



## CLEARING PERMIT

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

<b>Purpose Permit number:</b>	CPS 6020/4
<b>Permit Holder:</b>	Commissioner of Main Roads Western Australia
<b>Duration of Permit:</b>	18 October 2014 – 18 October 2029

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 constructing roads, access tracks, construction camps, bore sites, gravel pits and laydown areas.

#### **2. Land on which clearing is to be done**

Lot 182 on Deposited Plan 28412, Minilya  
Lot 285 on Deposited Plan 30477, Minilya  
Lot 241 on Deposited Plan 219245, Minilya  
Lot 179 on Deposited Plan 220605, Lyndon  
Lot 286 on Deposited Plan 30478, Lyndon  
Lot 287 on Deposited Plan 30479, Lyndon and Yannarie  
Lot 174 on Deposited Plan 220553, Lyndon and Yannarie  
Lot 158 on Deposited Plan 189075, Lyndon  
Lot 171 on Deposited Plan 238297, Lyndon  
Lot 289 on Deposited Plan 30480, Exmouth Gulf  
Lot 190 on Deposited Plan 227904, Exmouth Gulf  
Lot 290 on Deposited Plan 30480, Exmouth Gulf  
Lot 288 on Deposited Plan 30480, Yannarie and Lyndon  
Lot 172 on Deposited Plan 238297, Yannarie  
Lot 165 on Deposited Plan 220784, Yannarie  
Lot 320 on Deposited Plan 68269, Yannarie  
Lot 291 on Deposited Plan 30481, Yannarie  
Lot 292 on Deposited Plan 30482, Yannarie  
Lot 293 on Deposited Plan 30483, Yannarie  
Lot 170 on Deposited Plan 220393, Yannarie  
Lot 74 on Deposited Plan 175273, Lyndon  
North West Coastal Highway road reserves (PIN 11730981, PIN 11728407, PIN 11728405, PIN 11728406, PIN 11728402, PIN 11728371, PIN 11728408), Lyndon and Yannarie  
Burkett Road reserve (PIN 11241801), Yannarie  
Towera Road reserve (PIN 11709012), Yannarie  
Yanrey Road reserve (PIN 11730661), Yannarie  
Mia Mia Road reserve (PIN 11709077, PIN 11709084, PIN 11709078), Lyndon  
Marrilla Road reserve (PIN 11728380, PIN 11728379, PIN 11728382), Lyndon and Yannarie  
Minilya-Exmouth Road reserve (PIN 11728365), Minilya  
Unnamed road reserves (PIN 11728397, PIN 11709079, PIN 11728370, PIN 11728372, PIN 11738178, PIN 11728394), Exmouth Gulf, Lyndon, Minilya and Yannarie

### 3. Area of Clearing

The Permit Holder must not clear more than 812 hectares of native vegetation within the combined areas cross hatched yellow on attached Plan 6020/4a, Plan 6020/4b, Plan 6020/4c, Plan 6020/4d, Plan 6020/4e, Plan 6020/4f, Plan 6020/4g, Plan 6020/4h, Plan 6020/4i and Plan 6020/4j.

### 4. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 18 October 2024.

### 5. Application

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

### 6. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the project activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those project activities under the *Main Roads Act 1930*, *Land Administration Act 1997* or any other written law.

## PART II –MANAGEMENT CONDITIONS

### 7. 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 *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

### 8. 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.

### 9. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) at an *optimal time* following clearing authorised under this Permit, *revegetate* and *rehabilitate* the area(s) that are no longer required for the purpose for which they were cleared under this Permit by:
  - (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land; and
  - (ii) ripping the ground on the contour to remove soil compaction; and
  - (iii) laying the vegetative material and topsoil retained under condition 9(a) on the cleared area(s).
- (c) within 18 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 9(b) of this Permit:
  - (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
  - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 9(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-

clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.

- (d) Where additional *planting* or *direct seeding* of native vegetation is undertaken in accordance with condition 9(c)(ii) of this permit, the Permit Holder shall repeat condition 9(c)(i) and 9(c)(ii) within 24 months of undertaking the additional *planting* or *direct seeding* of native vegetation.
- (e) Where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 9(c)(i) and (ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 9(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 9(c)(ii).

#### 10. Flora Management

- (a) Prior to undertaking any clearing authorised under this Permit within the combined areas cross-hatched yellow on Plan 6020/4a, Plan 6020/4b, Plan 6020/4c, Plan 6020/4d, Plan 6020/4e, Plan 6020/4f, Plan 6020/4g, Plan 6020/4h, Plan 6020/4i, Plan 6020/4j, the Permit Holder must engage a *botanist* to conduct a *targeted flora survey* of areas identified to be suitable habitat within the permit area for the presence of *Calandrinia sp. Nanutarra* (*F. Obbens FO 08/18*) and *Indigofera roseola*.
- (b) The Permit Holder shall ensure that no clearing occurs within 10 metres of any *Calandrinia sp. Nanutarra* (*F. Obbens FO 08/18*) or *Indigofera roseola* individuals identified through the surveys required by condition 10(a), unless the clearing is done in accordance with a Flora Management Plan required under condition 11 which has been approved by the CEO;
- (c) Within two months of undertaking any clearing authorised under this Permit within the combined areas cross-hatched yellow on Plan 6020/4a, Plan 6020/4b, Plan 6020/4c, Plan 6020/4d, Plan 6020/4e, Plan 6020/4f, Plan 6020/4g, Plan 6020/4h, Plan 6020/4i, Plan 6020/4j, the Permit Holder must provide the results of the *targeted flora survey* in a report to the CEO; and
- (d) If any *Calandrinia sp. Nanutarra* (*F. Obbens FO 08/18*) or *Indigofera roseola* are identified within the combined areas cross-hatched yellow on Plan 6020/4a, Plan 6020/4b, Plan 6020/4c, Plan 6020/4d, Plan 6020/4e, Plan 6020/4f, Plan 6020/4g, Plan 6020/4h, Plan 6020/4i, Plan 6020/4j, the targeted flora survey report must include the following:
  - (i) the location of each *Calandrinia sp. Nanutarra* (*F. Obbens FO 08/18*) and *Indigofera roseola* identified through the surveys required by condition 9(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, 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) map/s showing the location of any identified populations cleared and the remaining population; and
  - (iii) the methodology used to survey the permit area.

#### 11. Flora Management Plan

Where clearing within 10 metres of individuals of *Calandrinia sp. Nanutarra* (*F. Obbens FO 08/18*) or *Indigofera roseola* identified in condition 10(a) is unavoidable, the Permit Holder must prepare and submit a Flora Management Plan to the CEO for approval. The management plan must contain the following:

- (a) The results of the surveys carried out in accordance with condition 10(a);
- (b) Details of the Permit Holder's attempts to avoid and minimise impacts to *Calandrinia sp. Nanutarra* (*F. Obbens FO 08/18*) and *Indigofera roseola* identified through the surveys required by condition 10(a); and
- (c) Proposed methods of avoiding, minimising and/or mitigating the residual impacts to *Calandrinia sp. Nanutarra* (*F. Obbens FO 08/18*) and *Indigofera roseola* identified through the surveys required by condition 10(a).

## **PART III - RECORD KEEPING AND REPORTING**

### **12. Records must be kept**

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

- (a) the species composition, structure and density of the cleared area;
- (b) 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;
- (c) the date that the area was cleared;
- (d) the size of the area cleared (in hectares);
- (e) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 7 of this permit;
- (f) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 8 of this Permit;
- (g) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 9 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;
  - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
  - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*, and
  - (v) a copy of the environmental specialist's report.
- (h) *targeted flora surveys* provided to the CEO in accordance with condition 10 of this Permit; and
- (i) Flora Management Plan approved by the CEO in accordance with condition 11 of this Permit.

### **13. Reporting**

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
  - (i) of records required under condition 9 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 18 July 2029, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

## **DEFINITIONS**

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

***botanist*** means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of two (2) years work experience in Western Australian flora identification and undertaking flora surveys native to the bioregion being inspected or surveyed, or who is approved by the *CEO* as a suitable environmental specialist for the bioregion, and who holds a valid flora licence issued under the *Biodiversity Conservation Act 2016*;

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

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

***environmental specialist*** means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

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

**local provenance** means native vegetation seeds and propagating material from natural sources within 100 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared;

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

**optimal time** means the period from November to December for undertaking *direct seeding*;

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

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

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

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

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

**targeted flora 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 flora species which are being targeted. The targeted flora survey must be conducted having regard to EPA's *Technical Guidance – Flora EIA*. Where targeted flora are located, the whole extent of the population should be surveyed, including areas not contained within the Permit Area;

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

**weed/s** means any plant -

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

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Ryan Mincham  
MANAGER  
NATIVE VEGETATION REGULATION

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

1 September 2020



# Plan 6020/4a



## Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate



0 1 2 3 4 km



MGA 94  
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the  
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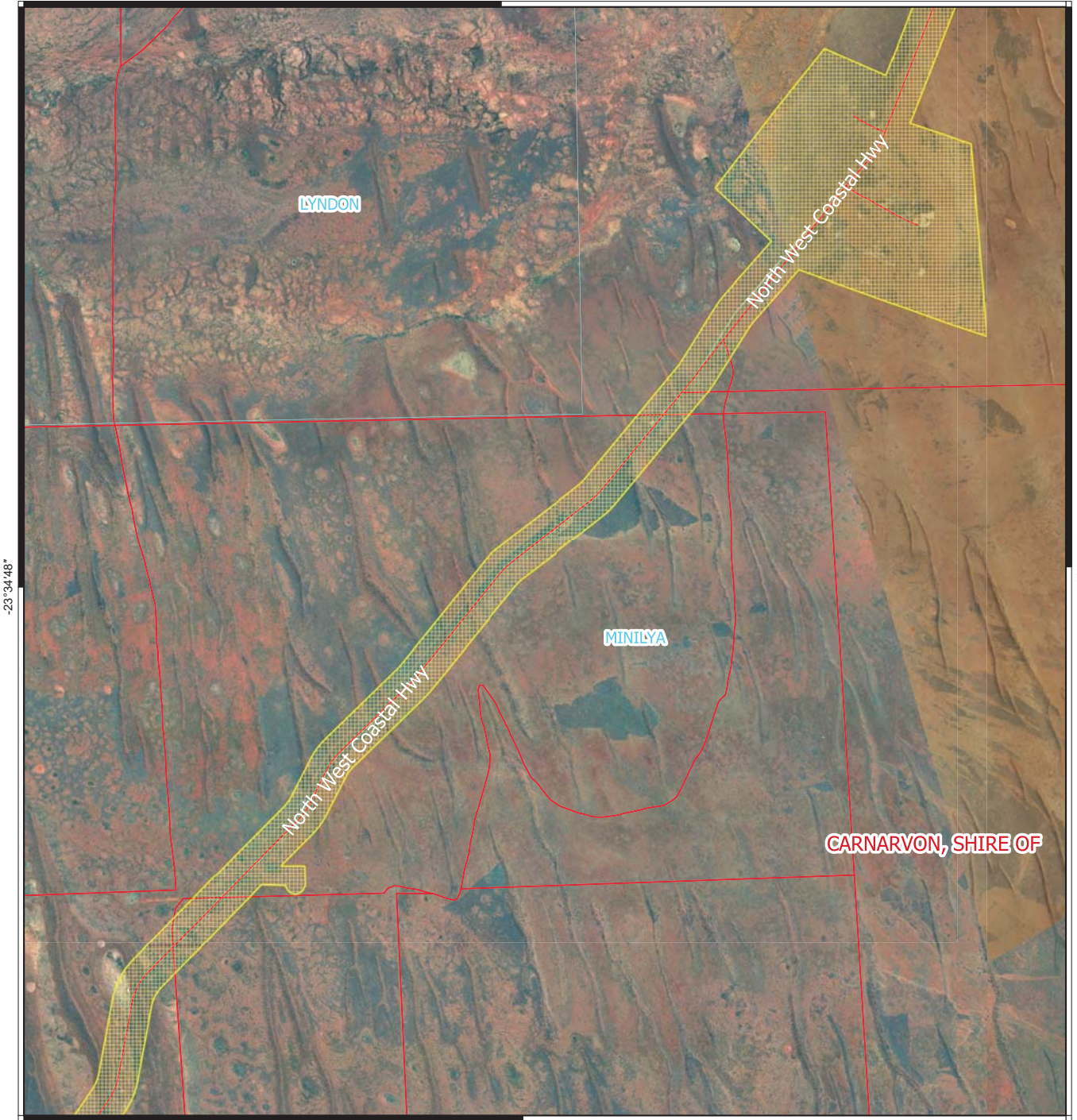


GOVERNMENT OF  
WESTERN AUSTRALIA



# Plan 6020/4b

114°12'36"



114°12'36"


## Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate

0 1 2 3 4 km



MGA 94  
Geocentric Datum of Australia 1994

  
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Officer delegated under section 20 of the  
Environmental Protection Act 1986



GOVERNMENT OF  
WESTERN AUSTRALIA





# Plan 6020/4c




## Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate

0 1 2 3 4 km



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GOVERNMENT OF  
WESTERN AUSTRALIA

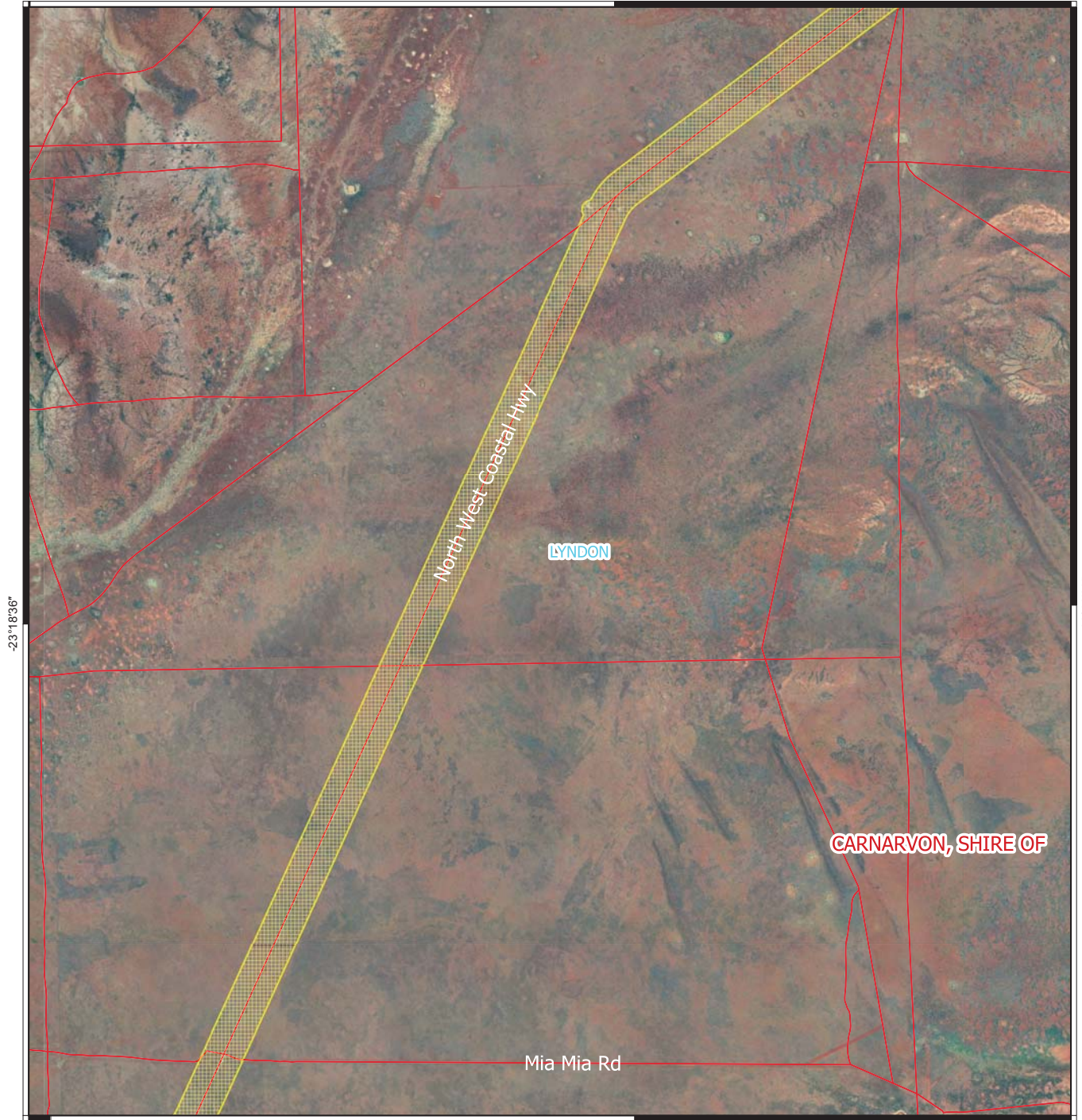




# Plan 6020/4d

114°18'0"

114°23'24"



114°18'0"

114°23'24"


## Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate

0 1 2 3 4 km



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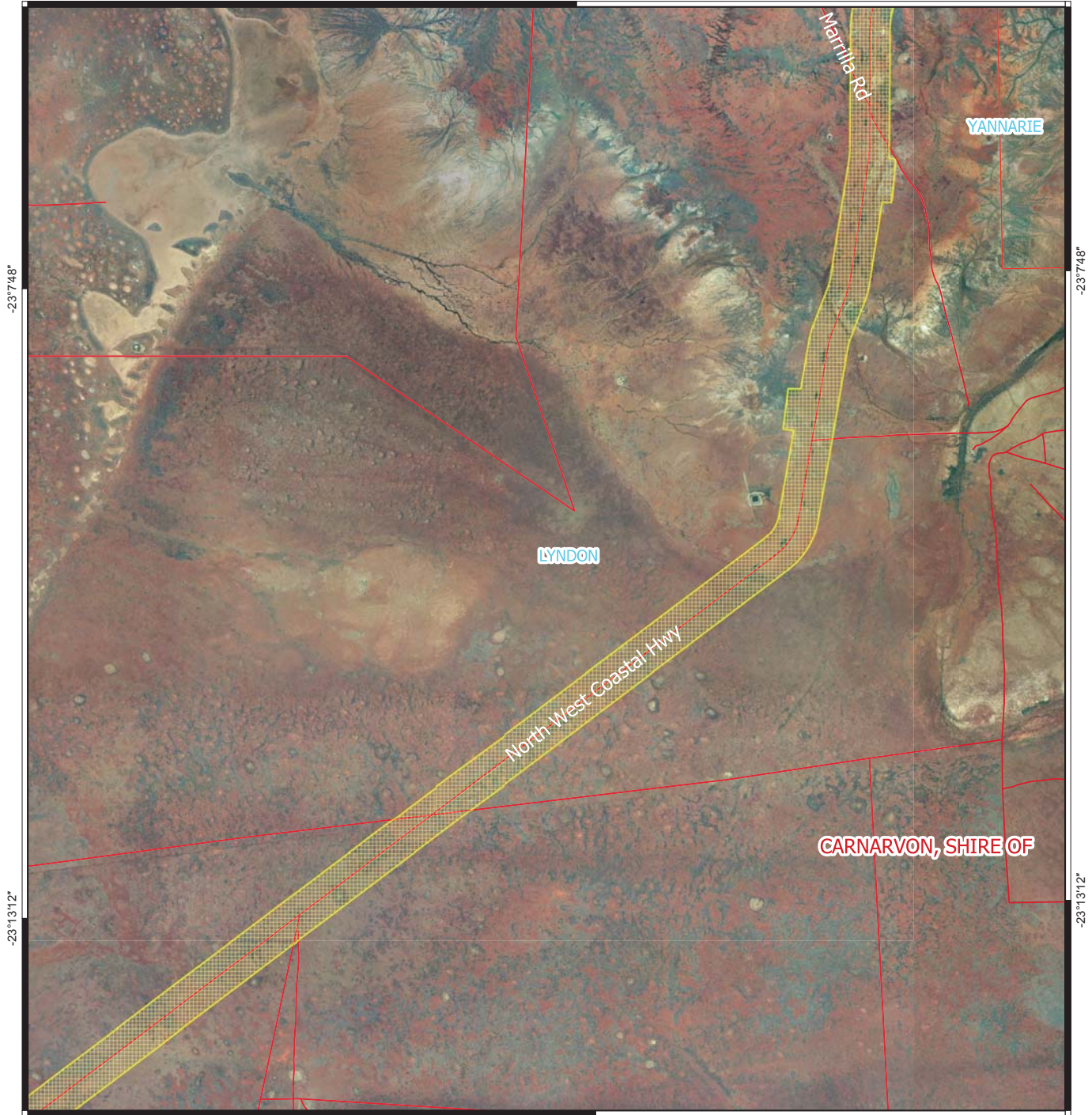


GOVERNMENT OF  
WESTERN AUSTRALIA



# Plan 6020/4e

114°28'48"



114°28'48"

## Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate

0 1 2 3 4 km



MGA 94  
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the  
Environmental Protection Act 1986



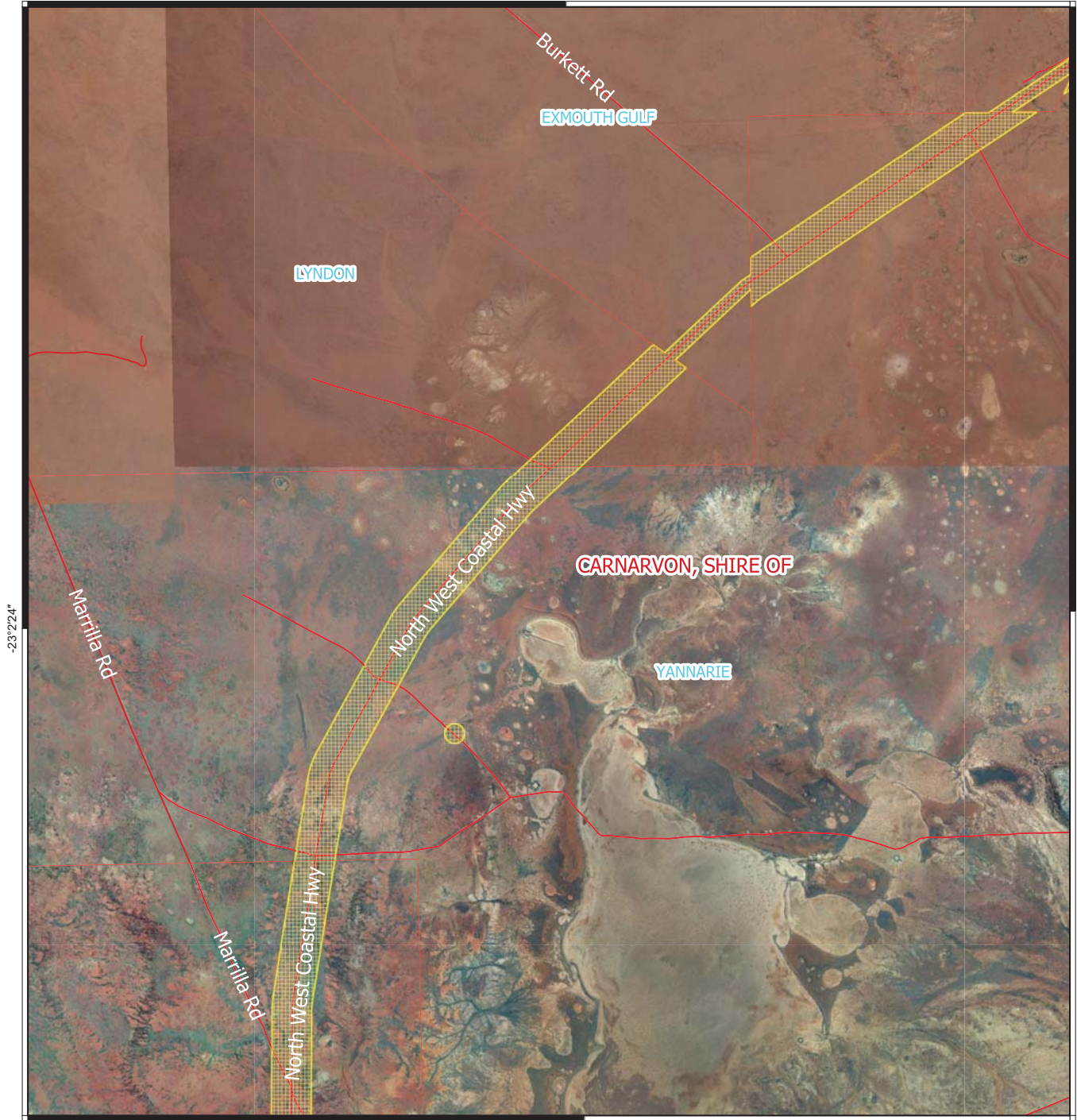
GOVERNMENT OF  
WESTERN AUSTRALIA





# Plan 6020/4f

114°34'12"



114°34'12"

## Legend


-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate



0 1 2 3 4 km



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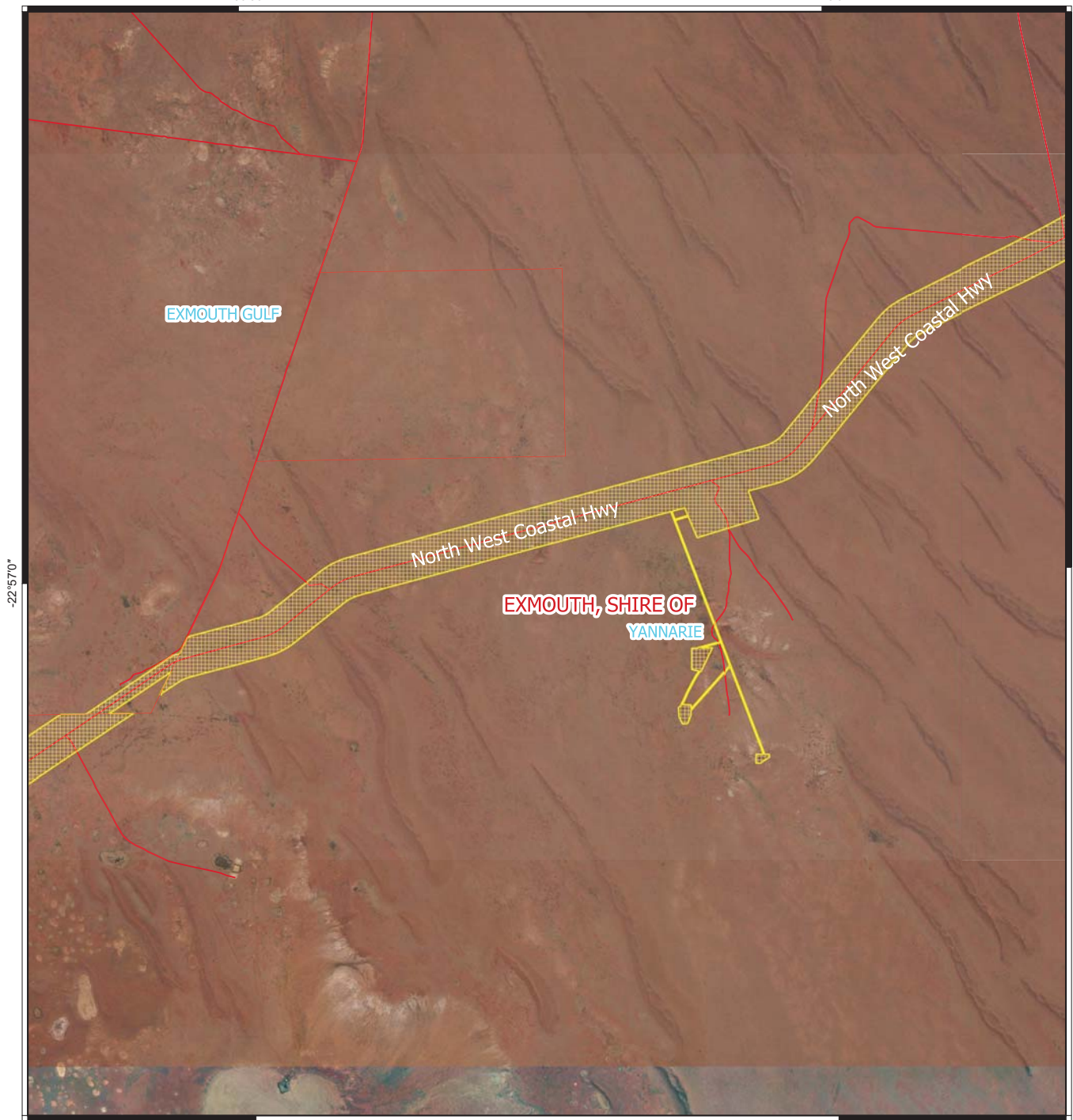


GOVERNMENT OF  
WESTERN AUSTRALIA

# Plan 6020/4g

114°39'36"

114°45'0"



## Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate



0 1 2 3 4 km



MGA 94  
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the  
Environmental Protection Act 1986



GOVERNMENT OF  
WESTERN AUSTRALIA



# Plan 6020/4h

114°50'24"

114°55'48"



## Legend


-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate



0 1 2 3 4 km



MGA 94  
Geocentric Datum of Australia 1994

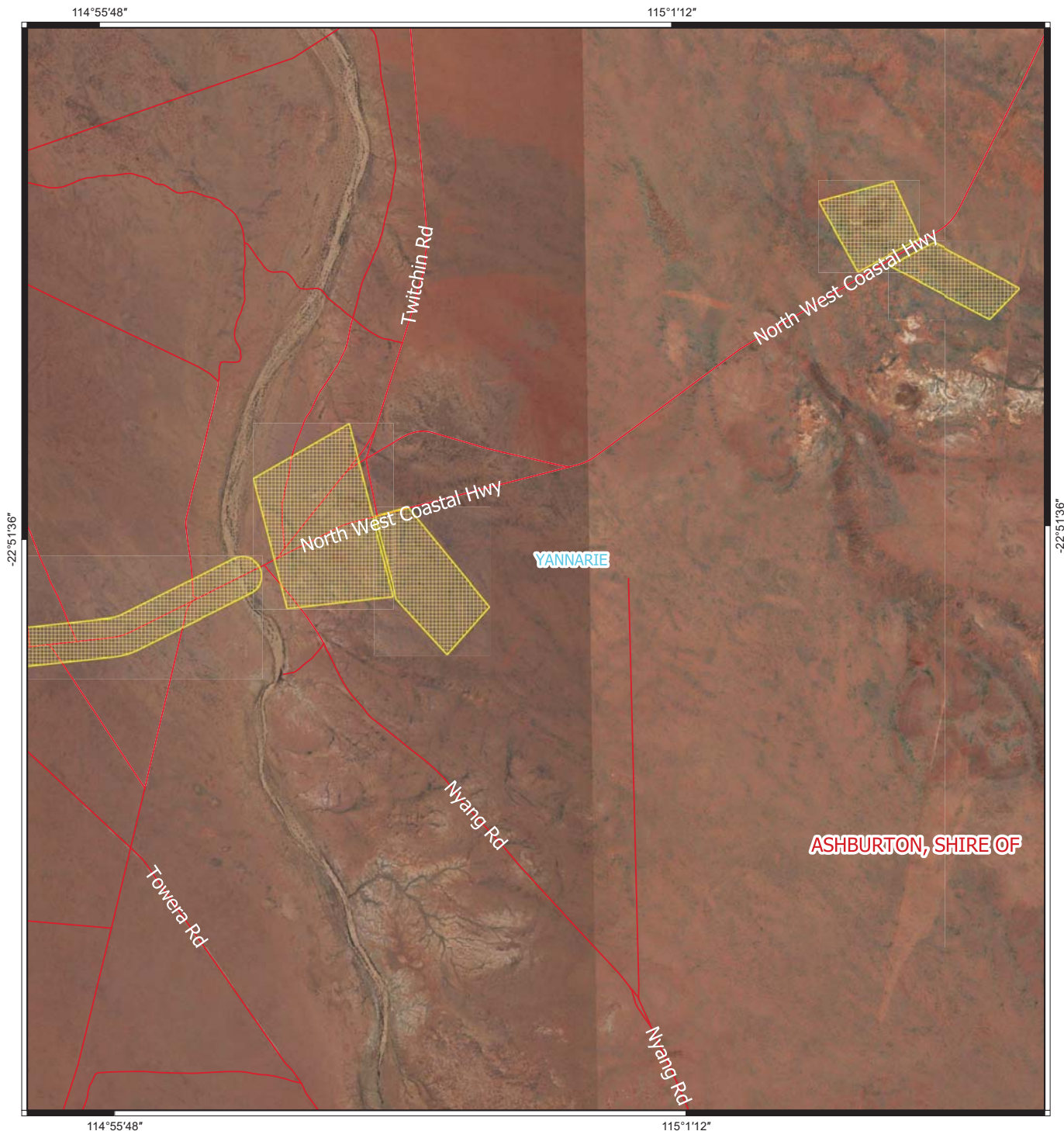
  
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Environmental Protection Act 1986



GOVERNMENT OF  
WESTERN AUSTRALIA

# Plan 6020/4i



## Legend


-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate



0 1 2 3 4 km



MGA 94  
Geocentric Datum of Australia 1994

  
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Officer delegated under section 20 of the  
Environmental Protection Act 1986



**GOVERNMENT OF  
WESTERN AUSTRALIA**



# Plan 6020/4j

115°17'24"



## Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Road Centrelines
-  Localities - Landgate



MGA 94  
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the  
Environmental Protection Act 1986



GOVERNMENT OF  
WESTERN AUSTRALIA



## Clearing Permit Decision Report

### 1. Application details and outcome

#### 1.1. Permit application details

<b>Permit number:</b>	CPS 6020/4
<b>Permit type:</b>	Purpose permit
<b>Applicant name:</b>	Main Roads Western Australia
<b>Application received:</b>	11 June 2020
<b>Application area:</b>	812 hectares
<b>Purpose of clearing:</b>	Clearing for the purpose of constructing roads, access tracks, construction camps, bore sites, gravel pits and laydown areas.
<b>Method of clearing:</b>	Mechanical Removal
<b>Property:</b>	Lot 182 on Deposited Plan 28412, Minilya Lot 285 on Deposited Plan 30477, Minilya Lot 241 on Deposited Plan 219245, Minilya Lot 179 on Deposited Plan 220605, Lyndon Lot 286 on Deposited Plan 30478, Lyndon Lot 287 on Deposited Plan 30479, Lyndon and Yannarie Lot 174 on Deposited Plan 220553, Lyndon and Yannarie Lot 158 on Deposited Plan 189075, Lyndon Lot 171 on Deposited Plan 238297, Lyndon Lot 289 on Deposited Plan 30480, Exmouth Gulf Lot 190 on Deposited Plan 227904, Exmouth Gulf Lot 290 on Deposited Plan 30480, Exmouth Gulf Lot 288 on Deposited Plan 30480, Yannarie and Lyndon Lot 172 on Deposited Plan 238297, Yannarie Lot 165 on Deposited Plan 220784, Yannarie Lot 320 on Deposited Plan 68269, Yannarie Lot 291 on Deposited Plan 30481, Yannarie Lot 292 on Deposited Plan 30482, Yannarie Lot 293 on Deposited Plan 30483, Yannarie Lot 170 on Deposited Plan 220393, Yannarie Lot 74 on Deposited Plan 175273, Lyndon North West Coastal Highway road reserves (PIN 11730981, PIN 11728407, PIN 11728405, PIN 11728406, PIN 11728402, PIN 11728371, PIN 11728408), Lyndon and Yannarie Burkett Road reserve (PIN 11241801), Yannarie Towera Road reserve (PIN 11709012), Yannarie Yanrey Road reserve (PIN 11730661), Yannarie Mia Mia Road reserve (PIN 11709077, PIN 11709084, PIN 11709078), Lyndon Marrilla Road reserve (PIN 11728380, PIN 11728379, PIN 11728382), Lyndon and Yannarie Minilya-Exmouth Road reserve (PIN 11728365), Minilya Unnamed road reserves (PIN 11728397, PIN 11709079, PIN 11728370, PIN 11728372, PIN 11738178, PIN 11728394), Exmouth Gulf, Lyndon, Minilya and Yannarie
<b>Location (LGA area/s):</b>	Shire of Exmouth, Shire of Carnarvon, Shire of Ashburton
<b>Localities (suburb/s):</b>	Lyndon, Yannarie, Exmouth Gulf, Minilya



## 1.2. Description of clearing activities

This application is to amend the previously granted permit CPS 6020/3 to extend the duration of the permit by 5 years. The clearing envelope and total amount of vegetation applied to clear has remained unchanged from what was approved under CPS 6020/3. The majority of the vegetation applied to be cleared for the purpose of road construction and maintenance is contained within a 310 metre buffer on either side of the North West Coastal Highway road centreline (see Figure 1, Section 1.5). The other clearing areas are individual fragmented areas for access tracks, construction camps, bore sites, gravel pits and laydown areas.

## 1.3. Decision on application and key considerations

<b>Decision:</b>	Granted
<b>Decision date:</b>	1 September 2020
<b>Decision area:</b>	812 hectares (ha) of native vegetation as depicted in Section 1.5, below.

## 1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Water and Environmental Regulation (DWER) on 11 June 2020.

In undertaking the assessment, and in accordance with section 51O of the EP Act, the Delegated Officer has given consideration to the Clearing Principles in Schedule 5 of the EP Act (see Appendix D), relevant planning instruments, and any other pertinent matters they deemed relevant to the assessment (see Section 3).

In particular, the Delegated Officer has determined that:

- the clearing may have a significant impact on the conservation status of the Priority 1 species *Calandrinia sp. Nanutarra* (F. Obbens FO 08/18) and *Indigofera roseola*, given the presence of suitable habitat within the application area;
- given the presence of suitable habitat for the above mentioned P1 flora species and limited knowledge base of habitat preferences, the Delegated Officer has determined that potential impacts of the clearing can be managed accordingly through pre-clearing surveys and flora management conditions;
- given sections of the project have been delivered under previous clearing permits, the permit holder can mitigate the impacts of previous clearing through revegetation of the cleared areas no longer necessary for the purpose for which they were cleared;
- the implementation of a suitable weed management condition is appropriate to mitigate the impact of spreading weeds into adjacent vegetation.

The Delegated Officer also took into consideration the purpose of the clearing is to improve community safety by improving the conditions and safety of the North West Coastal Highway.

In determining to grant the amendment to the clearing permit CPS 6020/4, subject to conditions, the Delegated Officer found that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

1.5. Site map

Plan 6020/4

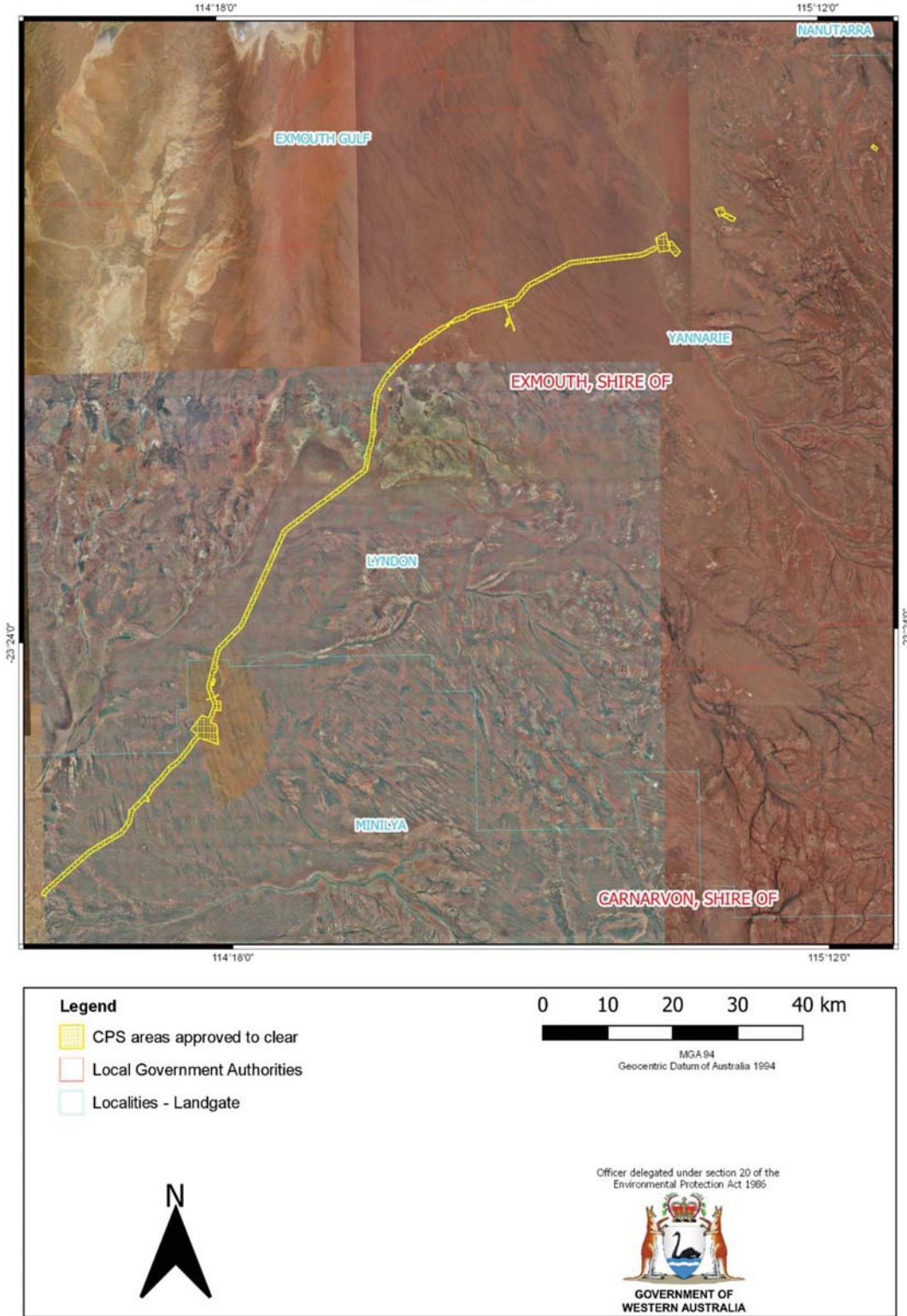


Figure 1. Map of the application area.



## 2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle;
2. the principle of intergenerational equity;
3. the principle of the conservation of biological diversity and ecological integrity; and
4. the polluter pays principle

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

## 3. Detailed assessment of application

### 3.1. Assessment of environmental impacts

In assessing the application in accordance with section 51O of the EP Act, the Delegated Officer has examined the application and site characteristics (Appendix C) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix D.

This assessment identified that the clearing may pose a risk to the environmental values of biological features and land and water resources, and that these required further consideration. The detailed consideration and assessment of the clearing impacts against the specific environmental values is provided below. Where the assessment found that the clearing presents an unacceptable risk to environmental values, conditions aimed at controlling and/or ameliorating the impacts have been imposed under sections 51H and 51I of the EP Act. These are also identified below.

#### 3.1.1. Environmental value: biological values (fauna) – Clearing Principle (b)

**Assessment:** A review of the available databases indicates fifty-two conservation significant fauna, as listed under the state *Biodiversity Conservation Act 2016* (BC Act) or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), have been recorded in the local area (50 km). Of these, five species have the potential to occur in the application area given their preferred habitat occurs within the area proposed to be cleared. These species include:

- ***Dasyercus blythi* - Brush-tailed mulgara (P4)** - This species occupies spinifex (*Triodia* spp.) grasslands, and burrows in flats between sand dunes. It is generally a solitary species that hunts at night, although it is not strictly nocturnal (IUCN, 2012b).
- ***Dasyurus hallucatus* - Northern quoll (Endangered)** - The northern quoll distribution extends north of Shark Bay, mainly within the Pilbara region and isolated population in the Kimberley region (DSEWPaC, 2012). This species is known to generally inhabit rocky areas such as ranges, escarpments, mesas, gorges, breakaways, boulder fields, major drainage lines or treed creek lines. This taxon also inhabits structurally diverse woodland or forest areas containing large diameter trees, termite mounds and hollow logs (DSEWPaC, 2011).
- ***Leggadina lakedownsensis* - Northern short-tailed mouse (P4)** - Monsoon tropical coast to semiarid areas in spinifex and tussock grasslands, samphire, sedgeland, *Acacia* shrublands, tropical *Eucalyptus* and *Melaleuca* woodlands and stony ranges.
- ***Liasis olivaceus barroni* - Pilbara olive python (Vulnerable)** - Arid to subhumid areas of Northern Australia. Often encountered along watercourses, especially those associated with rocky areas. Restricted to gorges and escarpments of the Pilbara and Gascoyne regions, isolated by the great sandy desert.

- ***Pseudomys chapmani* - Western pebble-mound mouse (P4)** - The Western Pebble-mound Mouse is found in areas of rocky, hummock grassland with little or no soil and an over storey of *Acacia*. Animals live in small family groups in burrows below mounds of pebbles (IUCN RedList, 2012a).

The original survey (GHD, 2013) mapped eight broad habitat types present within the application area. These include: Woodlands, Hummock grasslands on sandplain, open shrubland, floodplain, dune, Spinifex Steppe and highly disturbed. According to the survey, the habitat is relatively uniform across the application area, mainly consisting of low shrubland and Spinifex Steppe. There was some variation mapped in close proximity to the sand dune areas, which offer the highest value habitat as they present diversity from the majority of uniform habitat and provide shelter (GHD, 2013).

At the time of the original survey, the Australian Bustard (*Ardeotis australis*) and the bush stone-curlew (*Burhinus grallarius*) were listed as a Priority 4 species and observed in the middle and northern sections of the application area (GHD, 2013). Since then, both species has been removed from the Priority listed and are currently listed as Least Concern. These species are highly mobile and therefore would not be significantly impacted by the proposed clearing.

Based on the above, the application area likely contains suitable habitat for the five conservation significant fauna species. Due to the linear nature of the application area which follows North West Coastal Highway (NWCH) and given the local area, IBRA Bioregions and Beard Vegetation Associations all retaining close to 100% of their pre-European vegetation extents, it is unlikely the vegetation proposed to clear would offer significant fauna habitat that cannot be accessed in the abundant surrounding vegetation.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered **acceptable** in relation to this environmental value.

Conditions: No fauna management conditions required.

### 3.1.2. Environmental value: biological values (flora) – Clearing Principles (a) to (d)

Assessment: A review of the available databases indicate a total of twenty-three conservation significant flora have been recorded in the local area (50 km). Of these six are listed as Priority 1, five Priority two, eleven Priority 3 and one Priority 4 (DBC, 2007-).

Based on the previous survey results, previous records, habitat preferences and the habitat within the vegetation proposed to clear, twelve of the twenty-three species have the potential to occur in the application area. These include:

- *Abutilon sp. Onslow* (F. Smith s.n. 10/9/61) (P1)
- *Abutilon sp. Pritzelianum* (S. van Leeuwen 5095) (P3)
- *Acacia startii* (P3)
- *Calandrinia rubrisabulosa* (P3)
- *Calandrinia sp. Nanutarra* (F. Obbens FO 08/18) (P1)
- *Corchorus congener* (P3)
- *Eremophila cuneata* (P1)
- *Eremophila youngii subsp. Lepidota* (P4)
- *Gymnanthera cunninghamii* (P3)
- *Indigofera roseola* (P1)
- *Phyllanthus fuernrohrii* (P3)
- *Triumfetta echinata* (P3)

Of the Priority 1 species, *Abutilon sp. Onslow* (F. Smith s.n. 10/9/61) was targeted during the original survey in 2013, however, at the time it was known as *Abutilon uncinatum*. Its closest historical record is approximately 4 km north east of the most northern section of the application area, recorded in 1997. This species has 7 other records from 2006 to 2017, located 100 to 150 km to the north of the application area. The northern end of the application area is at the most southern known range of this species and any recordings would be a range extension of this species. Given the current known range of this species and the previous recordings to the north of the proposed clearing area, the vegetation within the application area is unlikely to provide significant habitat for this species.

*Eremophila cuneata* is a Priority 1 species associated with limestone outcrops. It has six recordings in the Shark Bay region, all recorded between 1973 and 1995. The local area (50 km) indicates a single recording from 2017 (WA Herbarium) located approximately 1.2 km from the Minilya-Exmouth Road centreline, identified as part of the GHD (2016) Strategic Material Areas Minilya-Exmouth Road SLK 54, 62-65, 175.1 and 205.5 Biological Survey. This recording indicated a range extension for this species. Given the previous recordings approximately 250 km to the



south in the Shark Bay area, and the species association with limestone outcrops, the vegetation applied to clear within the road reserve is unlikely to represent significant habitat for this species.

The Priority 1 species *Calandrinia sp. Nanutarra* (F. Obbens FO 08/18) and *Indigofera roseola* both have a single recording in the WA Herbarium. *C. nanutarra* (F. Obbens FO 08/18) was recorded within the application area in 2018. *Indigofera roseola* has one recording from 2006 in the WA Herbarium, located approximately 4 km east of the northern most section of the application area. A paper from 2015 also indicated a handful of recordings around the Nanutarra area, approximately 3.5 km north west at the junction of the Carnarvon, Pilbara and Gascoyne bioregions (Wilson & Rowe, 2015).

DWER requested advice from the Department of Biodiversity, Conservation and Attractions (DBCA) on the potential impacts to the Priority 1 species. The advice indicated the area of suitable habitat may be linear and occur along the road edge and given the lack of information about both species, pre-clearing surveys should be conducted within areas of suitable habitat (DBCA, 2020). DBCA advised caution in making assumptions in relation to distribution, preferred geology, soil type and vegetation associations from a single specimen as there is not enough data to indicate a trend.

The remaining species listed above are all known from multiple locations in Western Australia and given the linear nature of the applied clearing area following a major transport route in the north of Western Australia and the abundant remnant vegetation in the local area, IBRA Bioregions and mapped vegetation associations, the proposed clearing is unlikely to significantly impact on the conservation status of the remaining species.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered **acceptable, subject to conditions** in relation to this environmental value.

Conditions: To mitigate the impacts of the proposed clearing, DWER has imposed the following conditions on the permit:

- Pre-clearance surveys for conservation significant flora within areas of suitable habitat, in which the proposed clearing may have significant impact on the species.
- Flora management plan in areas where Priority 1 species cannot be avoided

### **3.2. Relevant planning instruments and other matters**

The Department of Water has advised that the applicant has been granted the following licences in relation to the project (DoW, 2014):

- A permit to interfere with the bed and banks of a watercourse (Lyndon River).
- A licence to take groundwater for dust suppression and construction purposes.
- A licence to construct and alter a well.

The Shire of Exmouth has advised that they have no objections to the proposed clearing.

The Shire of Carnarvon (2014) has advised that planning approval is not necessary.

The Department of Lands (2014) has given consent for Main Roads to apply for a clearing permit within the project area.

An Aboriginal Site of Significance is mapped within the application area. The applicant is advised to contact the department of Aboriginal Affairs in relation to their responsibilities under the Native title Act, 1994.

It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

## Appendix A – Additional information provided by applicant

No further information was provided by the applicant.

## Appendix B – Details of public submissions

No submissions were received in relation to this application.

## Appendix C – Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix D.

### 1. Site characteristics

Site characteristic	Details						
Local context	The proposed clearing area located along the North West Coastal Highway. Spatial data indicates the local area (50 km radius of the proposed clearing area) retains approximately 99% of the original native vegetation cover.						
Vegetation description	<p>A vegetation survey (GHD, 2013) indicates the vegetation within the proposed clearing area to consist of 31 different vegetation types through the application area. The full survey descriptions and mapping are available in Appendix F.</p> <p>This is consistent with the mapped vegetation types:</p> <ul style="list-style-type: none"> <li>• 11 - Medium woodland; coolabah (<i>Eucalyptus microtheca</i>) Northern Section</li> <li>• 95 - Hummock grasslands, shrub steppe; <i>acacia &amp; grevillea</i> over <i>Triodia basedowii</i> Middle Section, Southern Section</li> <li>• 98 - Hummock grasslands, shrub steppe; kanji over soft spinifex &amp; <i>Triodia basedowii</i> Northern Section,</li> <li>• 264 - Low woodland; <i>Acacia victoriae</i> &amp; snakewood</li> <li>• 307 - Low woodland; <i>bowgada</i> &amp; <i>Acacia subtressarogona</i></li> <li>• 1162 - Hummock grasslands, grass steppe; hard spinifex <i>Triodia wiseana</i> &amp; <i>t. basedowii</i></li> <li>• 1322 - Shrublands; <i>Acacia sclerosperma</i>, <i>A. victoriae</i> &amp; snakewood scrub</li> <li>• 1601 - Mosaic: Shrublands; snakewood &amp; <i>A. Victoria</i> scrub/ Hummock grasslands; grass steppe, hard spinifex, <i>Triodia basedowii</i></li> <li>• 2675 - Hummock grasslands, low tree &amp; shrub steppe; scattered eucalypts, kanji over <i>Triodia pungens</i> &amp; <i>T. basedowii</i></li> </ul>						
Vegetation condition	Vegetation survey (GHD, 2013) indicate the vegetation within the proposed clearing area ranges from Completely Degraded to Excellent (Keighery, 1994) condition. Given the entire range of condition classifications are applicable across the site, the full Keighery condition rating scale is provided in Appendix E, below. The full survey descriptions and mapping are available in Appendix F.						
Soil description	<p>According to the original biological survey report (GHD, 2013) from clearing permit CPS 6020/1, the application area occurs in the northern Carnarvon basin which lies to the west of the Pilbara Craton. This region is characterised by a mixture of alluvial plains, sandplains and dunefields. There are also areas of low hills and gently undulating lateritic uplands that have developed on uplifted sedimentary rocks. Generally red deep sands cover most of the sandplains (GHD, 2013).</p> <p>The application area is mapped across a broad range of soil types. These are described as (Schoknecht et al., 2004):</p> <table border="1"> <thead> <tr> <th>System Name</th> <th>Code</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Brown System</td> <td>235Br</td> <td>Sandy plains with sparse longitudinal dunes, supporting tall <i>acacia</i> shrublands.</td> </tr> </tbody> </table>	System Name	Code	Description	Brown System	235Br	Sandy plains with sparse longitudinal dunes, supporting tall <i>acacia</i> shrublands.
System Name	Code	Description					
Brown System	235Br	Sandy plains with sparse longitudinal dunes, supporting tall <i>acacia</i> shrublands.					



Site characteristic	Details		
	Delta System	235De	Flood plains and minor sandy banks, supporting low shrublands of bluebush and saltbush.
	Rous System	203Rs	Alluvial plains with sandy and duplex soils supporting snakewood and other <i>acacia</i> shrublands often with buffel grass understorey.
	Capricorn System	296Cp	Rugged sandstone hills, ridges, stony footslopes and interfluves supporting low <i>acacia</i> shrublands or hard spinifex grasslands with scattered shrubs.
	Uaroo System	203Ua	Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered <i>acacia</i> shrubs.
	Egerton System	294Eg	Highly dissected plains and slopes with sparse mulga shrublands or shrubby hard spinifex grasslands.
	Uaroo System	296Ua	Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered <i>acacia</i> shrubs.
	Stuart System	296St	Gently undulating stony plains supporting hard and soft spinifex grasslands and snakewood shrublands.
	Yalbalgo System	235Ya	Gently undulating sandplain with parallel linear sand dunes and interdunal swales; supporting <i>acacia</i> tall shrublands and sparse wanderrie grasses.
	Wash System	236Ws	Loamy alluvial plains and drainage zone, supporting low <i>acacia</i> woodlands or tall shrublands, often groved.
	Uaroo System	294Ua	Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered <i>acacia</i> shrubs.
	Giralia System	203Gi	Sandy plains with linear dunes and broad sandy swales supporting hummock grasslands of hard and soft spinifex with scattered <i>acacia</i> shrubs.
	Giralia System	236Gi	Sandy plains with linear dunes and broad sandy swales supporting hummock grasslands of hard and soft spinifex with scattered <i>acacia</i> shrubs.
	Spot System	235Sp	Alluvial plains with low, reticulate sandy banks and rises, supporting <i>acacia</i> tall shrublands with numerous low shrubs and some hard spinifex.
	Spot System	236Sp	Alluvial plains with low, reticulate sandy banks and rises, supporting <i>acacia</i> tall shrublands with numerous low shrubs and some hard spinifex.
	Winning System	236Wi	Low hills and broad plains supporting tall shrublands of snakewood and other acacias with some saltbush and soft spinifex.
River System	235Ri	Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of <i>eucalypts</i> sometimes with tussock grasses or spinifex.	
Gearle System	235Ge	Gently sloping alluvial plains, minor low rises and sloping marginal plains on siltstone supporting a grove pattern of snakewood and wait-a-while tall shrublands and saltbush and bluebush low shrublands.	

Site characteristic	Details		
	Sandal System	235Sd	Alluvial plains with numerous low sandy rises and banks with duplex and sandy soils supporting tall shrublands of <i>acacias</i> with currant bush; also low shrublands of Gascoyne bluebush and Gascoyne mulla-mulla.
	Uaroo System	236Ua	Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered acacia shrubs.
	Target System	235Tg	Gently sloping plains with sandy banks, narrow interbank plains and prominent drainage foci supporting <i>acacia</i> tall shrublands.
Land degradation risk	The application area covers a large range of soil types as shown in the table above. On a broad scale, the sandy soils have a moderate to high risk of wind erosion, low risk of water erosion, flooding, water logging, eutrophication, acidification and salinity and high water permeability.		
Waterbodies	<p>The desktop assessment and aerial imagery indicated that two minor, non-perennial watercourses transect the application area.</p> <p>The GHD survey (2013) found two defined watercourses intersect the application area. These include the Lyndon River and Yannarie River. The Yannarie River transects the NWCH at the Barradale Roadhouse and Lyndon River transects the most southern section of the Project Area at the Minilya-Exmouth Road turn-off. The majority of waterways and wetlands occurring within the region are considered ephemeral and generally flow or fill during seasonal rainfall events. Lake MacLeod is a non-perennial lake and is listed as a Nationally Important Wetland which is located approximately 13 km west of the Project Area. Other unnamed non-perennial lakes occur 1 km east of the Project Area.</p>		
Conservation areas	Part of the application area borders the previous Pastoral property Giralia Station. This land was handed back to the state in 2002 and has been managed as a conservation area. The land is a form lease holder lot proposed for formal conservation. The land covers more than 230,500 hectares and ranges from 60 km inland to the Exmouth Gulf Coast. In 2002, the property was acquired by DEC to be run as a National Park, however, as of 2020 no such tenure listing has been made. The original survey report states the property is listed as an International Union for Conservation of Nature (ICUN) on the online Natural Resource and Management (NRM) database (GHD, 2013).		
Climate and landform	<p>The Project Area occurs in the northern Carnarvon basin which lies to the west of the Pilbara Craton. This region is characterised by a mixture of alluvial plains, sandplains and dunefields. There are also areas of low hills and gently undulating lateritic uplands that have developed on uplifted sedimentary rocks. Generally red deep sands cover most of the sandplains (GHD, 2013; Tille, 2006).</p> <p>The climate experienced within the Project Area is arid, semi-arid to sub-tropical. Seasonal tropical cyclones can affect the region, resulting in periods of heavy rain, high temperatures and strong winds, but summers are generally dry (Kendrick and Mau, 2012). The closest Bureau of Meteorology (BoM) weather station to the Project Area is located at Learmonth (Station No. 005007). Recorded climatic data is summarised below:</p> <ul style="list-style-type: none"> <li>- Mean Daily Maximum Temperature: 24.2°C in July to 37.9°C in January;</li> <li>- Mean Daily Minimum Temperature: 11.4°C in July to 24.1°C in February;</li> <li>- Mean Annual Rainfall: 259.1 mm; and</li> <li>- Mean Annual Rain Days: 16.6 days.</li> </ul> <p>The original survey from 2013 identified two defined watercourses that intersect the application area. These include the Lyndon River and the Yannarie River. The Yannarie River transects the North West Coastal Highway (NWCH) at the Barradale Roadhouse and Lyndon River intersects at the most southern section of the application</p>		



Site characteristic	Details
	area at the Minilya-Exmouth Road turnoff. The majority of waterways and wetlands occurring within the region are considered ephemeral and generally flow or fill during seasonal rainfall events. Lake MacLeod is a non-perennial lake and is listed as a Nationally Important Wetland which is located approximately 13 km west of the Project Area.

## 2. Flora, fauna and ecosystem analysis

With consideration for the site characteristics set out above, relevant datasets (see Appendix G), and biological survey information, the following conservation significant flora and fauna species, and ecological communities may be impacted by the clearing.

Species / Ecological Community	Distance of closest record to application area (kilometres)	Suitable soil type? (flora, ecological community)	Suitable vegetation type? (flora, ecological community)	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
<b>Flora</b>					
<i>Abutilon sp. Onslow</i> (F. Smith s.n. 10/9/61)	3770.3	Y	Y	N/A	N
<i>Abutilon sp. Pritzelianum</i> (S. van Leeuwen 5095)	14337.0	Y	Y	N/A	N
<i>Acacia startii</i>	0.0	Y	Y	N/A	N
<i>Calandrinia rubrisabulosa</i>	27591.8	Y	Y	N/A	N
<i>Calandrinia sp. Nanutarra</i> (F. Obbens FO 08/18)	0.0	Y	Y	N/A	N
<i>Corchorus congener</i>	8936.6	Y	Y	N/A	N
<i>Eragrostis crateriformis</i>	42414.5	Y	Y	N/A	N
<i>Eremophila cuneata</i>	49533.5	Y	Y	N/A	N
<i>Eremophila youngii subsp. lepidota</i>	3563.8	Y	Y	N/A	N
<i>Gymnanthera cunninghamii</i>	10359.4	Y	Y	N/A	N
<i>Indigofera roseola</i>	4037.8	Y	Y	N/A	N
<i>Owenia acidula</i>	2022.6	Y	Y	N/A	N
<i>Phyllanthus fuernrohrii</i>	19506.7	Y	Y	N/A	N
<i>Triumfetta echinata</i>	9985.1	Y	Y	N/A	N
<b>Fauna</b>					
<i>Dasycercus blythi</i> (brush tailed mulgara)	4515.8889	N/A	N/A	Y	N
<i>Dasyurus hallucatus</i> (northern quoll)	34308.75	N/A	N/A	Y	N

Species / Ecological Community	Distance of closest record to application area (kilometres)	Suitable soil type? (flora, ecological community)	Suitable vegetation type? (flora, ecological community)	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
<b>Flora</b>					
<i>Leggadina lakedownensis</i> (northern short tailed mouse)	4171.4012	N/A	N/A	Y	N
<i>Liasis olivaceus barroni</i> (Olive python)	31040.312	N/A	N/A	Y	N
<i>Pseudomys chapmani</i> (western pebble mound mouse)	8499.083	N/A	N/A	Y	N

### 3. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	% remaining	Current extent in all DBCA managed land (ha)	% current extent in all DBCA managed land (proportion of pre-European extent)
<b>IBRA bioregion</b>					
Carnarvon	8,382,890	8,360,803	99	1,020,434.08	12.17
Gascoyne	18,075,219	18,067,441	99	1,855,508.22	10.27
<b>Beard Vegetation Association</b>					
95	1,223,137.31	1,223,000.24	99.99	48,804.33	3.99
98	309,629.71	309,605.59	99.99	55,608.76	17.96
152	306,407.02	306,306.40	99.97	12,971.32	4.23
264	581,127.75	581,123.31	100.00	21,862.12	3.76
307	476,645	476,645	100	61,151.98	12.83
641	29,027	29,027	100	1,320.61	4.55
1162	71,617	71,598	99	-	-
1322	245,308	245,308	100	3,666.28	1.49
1601	129,097	129,097	100	-	-
2675	351,230	351,230	100	134,501.35	38.29
<b>Local Area</b>					
50 km radius	2604537.79	2604082.85	99.98	-	-



## Appendix D – Assessment against the Clearing Principles

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The application areas contains suitable habitat for the conservation significant flora and fauna species listed in the table above. The previous survey identified two Priority flora species within the survey area (GHD, 2013). Recent WA Herbarium records indicated the P1 species <i>Calandrinia sp. Nanutarra (F. Obbens FO 08/18)</i> is located within the clearing area, recorded in 2017.</p>	May be at variance	Yes Refer to Section 3.2.2 above.
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The proposed clearing area contains suitable habitat for five different conservation significant fauna species. However, given the linear nature of the application area and the local area, IBRA Bioregions and Beard Vegetation Associations all retaining close to 100% of their pre-European vegetation extents, it is unlikely the vegetation proposed to clear would represent significant fauna habitat that cannot be accessed in the abundant surrounding vegetation.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1 above.
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>The proposed clearing area is unlikely to contain habitat for flora species listed as Threatened under the BC Act 2016.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The proposed clearing area does not contain species that are representative of a state listed threatened ecological community (TEC) under the BC Act 2016.</p>	Not likely to be at variance	No
<b>Environmental values: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. Vegetation in the proposed clearing area is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<p><u>Principle (h):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>A small section of the application area borders the proposed Ex-Giralia Station Conservation Area. Given the size of the application area and linear nature of the application area, the proposed clearing is unlikely to directly impact the environmental values of the conservation area. Indirect impacts such as weed invasion will be managed through conditions on the permit.</p>	Not likely to be at variance.	No
<b>Environmental values: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>The Lyndon River (classified as a major river) and Yannarie River (classified as a minor perennial river) intersect the application area. The point at which the Lyndon River crosses the application area is proposed to be dredged and widened in order to minimise the risk of flooding. Given the application area extends along the river for approximately one kilometre each side of the road centre line, the proposed clearing is at variance to this principle. However, given the watercourse is ephemeral and only runs during periods of high rainfall, the clearing is unlikely to cause an unacceptable environmental impact.</p>	Is at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>Given the linear nature of the application area, the highly vegetated local area and revegetation of temporarily cleared areas, the removal of the vegetation within the application area is unlikely to cause wind erosion, salinity or eutrophication. Part of the clearing will occur within close proximity of the Lyndon River and therefore may cause water erosion. The applicant will manage the area as a floodway and revegetate the temporarily cleared areas, and therefore, will no cause appreciable land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>The Lyndon River (classified as a major river) and Yannarie River (classified as a minor perennial river) intersect the application area. The point at which the Lyndon River crosses the application area is proposed to be dredged and widened in order to minimise the risk of flooding. As the applicant intends on managing the area as a floodway and revegetating temporarily cleared areas, this sedimentation is likely to be of a limited duration. Given the rivers are ephemeral and only run during times of high rainfall, the clearing is unlikely to cause negative impacts to the surface or underground water.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<p><u>Assessment:</u></p> <p>The applicant intends to manage the lands around the Lyndon River and Yannarie River as a floodway and will revegetate any temporarily cleared areas. Given the rivers are classified as Ephemeral and only run after significant rainfall events, the proposed clearing is unlikely increase the intensity or incidences of flooding.</p>		


### Appendix E – Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.






#### Measuring Vegetation Condition for the South West and Interzone Botanical Province (Keighery, 1994)





Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very Good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

### Appendix F – Biological survey information excerpts / photographs of the vegetation




Vegetation Type Number	Vegetation Type	Description	Photo	Location	Condition
VT1N	Scattered Emergent Woodland over Open Shrubland over Hummock Grassland	Scattered Emergent Woodland of <i>Corymbia zygophylla</i> over High Open Shrubland of Scattered <i>Acacia inaequilatera</i> over Low Open Woodland of <i>Corymbia candida</i> over Open Shrubland of <i>Acacia ancistrocarpa</i> over Low Shrubland of <i>Acacia stellaticeps</i> , <i>Petallostylis cassioides</i> and <i>Tephrosia uniovulata</i> over Hummock Grassland of <i>Triodia basedowii</i> over Very Open Herbs of <i>Mollugo molluginea</i> .		Northern Section	Excellent to Completely Degraded







VT2N	Shrubland over Low Shrubland over Hummock Grassland	Shrubland of <i>Acacia xiphophylla</i> over Low Shrubland of <i>Rhagodia eremea</i> , <i>Ptilotus divaricatus</i> and <i>Atriplex amnicola</i> over Open Tussock Grassland of * <i>Cenchrus ciliaris</i> , <i>Aristida contorta</i> and <i>A. holathera</i> .		Northern Section	Very Good
VT3N	Low Open Woodland over High Open Shrubland over Hummock Grassland over Very Open Herbs	Low Open Woodland of <i>Owenia reticulata</i> over High Shrubland of <i>Acacia victoriae</i> , <i>Grevillea gordoniana</i> , <i>G. stenobotyra</i> over Shrubland of <i>Scaevola sericophylla</i> , <i>Acacia stellaticeps</i> and <i>Quoya loxocarpa</i> over Open Hummock Grassland of <i>Triodia schinzii</i> over Very Open Herb of <i>Tribulus hirsutus</i> .		Northern Section	Excellent to Good
VT4N	Open Shrubland over Low Open Shrubland over Hummock Grasslands	Open Shrubland of <i>Hakea stenophylla</i> , <i>Acacia bivenosa</i> and <i>Grevillea eriostachya</i> over Low Open Shrubland of <i>Mirbelia viminialis</i> , <i>Tephrosia uniovulata</i> and <i>Acacia sclerosperma</i> over hummock grassland of <i>Triodia basedowii</i> .		Northern Section	Excellent to Completely Degraded
VT5N	High Open Shrubland over Open Shrubland over Low Open Shrubland over Open Hummock Grasslands	High Open Shrubland of <i>Acacia subtessarogona</i> , <i>A. ancistrocarpa</i> over Open Shrubland of <i>Stylobasium spathalatum</i> over Low Open Shrubland of <i>Solanum lasiophyllum</i> over Open Hummock Grasslands of <i>Triodia basedowii</i> , <i>Aristida holathera</i> and <i>Enneapogon caerulescens</i>		Northern Section	Completely Degraded
VT6N	Open Shrubland over Low Open Shrubland over Hummock Grasslands in disturbed area	Open Shrubland of <i>Acacia ancistrocarpa</i> , <i>A. inaequilatera</i> , <i>Solanum phlomoides</i> over Low Open Shrubland of <i>Corchorus lasiocarpus</i> , <i>Keraudrenia velutina</i> , <i>Sida cardiophylla</i> over Hummock Grassland of <i>Triodia basedowii</i> in disturbed area.		Northern Section	Completely Degraded






VT1M	Open High Shrubland over Low Open Shrubland over Hummock Grasslands on Sandplain	Open High Shrubland of Scattered <i>Acacia synchronicia</i> , <i>Hakea cardiophylla</i> and <i>A. ancistrocarpa</i> over Shrubland of <i>Hakea stenophylla</i> , <i>Stylobasium spathulatum</i> and <i>Grevillea eriostachya</i> over Low Shrubland of <i>A. stellaticeps</i> , <i>Grevillea eriostachya</i> and <i>Ptilotus astrolasis</i> over Hummock Grassland of <i>Triodia basedowii</i> on Sandplain.		Middle Section	Excellent to Good
VT2N	Low Open Woodland over Open High Shrubland over Shrubland over Hummock Grassland on Sandplain	Low Woodland of <i>Corymbia opacu</i> over High Shrubland of Scattered <i>Acacia bivenosa</i> , <i>A. ancistrocarpa</i> and <i>Stylobasium spathulatum</i> over Hummock Grassland of <i>Triodia basedowii</i> on Sandplain.		Middle Section	Very good
VT3N	High Open Shrubland to Scattered High Shrubland over Open Heath over Low Open Shrubland over Open Tussock Grassland on Sandy-clay Floodplain	High Open Shrubland to Scattered High Shrubland of <i>Acacia synchronicia</i> , <i>A. subtessarogona</i> and <i>A. tetragonophylla</i> over Open Heath of <i>Acacia sclerosperma</i> , <i>Stylobasium spathulatum</i> and <i>Eremophila cuneifolia</i> over Low Open Shrubland of <i>Senna artemisioides</i> subsp. <i>helmsii</i> x <i>oligophylla</i> , <i>Ptilotus astrolasis</i> and <i>Solanum lasiophyllum</i> over Hummock Grassland of <i>Triodia basedowii</i> over Tussock Grassland of <i>Aristida holathera</i> , <i>*Cenchrus ciliaris</i> and <i>Eragrostis eriopoda</i> on Sandy Clay Floodplain.		Middle Section	Very Good
VT4N	Low Woodland to Scattered Low Trees Shrubland in Claypan Depression over High Open Shrubland over Open Shrubland over Hummock Grassland over Tussock Grassland	Low Woodland of <i>Eucalyptus victrix</i> to Scattered Low Trees Shrubland of <i>Lachnostachys eriobotrya</i> along edges of claypan depressions over High Shrubland to Scattered Shrubland of <i>Acacia bivenosa</i> , <i>A. sclerosperma</i> and <i>A. tetragonophylla</i> over Open Hummock Grasslands of <i>Triodia basedowii</i> over Open Tussock Grassland of <i>Eragrostis</i> sp., <i>Aristida</i> sp. and <i>*Cenchrus ciliaris</i> on Floodplain and associated claypan depressions.		Middle Section	Very Good







VT5N	High Shrubland to High Open Shrubland over Shrubland to Open Shrubland over Low Open Shrubland over Hummock Grassland to Very Open Hummock Grassland on Stony Sandy Clay	High Shrubland to High Open Shrubland of <i>Acacia subtessarogona</i> , <i>A. pruinocarpa</i> and <i>A. synchronicia</i> over Shrubland to Open Shrubland of <i>Acacia bivenosa</i> , <i>Eremophila cuneifolia</i> and <i>A. ancistrocarpa</i> over Low Open Shrubland of <i>Senna</i> spp, <i>Solanum lasiophyllum</i> and <i>Scaevola acacioides</i> over Hummock Grassland to Very Open Hummock Grassland of <i>Triodia basedowii</i> and <i>T. epacta</i> on Stony Sandy-clay.		Middle Section	Very Good to Good
VT6N	Open High Scattered Shrubland over Low Shrubland to Low Open Scattered Shrubland over Open Tussock Grassland on Stony Claypan	Open High Shrubland of Scattered <i>Acacia cuspidifolia</i> , <i>A. xiphophylla</i> and <i>A. synchronicia</i> over Shrubland to Open Shrubland of * <i>Vachellia farnesiana</i> , <i>A. tetragonophylla</i> and <i>A. cuspidifolia</i> dominating minor drainage lines and old material pits over Low Open Shrubland to Low Scattered Shrubland of <i>Eremophila cuneifolia</i> , <i>Ptilotus polakii</i> and <i>Sclerolaena</i> spp. over Open Tussock Grassland of <i>Eragrostis xerophila</i> , * <i>Cenchrus ciliaris</i> and <i>Aristida</i> sp. on Stony Claypan.		Middle Section	Good to Completely Degraded
VT7N	Low Woodland to Scattered Open High Shrubland to Scattered High Shrubland over Open Shrubland over Hummock Grassland over Open Tussock Grassland on Claypan	Low Woodland of <i>Eucalyptus victrix</i> over High Shrubland of Scattered <i>Acacia tetragonophylla</i> and <i>A. synchronicia</i> over Open Shrubland of <i>A. sclerosperma</i> , <i>Mirbelia viminalis</i> and <i>Scaevola spinescens</i> over Open Hummock Grassland of <i>Triodia basedowii</i> over Open Tussock Grassland of * <i>Cenchrus ciliaris</i> , <i>Aristida holathera</i> and <i>Eragrostis eriopoda</i> over <i>Alternanthera nodiflora</i> , <i>Ptilotus murrayii</i> and <i>Marselia</i> sp. on Claypan or Seasonal Drainage Depression.		Middle Section	Excellent to Good
VT8M	Open Scattered High Shrubland over Low Open Shrubland over Hummock Grassland over Very Open Tussock Grassland on loamy sandy plain	High Open Shrubland of Scattered <i>Acacia sericophylla</i> , <i>Grevillea eriostachya</i> , and <i>Hakea chrodophylla</i> over Shrubland of <i>A. sclerosperma</i> , <i>G. eriostachya</i> and <i>H. stenophylla</i> over Low Open Shrubland of <i>A. stellaticeps</i> and <i>Ptilotus astrolasius</i> over Hummock Grassland of <i>Triodia schinzii</i> and <i>T. basedowii</i> over Very Open Tussock Grassland of <i>Aristida holathera</i> and <i>Eragrostis eriopoda</i> on Loamy Sandplain.	No photo available.	Middle Section	Excellent to Completely Degraded





VT1S	Mixed <i>Acacia</i> Shrubland on Sandy Rise	Open mix <i>Acacia</i> shrubland on sandy rises of <i>Acacia ramulosa</i> var. <i>linophylla</i> , <i>Acacia sclerosperma</i> , <i>Acacia synchronicia</i> , <i>Acacia tetragonophylla</i> , <i>Alectryon oleifolius</i> over <i>Eremophila forrestii</i> over Tussock Grasslands of * <i>Cenchrus ciliaris</i> .		Southern Section	Good to Completely Degraded
VT2S	Low open Shrubland	Low open Shrubland of <i>Maireana polypterygia</i> over <i>Stemodia viscosa</i> over <i>Erianchne xerophila</i> with scattered emergent <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> , <i>Hakea preissii</i> and <i>Vachellia farnesiana</i> .	No photo available.	Southern Section	Good to Completely Degraded
VT3S	Mixed <i>Acacia</i> Shrubland on Mixed Soils	Mix <i>Acacia</i> Shrubland on mixed soils of <i>Acacia xiphophylla</i> , <i>Acacia synchronicia</i> , <i>Acacia victoriae</i> , <i>Hakea preissii</i> over <i>Eremophila pterocarpa</i> over <i>Neobassia astrocarpa</i> , <i>Scleroleana eriacantha</i> , <i>Atriplex codonocarpa</i> over * <i>Cenchrus ciliaris</i> .		Southern Section	Very Good to Degraded
VT4S	Mixed <i>Acacia</i> Shrubland on Floodway	Mix <i>Acacia</i> Shrubland on floodplain of <i>Acacia xiphophylla</i> , <i>Acacia synchronicia</i> , <i>Acacia victoriae</i> , <i>Hakea preissii</i> over <i>Eremophila pterocarpa</i> and <i>Eremophila youngii</i> subsp. <i>lepidota</i> over <i>Neobassia astrocarpa</i> , <i>Scleroleana eriacantha</i> , <i>Atriplex codonocarpa</i> over * <i>Cenchrus ciliaris</i> .		Southern Section	Very Good to Degraded
VT5S	Salk lake pan	Flat expanses of ground covered with salt and other minerals.		Southern Section	Very Good

VT6S	Low Open Shrubland on Dune	Low shrubland on dune crest of <i>Verticordia forrestii</i> , <i>Calytrix truncatifolia</i> , <i>Quoya loxocarpa</i> over <i>Triodia schinzii</i> with scattered emergent <i>Grevillea stenobotrya</i> , <i>Acacia ramulosa</i> var. <i>linophylla</i> , <i>Acacia sclerosperma</i> , <i>Acacia synchronicia</i> , <i>Acacia tetragonophylla</i> , <i>Alectryon oleifolius</i> over <i>Eremophila forrestii</i> over * <i>Cenchrus ciliaris</i> .		Southern Section	Very Good to Degraded
VT7S	Mixed Acacia Shrubland on Mixed Soils	Mix Acacia Shrubland on mixed soils of <i>Acacia xiphophylla</i> , <i>Acacia synchronicia</i> , <i>Acacia victoriae</i> , <i>Hakea preissii</i> over <i>Eremophila pterocarpa</i> over <i>Neobassia astrocarpa</i> , <i>Scleroleana eriacantha</i> , <i>Atriplex codonocarpa</i> over Spinifex steppe of <i>Triodia basedowii</i> and <i>Triodia schinzii</i> over * <i>Cenchrus ciliaris</i> .		Southern Section	Very Good to Completely Degraded
VT8S	Spinifex Steppe	Spinifex steppe of <i>Triodia basedowii</i> and <i>Triodia schinzii</i> with scattered emergent <i>Acacia xiphophylla</i> , <i>Acacia synchronicia</i> , <i>Acacia victoriae</i> , <i>Hakea preissii</i> over <i>Eremophila pterocarpa</i> .		Southern Section	Very Good to Completely Degraded
VT9S	Open Hummock Grasslands	Open Grasslands dominated by <i>Triodia basedowii</i> , <i>Aristida holathera</i> , <i>Aristida contorta</i> , * <i>Cenchrus ciliaris</i> with Scattered Emergent Shrubs of <i>Grevillea eriostachya</i> , <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Acacia sclerosperma</i> , <i>Hakea stenophylla</i> subsp. <i>stenophylla</i> over <i>Ptilotus polystachyus</i> , <i>Ptilotus obovatus</i> and <i>Salsola</i> sp.		Southern Section	Excellent to Completely Degraded
VT10S	Mixed Acacia Shrubland over Hummock Grass	Mixed Acacia scrub of <i>Acacia xiphophylla</i> with scattered emergent <i>Acacia ramulosa</i> var. <i>linophylla</i> , <i>Acacia tetragonophylla</i> over <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Acacia synchronicia</i> , <i>Acacia citrinoviridis</i> , <i>Eremophila cuneifolia</i> , <i>Eremophila forrestii</i> subsp. <i>forrestii</i> over <i>Solanum lasiophyllum</i> , <i>Ptilotus divaricatus</i> over grasses of <i>Triodia basedowii</i> , <i>Aristida holathera</i> , * <i>Cenchrus ciliaris</i> .		Southern Section	Very Good to Completely Degraded



VT11S	High Open Woodland	High Open Woodland of <i>Eucalyptus camaldulensis</i> with scattered <i>Melaleuca glomerata</i> , <i>Acacia pyrifolia</i> .		Southern Section	Good to Completely Degraded
VT12S	High Shrubland on Rocky Sandplain	Open shrubland of <i>Acacia synchronicia</i> , <i>A. sclerosperma</i> subsp. <i>sclerosperma</i> with <i>Grevillea eriostachya</i> , <i>A. tetragonophylla</i> over Low Shrubland of <i>Acacia gregorii</i> , <i>Eremophila cuneifolia</i> , <i>Melaleuca cardiophylla</i> with <i>Stylobasium spathulatum</i> , <i>Eremophila latrobei</i> , <i>Ptilotus obovatus</i> , <i>Echylaena tomentosa</i> over Hummock Grasslands of <i>Triodia basedowii</i> with Tussock Grassland of * <i>Cenchrus ciliaris</i> , <i>Eragrostis pergracilis</i> , <i>Aristida holathera</i> , <i>Eriachne aristidea</i> on rocky sandplain.		Southern Section	Very Good to Completely Degraded
VT13S	High Open Shrubland	High Shrubland of <i>Acacia xiphophylla</i> and <i>Acacia synchronicia</i> over Scattered Shrubs of <i>Acacia bivenosa</i> over Low Scattered Shrubs of <i>Echylaena tomentosa</i> over Hummock Grassland of <i>Triodia wiseana</i> .		Southern Section	Excellent to Good
VT14S	Shrubland on Floodplain	Heath dominated by <i>Eremophila cuneifolia</i> with Scattered <i>Eremophila pterocarpa</i> subsp. <i>pterocarpa</i> , <i>Acacia ramulosa</i> , <i>Senna glutinosa</i> , <i>Lawrencia densiflora</i> over Scatterd Low Shrubs of <i>Maireana lobiflora</i> , <i>Ptilotus divaricatus</i> , <i>Sclerolaena eriacantha</i> over Scattered Tussock Grasses of <i>Enneapogon caerulescens</i> on floodplain.		Southern Section	Excellent to Good



VT15S	Spinifex Steppe	Spinifex stepped with <i>Acacia stellaticeps</i> , <i>Acacia wiseana</i> , <i>Acacia sclerosperma</i> , <i>Hakea stenophylla</i> , <i>Grevillea eriostrachya</i> over <i>Triodia basedowii</i> and <i>Triodia schinzii</i> .		Southern Section	Excellent to Good
VT16S	Highly Disturbed	Cleared/Degraded typically cleared with scattered emergent shrubs, trees and weeds. Includes areas of roads/tracks and existing material pits.		Southern Section	Degraded to Completely Degraded

## Appendix G – References and databases

### 1. GIS datasets

Publicly available GIS Databases used (sourced from [www.data.wa.gov.au](http://www.data.wa.gov.au)):

- Aboriginal Heritage Places (DPLH-001)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Soil and Landscape Mapping – Best Available

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
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