2. Noting the number of *Terminalia kumpaja* individuals recorded in the application area during the flora and vegetation survey and within the local area, and given the vegetation within the application area is contiguous similar vegetation types and habitat, and direct clearing of priority flora is not permitted under the conditions of the permit, impacts to this priority 3 species are not likely to be significant. Furthermore, the applicant advised that where practicable, locations of priority flora (and buffer distances) will be demarcated through flagging to ensure minimum disturbance to any individuals and their habitat (Talis Consultants, 2020h). This is also specified in the flora management conditions of the permit.

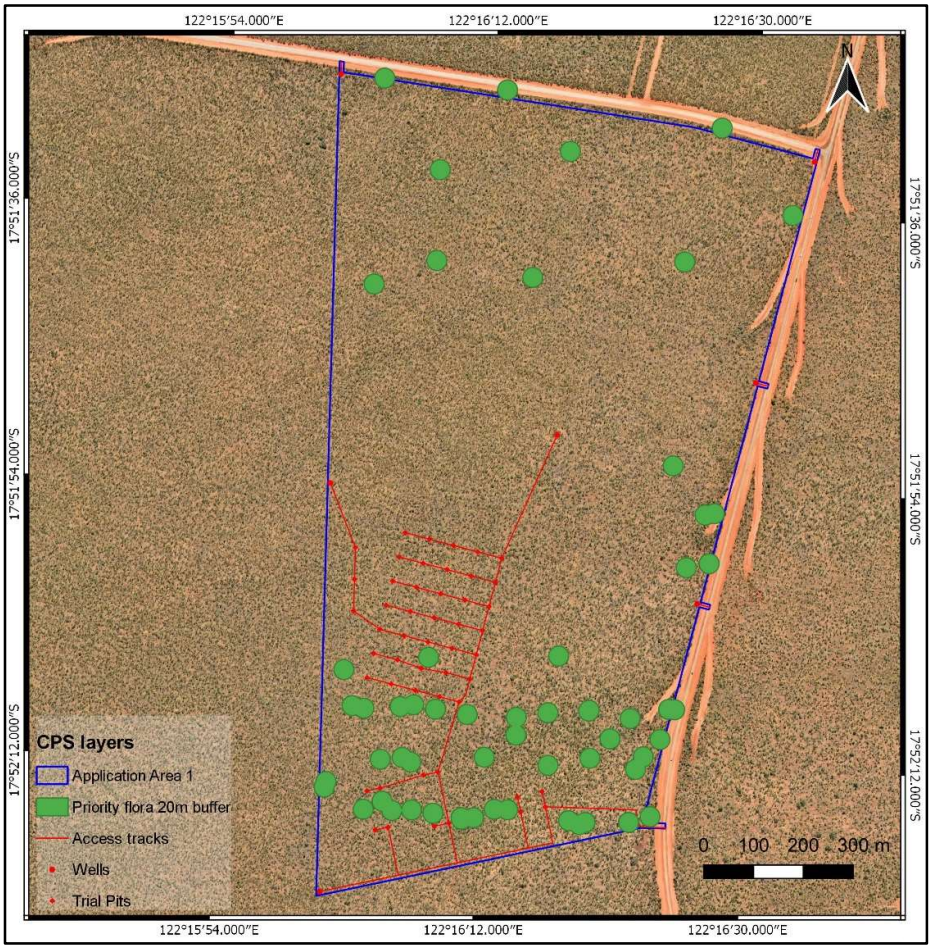

Figure 3 – The location of the proposed geotechnical and hydrogeological investigation program (red) and 20-metre buffers for priority flora (green) identified during the Spectrum Ecology (2020b) survey within Application Area 1 (Talis Consultants, 2020g)

The buffer for the 'Mangarr (Minyjuru): Relict dune system dominated by extensive stands of Minyjuru (Mangarr) *Sersalisia* (formerly *Pouteria*) *sericea'* (Mangarr; Priority 1) priority ecological community (PEC) has been mapped within the north western corner of Application Area 1. The PEC is known from 19 records within the local area. The reconnaissance flora and vegetation survey did not record any *Sersalisia sericea* individuals and found the habitat observed within Application Area 1 is not typical of the habitat associated with *Sersalisia sericea* (Spectrum Ecology, 2019d). Spectrum Ecology (2020d) recommended an additional survey effort would be required to confirm the presence or absence of the PEC within the application area. The detailed / targeted flora and vegetation survey recorded ten *Sersalisia sericea* trees at six locations within Application Area 1 (Spectrum Ecology, 2020b). Four of these individuals occurred with the PEC buffer mapped over the application area (Spectrum Ecology, 2020b). The *Sersalisia sericea* trees recorded outside mapped PEC within Application Area 1 are not considered likely to represent the PEC (Spectrum Ecology, 2020b). Given the relatively small, low impact nature and investigative purpose of the clearing proposed, potential impacts to the PEC will be minimised through the implementation of a PEC management condition, limiting the clearing within the mapped PEC buffer to 0.03 hectares.

The reconnaissance flora and vegetation survey identified suitable habitat for *Corymbia paractia* (Priority 1) within Application Area 1, but did not record any individuals (Spectrum Ecology, 2019d). The "*Corymbia paractia* dominated community on dunes" (*Corymbia paractia*) PEC is described as *Corymbia paractia* behind dunes, and as occurring in the Broome township area and may occur in the transition zone between coastal vine thickets and Pindan vegetation (DBCA, 2020). The PEC is known from 63 records within the local area. The detailed flora and vegetation survey identified that Application Area 1 likely contains the *Corymbia paractia* PEC given 13 records of the species were recorded during the survey, the distribution of the species, abundance of the species, and the presence of associated vegetation (Spectrum Ecology, 2020b). The likely extent of the *Corymbia paractia* PEC occurs within the north-western corner of the Application Area 1 and is primarily avoided by the proposed geotechnical and hydrogeological investigations (Talis Consultants, 2020f,g; Figure 4). The geotechnical and hydrological investigation program proposes to intersect the mapped extent of the PEC by approximately 4 metres (Talis Consulting, 2020f,g)

To manage potential impacts to priority flora, the permit includes a flora management condition to ensure no clearing occurs within 20 metres of *Corymbia paractia*. Noting the above, the flora management conditions, the representation of the PEC within the local area, and the relatively small, low impact and temporary nature of the proposed clearing for the purpose of geotechnical and hydrogeological investigations, the proposed clearing is not likely to significantly impact the PEC or its occurrence within the local area.

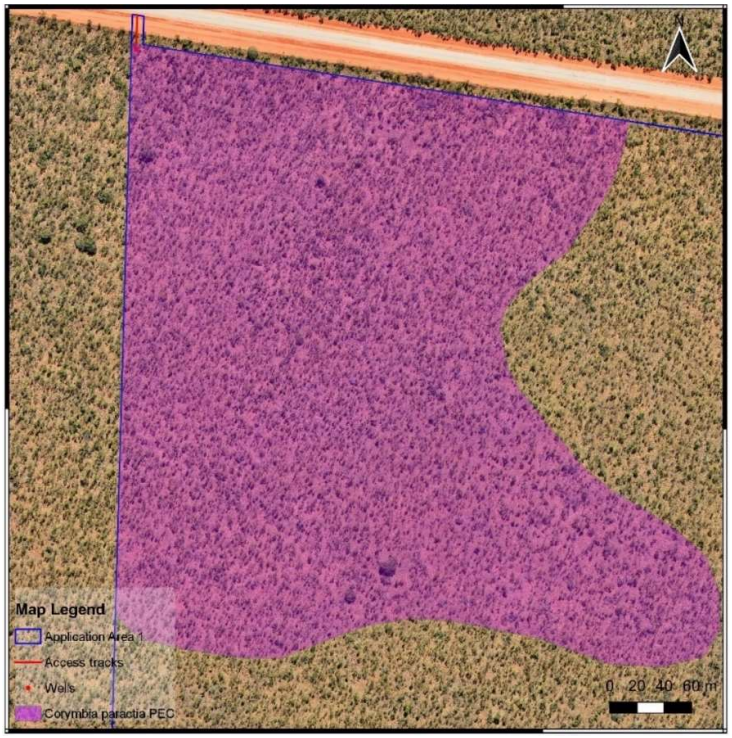

Figure 4. The extent of the *Corymbia paractia* PEC (purple) within the Application Area 1 (blue) and the proposed extent of the geotechnical and hydrogeological investigations (red in the north-western corner) (Talis Consultants, 2020f,g).

Kimberley Vegetation Association 770 (Priority 1) and Kimberley Vegetation Association 73 (Priority 3) ecological communities have been recorded within 3.9 kilometres and 3.2 kilometres from the application area. Roebuck Bay Mudflats is listed as a threatened ecological community (TEC; vulnerable) and has been mapped within one kilometre from the application area. The vegetation within the application area is not considered to represent these conservation significant ecological communities (Spectrum Ecology, 2020b,d).

The Level 1 terrestrial fauna survey conducted by Spectrum Ecology (2020d) identified that Application Area 1 is dominated by Pindan Shrubland habitat, comprising open to sparse *Acacia* sp. shrubland over tussock grassland. Pindan Shrubland habitat was relatively consistent across both application areas and within the surrounding region (Spectrum Ecology, 2020d). No conservation significant fauna were recorded during the Level 1 fauna survey (Spectrum Ecology, 2020d). As discussed under principle (b), the Level 2 terrestrial fauna survey recorded one conservation significant fauna taxa, the northern coastal free-tailed bat (*Ozimops cobourgianus*), via ultrasonic recorder within Application Area 1 (Spectrum Ecology, 2020c). The northern coastal free-tailed bat was formerly known as *Mormopterus cobourgianus* and is currently referred to as such by the Department of Biodiversity, Conservation and Attractions (DBCA; Spectrum Ecology, 2020c). The species may overfly or forage within the application area (Spectrum Ecology, 2020c). No other threatened or priority fauna were recorded during the fauna surveys (Spectrum Ecology, 2020c,d).

As discussed under principle (b), the vegetation within Application Area 1 may comprise suitable habitat for conservation significant fauna (Spectrum Ecology, 2020c). Noting the absence of conservation significant fauna recorded during the fauna surveys, the vegetation within the application area is contiguous similar vegetation types and habitat, adjacent to areas with secure conservation tenure, and noting local area retains more than 98 per cent of it pre-European vegetation extent, the vegetation within the application area is not likely to comprise significant habitat for conservation significant fauna. Noting this and the relatively small, low impact nature and investigative purpose of the clearing proposed, the proposed clearing is not likely to significantly impact conservation significant fauna. A fauna management condition has been placed on the permit to manage potential impacts to fauna, if opportunistically present.

One conservation area, Yawuru Birragun Conservation Park, is situated adjacent and directly west to Application Area 1. No conservation areas intersect the application area. Noting the small and linear extent of the clearing proposed within a larger application area boundary, the proposed clearing is not anticipated to adversely impact species diversity and recruitment within conservation areas. The proposed clearing has the potential to introduce and spread weeds into adjacent remnant vegetation and conservation areas. Weed management conditions will assist in mitigating this risk. The proposed clearing is not likely to have a significant impact to local and regional linkages given the relatively small and linear nature, the investigative purpose of the clearing and the local area retains more than 98 per cent of it pre-European vegetation extent.

Application Area 1 does not comprise significant fauna habitat or threatened flora, but comprise habitat for priority flora and vegetation communities. Noting the vegetation within the application area is considered to be in excellent (Keighery, 1994) condition (Spectrum Ecology, 2020b), and the presence of priority flora and communities (Spectrum Ecology, 2020b,d), the vegetation within the application area may comprise a high level of biodiversity and the proposed clearing may be at variance with this principle. Flora and PEC management conditions have been placed on the permit to manage potential impacts to these. Noting the investigative purpose of the clearing proposed, a revegetation and rehabilitation condition has been placed on the permit.

Application Area 2
The flora and vegetations surveys identified one vegetation type (V001) within Application Area 2, described as *Corymbia greeniana* isolated trees over *Acacia eriopoda* open shrubland over *Chrysopogon fallax* and *Triodia* species isolated tussock and hummock grasses (Spectrum Ecology, 2020a,b). The vegetation within the application area in excellent (Keighery, 1994) condition and weeds rarely recorded (Spectrum Ecology, 2020b). No threatened or priority flora were recorded within Application Area 2 during the reconnaissance or detailed flora and vegetation surveys conducted by Spectrum Ecology (2020b,d). No TECs or PECs were recorded within Application Area 2 (Spectrum Ecology, 2020b,d). One *Sersalisia sericea* tree was recorded within the Application Area 2 during the detailed / targeted flora and vegetation survey, however, the vegetation within Application Area 2 is not considered to represent the Mangarr PEC (Spectrum Ecology, 2020b).

The Level 1 terrestrial fauna survey did not record any conservation significant fauna within Application Area 2 (Spectrum Ecology, 2020d). The Level 2 terrestrial fauna survey recorded one conservation significant fauna, northern coastal free-tailed bat, via ultrasonic recorder within Application Area 2 (Spectrum Ecology, 2020c). The species may overfly or forage within the application area (Spectrum Ecology, 2020c). No other threatened or priority fauna were recorded during the surveys (Spectrum Ecology, 2020c,d). As discussed under principle (b), the vegetation within Application Area 1 may comprise suitable habitat for conservation significant fauna (Spectrum Ecology, 2020c). Noting the absence of conservation significant fauna recorded during the fauna surveys, the vegetation within the application area is contiguous similar vegetation types and habitat, and the local area retains more than 98 per cent of it pre-European vegetation extent, the vegetation within the application area is not likely to comprise significant habitat for conservation significant fauna. A fauna management condition has been placed on the permit to manage potential impacts to fauna, if present. Given the investigative purpose of the clearing, a revegetation and rehabilitation condition has been placed on the permit.

No conservation areas intersect the application area. An unnamed reserve is located approximately 17 kilometres south-west of Application Area 2. The proposed clearing is not likely to have a significant impact to local and regional linkages given the relatively small, linear and low impact nature of the clearing within a wider footprint and the local area retains more than 98 per cent of it pre-European vegetation extent. The proposed clearing has the potential to introduce and spread weeds into adjacent remnant vegetation. A weed management condition has been placed on the permit to manage potential impacts from weeds.

Noting the vegetation within the application area does not comprise threatened or priority flora, or significant fauna habitat, and is not known to represent any PECs or TEC (Spectrum Ecology, 2020b,c,d), Application Area 2 is not likely to comprise a high level of biodiversity and is not to be at variance with this principle. Noting the vegetation is in excellent (Keighery, 1994) condition and investigative purpose of the clearing, a revegetation and rehabilitation condition has been placed on the permit.

Summary
Given the above, the proposed clearing of Application Area 1 may be at variance with this principle, while the clearing of Application Area 2 is not likely to be at variance with this principle:

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.

Proposed clearing is not likely to be variance with this principle
According to available datasets, 114 conservation significant fauna have been recorded within the local area, comprising 26 taxa listed as threatened and 18 priority fauna listed under the *Biodiversity Conservation Act 2016* (BC Act), three other specially protected fauna, one presumed extinct and 66 protected under an international agreement (DBCA, 2007-). A number of taxa are protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

As discussed under principle (a), the Level 1 terrestrial fauna survey commissioned by the applicant did not record any conservation significant fauna within Application Area 1 or Application Area 2. The application areas are dominated by Pindan Shrubland habitats, comprising open to sparse *Acacia* sp. shrubland over tussock grassland and is mostly homogenous with a natural patchiness in tree, shrub and grass density (Spectrum Ecology, 2020c). Pindan Shrubland habitat was consistent across both application areas and the surrounding region (Spectrum Ecology, 2020c). The habitat is characterised by a low-density of *Corymbia* spp., *Eucalyptus* spp. and *Lysiphyllum cunninghamii* trees over medium to high density *Acacia eriopoda* and *A. platycarpa* shrubland (Spectrum Ecology, 2020c). The grass layer varies from low to high density *Sorghum plumosoman, Chrysopogon fallax* and *Triodia* spp. on a flat plain of orange sand (Spectrum Ecology, 2020c). Leaf litter and wood litter is generally sparse and accumulates under trees and shrubs only (Spectrum Ecology, 2020c).

Whilst no conservation significant fauna were recorded during the Level 1 survey, Spectrum Ecology (2020d) identified the vegetation within the application areas may provide suitable habitat for 12 conservation significant fauna. A Level 2 terrestrial fauna survey was commissioned and conducted in conjunction with a targeted survey for greater bilby within Application Area 1 and Application Area 2 (Spectrum Ecology, 2020c). A total of 31 vertebrate fauna species were recorded within the Application Area 1 and 38 vertebrate fauna species within Application Area 2 (Spectrum Ecology, 2020c).

During the Level 2 fauna survey, four invertebrate specimens (two species) belonging to potential short range endemic (SRE) taxa were collected from dry pitfall traps during systematic trapping, including one from Application Area 1 and three from Application Area 2 (Spectrum Ecology 2020c). Genetic sequencing and morphological analysis identified the specimens as previously undescribed species L*ychas 'BSCO048'* and *Aname 'BMYG165'* that have not been collected previously (Spectrum Ecology, 2020c). The Pindan shrubland habitat that occurs within the application areas is homogenous and the microhabitats present are not thought likely to support SRE invertebrate species (Spectrum Ecology, 2020c). SRE invertebrate species are typically found in restricted habitats that provide a higher level of moisture than the surrounding habitats and are considered to be relict taxa confined to certain habitats such as rocky gorges, banded ironstone formation (BIF) ranges or creek lines (Spectrum Ecology, 2020c). These habitats appear to be absent from the application areas. The Pindan Shrubland habitat recorded within the application areas occur across a large continuous extend across the Dampier Peninsula, which was recorded

from previous surveys, an indicates a low likelihood that the application areas support taxa with a distribution restricted to either application area (Spectrum Ecology, 2020c).

One conservation significant fauna, the northern coastal free-tailed bat was detected multiple times via ultrasonic recorder within Application Area 1 and Application Area 2 (Spectrum Ecology, 2020c). The northern coastal free-tailed bat is known from one previous record within the Application Area 1 in 2016 (DBCA, 2007-). The distribution of the species is extensive, occurring in coastal areas from Exmouth to Broome, and in the Northern Territory and Queensland (Spectrum Ecology, 2020c). The species roosts in small spouts and dead upper branches of mangroves from where they disperse (Spectrum Ecology, 2020c). Western Australian populations are associated with mangrove communities with roosts only recorded from *Avicennia marina* (Spectrum Ecology, 2020c). Whilst the application areas occur in proximity to coastal habitats, mangrove habitats are absent from both application areas (Spectrum Ecology, 2020c). As such, the species may overfly or forage within the application areas (Spectrum Ecology, 2020c). Noting the vegetation within the application areas is contiguous with areas of similar habitats in similar condition, adjacent to vegetated areas with secure conservation tenure, and noting local area retains more than 98 per cent of it pre-European vegetation extent, the vegetation within the application area is not likely to comprise significant habitat for the northern coastal free-tailed bat. A fauna management condition will manage potential impacts from the clearing proposed.

No other threatened, priority or conservation significant fauna were recorded during the Level 2 / targeted terrestrial fauna surveys (Spectrum Ecology, 2020c). The following applies to the remaining 13 conservation significant fauna with the potential to occur within the application areas Spectrum Ecology (2020c,d):

- Greater bilby (*Macrotis lagotis*), listed as endangered under the BC Act and EPBC Act. The habitat preferences closely align with those found in the application areas. Not recorded within the application areas during Level 1 or Level 2 fauna / targeted bilby surveys. The vegetation within the application area provides suitable habitat. However, the proposed clearing is not likely to impact significant habitat for this species.
- Golden bandicoot (*Isoodon auratus auratus*), listed as vulnerable under the BC Act and EPBC Act. Not recorded within the application areas during fauna surveys. The vegetation within the application area may provide suitable habitat, however the proposed clearing is not likely to impact significant habitat for this species.
- Spectacled hare-wallaby (*Lagorchestes conspicillatus leichardti*), listed as Priority 4 by DBCA. Likely a resident to the local area and the vegetation within the application areas may provide suitable conditions. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Short-tailed Mouse (*Leggadina lakedownensis*) listed as Priority 4 by DBCA. The species may occasionally occur at the study areas when food resources are plentiful. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Northern brushtail possum (*Trichosurus vulpecula arnhemensis*), listed as vulnerable under the BC Act. Some suitable habitat present within the application areas. No signs recorded within the application areas during the fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Bare-rumped sheathtail Bat (*Saccolaimus saccolaimus nudicluniatus*), listed a vulnerable under the EPBC Act and Priority 3 by DBCA. The vegetation within the application areas may provide suitable roosting and foraging habitat. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Dampierland goanna (*Varanus sparnus*), listed as Priority 1 by DBCA. Habitat is suitable, individuals were trapped during the surveys to the north-east and north of application areas. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Oriental Pratincole (*Glareola maldivarum*), listed as Migratory under the BC Act and EPBC Act. Habitat within the study areas is suitable when low grasslands and bare areas are present post fire or after tall grasses die off in the dry season. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Oriental cuckoo (*Cuculus optatus*), protected under international agreement. The species may potentially utilise the study area for foraging during non-breeding seasonally to utilise the study area for foraging during non-breeding season. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Barn swallow (*Hirundo rustica*), protected under international agreement. The species has the potential to utilise the study areas for foraging during the non-breeding season. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Fork-tailed swift (*Apus pacificus*), protected under international agreement. Species may overfly the application areas during the wet season whilst foraging. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Grey falcon (*Falco hypoleucos*), listed as vulnerable under the BC Act. Some suitable foraging habitat occurs within the study areas, however, breeding habitat is not present. May be a transient visitor. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.
- Peregrine falcon (*Falco peregrinus*), specially protected as 'other specially protected fauna' under the BC Act. Breeding habitat is not present and foraging habitat is limited. May be a transient visitor. Not recorded within the application areas during fauna surveys. The proposed clearing is not likely to impact significant habitat for this species.

Noting the absence of conservation significant fauna recorded during the fauna surveys, the vegetation within the application area is contiguous similar vegetation types and habitat, adjacent vegetation is situated within secure tenure, and the local area retains more than 98 per cent of it pre-European vegetation extent, the vegetation within the application area is not likely to comprise significant habitat for conservation significant fauna. Noting the relatively small, low impact nature and investigative purpose of the clearing proposed within a wider footprint, the proposed clearing is not likely to significantly impact conservation significant fauna.

Whilst no other conservation significant fauna were recorded during the fauna surveys (Spectrum Ecology, 2020c,d) and the vegetation within the application areas is not likely to comprise significant fauna habitat, it is noted that the application areas may provide suitable habitat for conservation significant and other fauna. A fauna management condition will manage direct impacts by allowing fauna to move away from the clearing and into adjacent vegetation ahead of the clearing if opportunistically present.

There are no formally mapped ecological linkages within or adjacent to Application Area 1 or Application Area 2. The proposed clearing is not likely to have a significant impact to local and regional linkages given the relatively small, linear and low impact nature of the clearing within a wider footprint and the local area retains more than 98 per cent of it pre-European vegetation extent. The proposed clearing has the potential to introduce and spread weeds into adjacent remnant vegetation and conservation areas. Weed management conditions will assist in mitigating this risk. Noting the investigative purpose of the clearing and to minimise fragmentation, a revegetation and rehabilitation condition has been placed on the permit.

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

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

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

A review of available databases determined that one threatened flora taxa, fringed fire bush (*Seringia exastia*), is known from 27 records within the local area between 1985 and 2011. None of these records occur within Application Area 1 or Application Area 2 (Western Australian Herbarium, 1998-). The nearest record is mapped approximately 8.6 kilometres from Application Area 1. The fringed fire bush is listed as critically endangered under both the BC Act and EPBC Act. This species grows in red pindan (red soil) (Western Australian Herbarium, 1998-). The fringed fire bush was not recorded during the reconnaissance or detailed / targeted flora and vegetation surveys of the application areas (Spectrum Ecology, 2020b,b).

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

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

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

As discussed under principle (a), a review of available databases determined that no ecological communities listed as threatened by the Western Australia Minister for the Environment are mapped within the application area. The buffers for two state listed TECs have been mapped within the local area but not the application areas including:

- 'Roebuck Bay mudflats: Species-rich faunal community of the intertidal mudflats of Roebuck Bay', listed as vulnerable and located approximately 0.6 kilometres south and 8.5 kilometres south west from Application Area 1 and Application Area 2, respectively.
- 'Vine thickets: Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula', listed as vulnerable and recognised as endangered under the EPBC Act. This community has been mapped within six kilometres south west and 5.9 kilometres 32 from Application Area 1 and Application Area 2, respectively.

The flora surveys identified that the vegetation within the application areas is not representative of these TECs (Spectrum Ecology, 2020b,d). Given this, the vegetation within the application area is not likely to comprise the whole or a part of, or be necessary for the maintenance of a state-listed TEC.

Given 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 not likely to be 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 which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). As indicated within Table 1, the local area surrounding each application area retains the following pre-European native vegetation extents:

- Application Area 1 retains approximately 98.5 per cent native vegetation
- Application Area 2 retains approximately 98.9 per cent native vegetation

The application area is situated within the Dampierland Interim Biogeographic Regionalisation for Australia (IBRA) bioregion, which retains approximately 99.7 per cent of its pre-European native vegetation extent (Government of Western Australia 2019). The application areas are mapped within Beard vegetation association 750, which retains 99.7 per cent of its pre-European extent within the bioregion (Government of Western Australia 2019). Given the vegetation remaining exceeds the 30 per cent threshold within the mapped Beard vegetation association and local area, the vegetation within the application area is not considered to occur within an area that has been extensively cleared.

Table 1: Vegetation representation statistics (Government of Western Australia 2019)

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in DBCA Managed Lands	
				(ha)	(%)
IBRA Bioregion					
Dampierland	8,343,944.95	8,319,879.14	99.71	142,055.31	1.70
Vegetation Association					
750	1,229,182.16	1,225,280.52	99.68	34,114.53	2.78
Local Area (50 kilometre radius)					
Application Area 1	456,239.48	449,623.41	98.5	-	-
Application Area 2	694,373.09	686,883.76	98.9	-	-

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

(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 be at variance with this principle

According to available datasets, no watercourses or wetlands are mapped within the application area. The nearest mapped watercourses are Roebuck Bay wetland and Roebuck Plains System, both listed under the Directory of Important Wetlands in Australia for Western Australia, and located approximately 4.3 kilometres south and 2.7 kilometres south east from Application Area 1 and Application Area 2, respectively. A minor non-perennial watercourse is located approximately 600 metres west from the Application Area 2.

The 'Roebuck Bay mudflats: Species-rich faunal community of the intertidal mudflats of Roebuck Bay' and 'Vine thickets: Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula' are two ecological communities mapped within the local area and associated with riparian vegetation. Spectrum Ecology (2020b,c) established the vegetation within the application area does not resemble this ecological community, or any other riparian conservation significant communities recorded within the local area (Spectrum Ecology, 2020b,d). Given the absence of hydrological features and riparian vegetation within the application area, the proposed clearing is not likely growing in, or in association with, an environment associated with a watercourse or wetland. Noting the relatively small and linear nature and low impact characteristics of clearing proposed (see Section 2 and Section 3), the proposed clearing is not likely to significantly impact riparian vegetation.

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

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

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

According to available databases, the application areas are mapped within Wanganut System (335Wa) and Yeeda System (335Ye) soil-landscape systems. The Wanganut System comprises sandplains and linear dunes supporting pindan woodlands with acacias and bloodwoods and curly spinifex- ribbon grass, and broad low-lying swales supporting bloodwood-grey box woodlands with curly spinifex-ribbon grass (Payne and Schoknecht, 2011). The landform geomorphology is described as sandplain and dunefields with through-going drainage; sandplain, mainly in the upper parts, with stable dunefields, low-lying sandplain, and scattered pans and depressions; sparse to moderately dense branching drainage pattern; relief up to nine metres (Payne and Schoknecht, 2011). The system is described to support dense wattle scrub with pindan pastures, and is generally not prone to degradation or erosion, however, the control of grazing pressure and frequency of burning is considered appropriate from a land management perspective (Payne and Schoknecht, 2011).

The Yeeda System comprises red sandplains supporting pindan vegetation with dense acacia shrubs, scattered bloodwood and grey box trees and curly spinifex and ribbon grass (Payne and Schoknecht, 2011). The landform is described as sandplain and dunefields with little organised drainage; sandplain up to 16 kilometres in extent, with shallow valleys, plains with thin sand cover, and scattered pans; with limited surface drainage in zones of sheet-flow up to 3.2 kilometres wide and extending up to eight kilometres downslope from adjacent uplands (Payne and Schoknecht, 2011). The system is described to support woodlands and dense wattle scrub with pindan pastures, and is generally not prone to degradation or erosion, however, the control of grazing pressure and frequency of burning is considered appropriate from a land management perspective (Payne and Schoknecht, 2011).

Noting the above, and given the highly vegetated landscape which retains more than 98 per cent of its pre-European extent, and the small extent and linear distribution of clearing proposed within a much larger vegetation footprint, the proposed clearing is not likely to cause appreciable land degradation. Noting the vegetation is in excellent (Keighery, 1994) condition and the investigative purpose of the clearing, a revegetation and rehabilitation condition has been placed on the permit.

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

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

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

According to available databases, no conservation areas are mapped within the application areas. The Yawuru Birragun Conservation Park is located directly adjacent to Application Area 1. The vegetation within this park is contiguous with the

vegetation within Application Area 1. The nearest mapped conservation areas to Application Area 2 are two un-managed reserves, located approximately 17.2 metres west and 13.3 metres south west from the application area.

The vegetation within the application area is contiguous with the vegetation within the adjoining Yawuru Birragun Conservation Park. As such, the vegetation within the application area provides an ecological linkage with the conservation park. Noting the local area surrounding the application areas retain more than 98 per cent of it pre-European vegetation extent, and the small, linear and low impact nature of the clearing within a wider permit boundary and given the investigative purpose of the clearing, the proposed clearing is not likely to adversely impact species diversity and recruitment within any conservation area or sever an ecological linkage. Given the distance to the nearest conversation area from Application Area 2, the extent of vegetation surrounding the application area, the proposed clearing is not likely to sever any landscape linkages or impact on the values of conservation reserves.

It is noted that the removal of native vegetation and soil disturbance associated with clearing increases the risk of weeds being spread into surrounding vegetation. The proposed clearing has the potential to directly impact the adjacent conservation areas and surrounding remnant vegetation through the spread of weeds. Weed management conditions will mitigate potential this risk to conservation areas and adjacent vegetation.

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

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

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

According to available datasets, no watercourses or wetlands are mapped within the application area. The nearest mapped watercourses are Roebuck Bay wetland and Roebuck Plains System, both listed under the Directory of Important Wetlands in Australia for Western Australia, and located approximately 4.3 kilometres south and 2.7 kilometres south east from Application Area 1 and Application Area 2, respectively. A minor non-perennial watercourse is located approximately 600 metres west from the Application Area 2.

The flora surveys did not record riparian vegetation within the application areas (Spectrum Ecology, 2020b,d). The buffer of the 'Roebuck bay Mudflats; Species-rich faunal community of the intertidal mudflats of Roebuck Bay' TEC, is mapped within 600 metres from Application Area 1. Spectrum Ecology (2020b,d) established the vegetation within the application area does not resemble this ecological community or other riparian conservation significant communities recorded within the local area. According to available datasets, the groundwater salinity within the application area is mapped less than 500 milligrams per litre. The application areas are mapped within the Broome Groundwater Area and Canning-Kimberley Groundwater Area. Given the above, the relatively small extent and linear distribution of the clearing proposed, and the investigative purpose of the clearing, the proposed clearing is not likely to cause deterioration in the quality of surface water or groundwater.

Given 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

As assessed under principle (f) and (i), no watercourses or wetlands are mapped within the application area. Given the extent of native vegetation remaining, and the relatively small and primarily linear clearing extent under application, the proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding.

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

Planning instruments and other relevant matters.

The clearing permit application was advertised on the DWER website on 14 March 2020 with a 21 day submission period. No public submissions were received. Given amendments to the application area boundary during the assessment of the application (refer to Section 3), the clearing permit application was readvertised on the DWER website on 16 June 2020 with a seven day submission period. No public submission were received.

On 13 March 2020, DWER notified Department of Planning, Lands and Heritage (DPLH) and provided the opportunity to comment on the application. On 9 April 2020, the DPLH Land Use Management division advised the application affects portions of Reserve 25716, being Lot 593 on Deposited Plan 71791, Lot 595 on Deposited Plan 71791 and Lot 990 on Deposited Plan 414194, in Waterbank (DPLH, 2020). DPLH advised that the reserve is held under the care, control and management of the Water Corporation (DPLH, 2020). The application also affects Lot 1544 on Deposited Plan 75840 (Pastoral lease N49900) in Roebuck and the pastoral lessees are Nyamba Buru Yawuru Ltd (DPLH, 2020). Given the applicant provided proof of support from both the Water Corporation and Nyamba Buru Yawuru Ltd, DPLH had no objection to the clearing permit (DPLH, 2020).

A review of available databases indicate that no Aboriginal sites of significance have been mapped within the application area. One Aboriginal site of significance has been mapped within 137 metres west Application Area 1. It is the responsibility of the applicant to comply with the *Aboriginal Heritage Act 1972* and ensure the clearing proposed does not cause unauthorised disturbance to an Aboriginal site of significance.

It is noted that the application purpose includes the construction of groundwater bores and wells. Any groundwater abstraction within this proclaimed area may subject to licensing by DWER. It is the responsibility of the applicant to ensure obligations under the under the *Rights in Water and Irrigation Act 1914* are fulfilled.

It should be noted that Application Area 1 and Application Area 2 were initially applied for as two separate clearing permit applications. On 27 February 2020, the applicant requested the application areas for CPS 8821/1 and CPS 8820/1 are combined into one clearing permit application. On 3 March 2020, CPS 8821/1 was withdrawn by the applicant and this area was included in CPS 8820/1. Application Area 2 also intersects CPS 1312/1, an area permit application submitted by the Indigenous Land Corporation to clear 955 hectares of native vegetation for the purpose of grazing and pasture This application was refused by DWER on 9 July 2006.

5. References

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Department of Biodiversity Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: http://naturemap.dpaw.wa.gov.au/. (Accessed February 2020).

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Environmental Protection Authority (2016b) EPA Technical Guidance: Terrestrial Fauna Surveys. Environmental Protection Authority.

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Shire of Broome (2020) Application or a clearing permit (purpose permit) Form C2 CPS 8820/1 – DWER correspondence received 19 February 2020 (DWER reference A1869737).

Spectrum Ecology (2020a) Broome Regional Resource Recovery Facility Detailed Flora & Fauna Assessment Summary (Letter), prepared for Talis Consultants, dated 12 May 2020 (DWER reference A1896900).

Spectrum Ecology (2020b) Broome Regional Resource Recovery Park Detailed Flora and Vegetation Assessment prepared for Talis Consultants | Shire of Broome, July 2020 (DWER reference A1914019).

Spectrum Ecology (2020c) Broome Regional Resource Recovery Park Terrestrial Fauna Assessment Prepared for: Talis Consultants | Shire of Broome, July 2020 (DWER reference A1918481).

Spectrum Ecology (2020d) Broome Regional Resource Recovery Park Reconnaissance Flora & Level 1 Fauna Survey. Prepared for the Shire of Broome, January 2020 (DWER reference A1869737).

Talis Consultants (2019a) Clearing Permit Supporting Document Site D2 – Broome – Cape Leveque Road, Waterbank, WA. Prepared for the Shire of Broome, January 2020 (DWER reference A1869737).

Talis Consultants (2019b) Clearing Permit Supporting Document Site G1 - Great Northern Highway, Roebuck, WA. Prepared for the Shire of Broome, January 2020. Prepared for the Shire of Broome, January 2020 (DWER reference A1869737).

Talis Consultants (2020c) DWER correspondence received 8 April 2020 – clearing permit CPS 8820/1 – Application Area 2 amendment / reduction to application area envelope (DWER reference A1886401).

Talis Consultants (2020d) DWER correspondence received 25 May 2020 – clearing permit CPS 8820/1 – Response to DWER request for further information (DWER reference A1896900).

Talis Consultants (2020e) DWER correspondence received 16 June 2020 – clearing permit CPS 8820/1 – Application Area 1 increased to application area envelope to include road reserve access (DWER reference A1903378).

Talis Consultants (2020f). Clearing Permit Application CPS 8820/1 clarifications *Corymbia paractia* Priority Ecology Community - DWER correspondence received 22 July 2020 (DWER reference A1918478).

Talis Consultants (2020g) DWER correspondence received 16 June 2020 – clearing permit CPS 8820/1 – applicant providing draft permit condition feedback and confirming avoidance of priority flora and feasibility of 20 metre priority flora buffer (DWER reference A1914019).

Talis Consultants (2020h), DWER correspondence received 1 July 2020 - clearing permit CPS 8820/1 DWER, Talis Consultants and Shire of Broome meeting (DWER Ref: A1913989).

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6. GIS Datasets

- Aboriginal Sites of Significance
- DBCA Managed Estate
- Directory of Important Wetlands
- Geomorphic Wetlands Swan Coastal Plain
- Hydrography, Hierarchy
- Hydrography, Linear
- Land Degradation Datasets
- NatureMap
- Perth Groundwater Mapping (DWER)
- Remnant Vegetation
- SAC Bio Datasets
- Soils, Statewide
- TPFL Data
- Vegetation Complexes, IBRA Bioregion
- WA Herbarium Data
- WA TEC / PEC Boundaries and Buffers