



# Bussell Highway Duplication Stage 2 - Hutton to Sabina

WESTERN RINGTAIL POSSUM MANAGEMENT PLAN

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# Amendments

Author / Reviewer	Name and Position	Revision Number	Revision Date
Author	G Watson Senior Environmental Officer	Draft	30/04/2021
Review	N McCarthy Senior Environmental Officer	Draft	26/05/2021
Author	G Watson Senior Environmental Officer	0	01/06/2021
Review	Paul West Senior Environmental Officer	0	01/06/2021
Author	G Watson Senior Environmental Officer	1	25/6/2021
Review	Paul West Senior Environmental Officer	1	28/06/2021

# 1 BACKGROUND

## 1.1 Background

Main Roads Western Australia (Main Roads) is progressing the development of a second lane of dual carriageway along a section of Bussell Highway to improve the level of service and safety of the highway.

The Bussell Highway Duplication Stage 2 – Hutton to Sabina (31.15 to 44.0 SLK) Project (the Project) is situated in the Shire of Capel and City of Busselton, approximately 200 km south of Perth (Figure 1).

The Project involves the construction of a 12.8 km two-lane carriageway (southbound) to duplicate the existing carriageway effectively between Hutton Road and the Sabina River bridge and other road infrastructure, including but not limited to bridges, culverts, lighting, noise barriers, fencing, landscaping, road safety barriers and signs.

The Project will upgrade this section of Bussell Highway to a four-lane highway consisting of two carriageways. Once the new southbound carriageway is constructed, the existing single carriageway will become the northbound carriageway. The new carriageway is expected to be typically 31 metres (m) wide and will accommodate:

- A fully sealed 2.5 m wide left shoulder,
- A fully sealed 1.5 m wide right shoulder,
- Two 3.5 m wide lanes, and
- Drainage and other infrastructure.

It is anticipated that construction of Stage 2 will commence in July 2021 and be completed in early 2024.

The Project will require the clearing of 27.3 ha of native vegetation within a 124.9 ha Development Area, of which 24 ha provides potential habitat for the conservation significant (Critically Endangered/Threatened) Western Ringtail Possum (*Pseudocheirus occidentalis*) (WRP). Evidence of the presence of WRP was recorded during surveys of the Project site including individual animals, scats and dreys during the 2018 (Harewood, 2018) and 2019/20 (Biota, 2020) surveys. Fauna surveys estimate that the Project may potentially intrude on the home ranges of up to 35 individual WRPs.

# 2 OBJECTIVE AND SCOPE

## 2.1 Objective

This WRP Management Plan (WRPMP) has been prepared to:

- Reduce potential impacts on individual WRPs, and
- Provide for the management of any WRPs encountered during road construction.

The management measures have been developed with the objective of minimising the risk of injury or mortality to any WRP encountered during the clearing operations.

## 2.2 Scope

The WRPMP highlights the key management actions to be undertaken during clearing operations. The scope of the WRPMP is to define actions to manage interactions with WRP during clearing operations and to allocate areas of responsibility for the implementation of those actions. Timeframes for the completion of actions and monitoring are also provided.

### 3 MANAGEMENT APPROACH

The Western Ringtail Possum (*Pseudocheirus occidentalis*) Recovery Plan (DPaW, 2017) has informed the development of this Management Plan.

The approach to WRP management during the clearing operations is focused on pre-clearing surveys, WRP monitoring during clearing works, timing of clearing (to minimise the risk of mortality to immature juvenile animals), sensitive clearing practises and staged clearing operations to encourage WRP to move into adjacent habitat beyond the clearing area. Although primarily arboreal, WRPs are also known to move on the ground.

The approach of allowing WRP to self-relocate to adjacent habitat (where suitable habitat exists) has been selected over translocation as it is considered to provide the best outcome in terms of animal welfare. The success rates of documented WRP translocation projects is poor, and as yet no successful methodology has been developed or implemented (Clarke 2011; De Tores 2004).

Allowing WRP to relocate/disperse to adjacent habitat of their own accord avoids the need for handling animals, substantially reducing the likelihood of WRP being put under undue stress. Their mobile nature also makes their familiarity with adjacent habitat, which may already be part of their existing home range likely. Given the linear nature of the majority of clearing, the size of individual home ranges, and the close proximity to the refuge sites, it is anticipated that many WRPs will initially relocate into other parts of their home range or to an area they have some familiarity with.

WRP management during clearing operations will be through:

- Natural dispersal - where animals will be encouraged by managed (staged and directional) clearing to move into adjacent habitat abutting or in close proximity to where the animal is present.
- Assisted dispersal – where animals will be moved to nearby WRP refuge sites where suitable habitat is not available abutting or in close proximity to where the animal occurs. The refuge sites are located within land managed by the Department and Biodiversity, Conservation and Attractions (DBCA) and have been identified by officers from its Bunbury office.

Maps 1-5 (Appendix B) show the proposed assisted dispersal management areas and the DBCA nominated refuge sites and release points. The boundaries of these areas may be modified marginally based on WRP survey results immediately prior to clearing operations.

WRP management during clearing in the vicinity of Sues Road and the Sabina River may be through a combination of natural and assisted dispersal depending on the number of animals encountered.

The timing of the clearing is planned to avoid clearing during the period when most breeding females have unweaned young animals, typically September and October. This approach has been planned to minimise the risk of mortality to immature juvenile animals.

## 4 IMPLEMENTATION OF THE WRPMP

### 4.1 Implementation Responsibility

Main Roads is responsible for the implementation of this WRPMP. Details of management measures, responsibilities, monitoring and reporting requirements are detailed in Appendix A. Details of Natural Dispersal and Assisted Dispersal areas are detailed in Appendix B.

Appendix A and B will be incorporated into the project specific Construction Environmental Management Plan (CEMP) to be prepared for the clearing operations, and included in contract documents and specifications used by Main Roads in engaging contractors and sub-contractors to work on the Project.

## 4.2 Monitoring

A suitably qualified and experienced environmental contractor shall monitor compliance with the WRPMP during the construction period. Monitoring of work activities (including subcontractors) must be conducted as an on-going activity during the normal supervision of works. Records of such surveillance must be kept if any significant issues are observed and should be documented as an information sheet or a diary note as appropriate.

## 4.3 Project Delivery and Accountability

Main Roads will manage the Project which will be implemented by appropriately experienced construction Contractors through a formal contractual arrangement.

For the purposes of this WRPMP, the following definitions of roles and responsibilities have been used:

Role Defined in HMP	Potential Roles
<b>Project Manager</b>	Main Roads Delivery Manager Roads, Main Roads Contract Manager or Main Roads Superintendent's Representative
<b>Contractor</b>	Private Construction Contractor engaged by Main Roads
<b>Construction Engineer</b>	Main Roads Site Manager, Main Roads Contract Manager and/or Construction Contractor Site Manager
<b>Environmental Officer</b>	Main Roads Project Environmental Manager or Environmental Officer and/or Contractor's Site Environmental Representative
<b>Western Ringtail Possum Specialist</b>	A person who holds a tertiary qualification specialising in environmental science or equivalent, has a minimum of two years work experience in western ringtail possum ( <i>Pseudocheirus occidentalis</i> ) identification, surveys of western ringtail possums and capture and handling of western ringtail possums and holds a valid fauna licence issued under the <i>Biodiversity Conservation Act 2016</i>

## 4.4 Communication

WRP management will be communicated at induction, toolbox and/or contract meetings. Relevant management measures detailed in the WRPMP will be communicated to project and construction personnel, (including sub-contractors) prior to the commencement of project activities and during project implementation.

# 5 APPENDICES

Appendix	Title
<b>Figure 1</b>	Project Locality Plan
<b>Appendix A</b>	Western Ringtail Possum Management Plan
<b>Appendix B</b>	Western Ringtail Possum Natural and Assisted Dispersal Areas

Figure 1: Project Locality Plan



## Appendix A: Western Ringtail Possum Management Plan

Bussell Highway Duplication Stage 2 – Hutton to Sabina – WRPMP				
Project Component	Management Action	Monitoring Program	Responsible Person	Timeframe
<i>Pre-construction (Pre-clearing)</i>				
Western Ringtail Possum Specialist	Main Roads shall engage a Western Ringtail Possum Specialist with the appropriate licences to take, disturb or relocate any fauna (Section 40 authority), including WRP on-site.	A copy of the Western Ringtail Possum Specialists licence will be recorded in TRIM and a copy provided to the DBCA South West Regions (SWR) Wildlife Officer.	Environmental Officer	Pre-construction period
Contract documents / Specifications	WRPMP requirements shall be included in contract documents and specifications used by Main Roads in engaging contractors and sub-contractors working on the Project.	Pre-construction documentation	Project Manager	Pre-construction period
<i>Construction (Clearing)</i>				
Communications	Site inductions and pre-start toolbox meetings shall include education regarding WRP management to avoid impacts as far as possible through awareness and behaviour change.	Construction surveillance	Construction Engineer	Construction period
	WRP management will be communicated (as appropriate) at: <ul style="list-style-type: none"> <li>• inductions,</li> <li>• toolbox meetings, and</li> <li>• contract meetings.</li> </ul>	Construction surveillance	Construction Engineer	Construction period
	Relevant management measures detailed in the WRPMP will be communicated to construction personnel, (including sub-contractors) prior to the commencement of clearing activities and during project implementation.	Construction surveillance	Construction Engineer	Construction period
Environmental incidents	Environmental incidents shall be reported through Main Roads Incident Reporting Process (hard copy incident reports or web based EQSafe).	Construction surveillance	Project Manager	Construction period
Clearing	Clearing of vegetation shall be limited to the area defined as the “approved clearing disturbance envelope”.	Construction surveillance	Project Manager	Construction period
	The extent of clearing shall be identified and mark on the ground prior to the commencement of clearing operations.	Construction surveillance	Project Manager	Construction period
	Significant trees within 0-2m of the clearing line shall be assessed and, where possible, retained.	Construction surveillance	Project Manager / Environmental Officer	Construction period
Western Ringtail Possum Specialist	A Western Ringtail Possum Specialist shall be on-site to monitor all clearing operations.	Construction surveillance	Project Manager / Construction Engineer	Construction period

<b>Bussell Highway Duplication Stage 2 – Hutton to Sabina – WRPMP</b>				
<b>Project Component</b>	<b>Management Action</b>	<b>Monitoring Program</b>	<b>Responsible Person</b>	<b>Timeframe</b>
Traffic Management	Traffic management will be put in place to reduce speed limits during clearing operations.	Construction surveillance	Project Manager / Construction Engineer	Construction period
	Visual message boards will be used to warn drivers of the potential for WRP to cross the road during clearing operations.	Construction surveillance	Project Manager / Construction Engineer	Construction period
WRP Management	A pre-clearing WRP search shall be conducted by the Western Ringtail Possum Specialist prior to clearing operations commencing to identify WRP within the clearing area.	Construction surveillance	Project Manager / Environmental Officer / Western Ringtail Possum Specialist	Construction period
	Prior to the commencement of clearing operations the WRP Assisted Dispersal management areas shall be defined and marked on the ground.	Construction surveillance	Project Manager / Environmental Officer	Construction period
	Prior to the commencement of clearing operations, WRP release points (trees) within the refuge sites shall be identified and GPS'ed / marked on the ground. The location of these release points shall be determined in agreement with DBCA South West Region (SWR). The locations of the agreed release points are presented in Table 1.	Construction surveillance	Project Manager / Environmental Officer/ Western Ringtail Possum Specialist	Construction period
	Clearing shall nominally commence adjacent to the highway and move towards vegetation outside of the disturbance envelope (if present).	Construction surveillance	Construction Engineer	Construction period
	Clearing shall be undertaken in stages and along one front towards habitat to be retained where possible to allow fauna to move from the clearing area into adjacent habitat.	Construction surveillance	Construction Engineer	Construction period
	Pre-clearing fauna searches shall be conducted by the Western Ringtail Possum Specialist immediately prior to and during clearing operations and will include hollows, dreys, ground debris, dense ground-level vegetation, fallen timber and logs.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	If WRP are observed during clearing operations, the tree containing the animal shall be left for up to 48 hours to allow for the animal to vacate, while clearing continues in adjacent vegetation. If the tree continues to be occupied after 48 hours, the animal will be coerced / moved to a safe area outside of the clearing footprint by the Western Ringtail Possum Specialist.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period



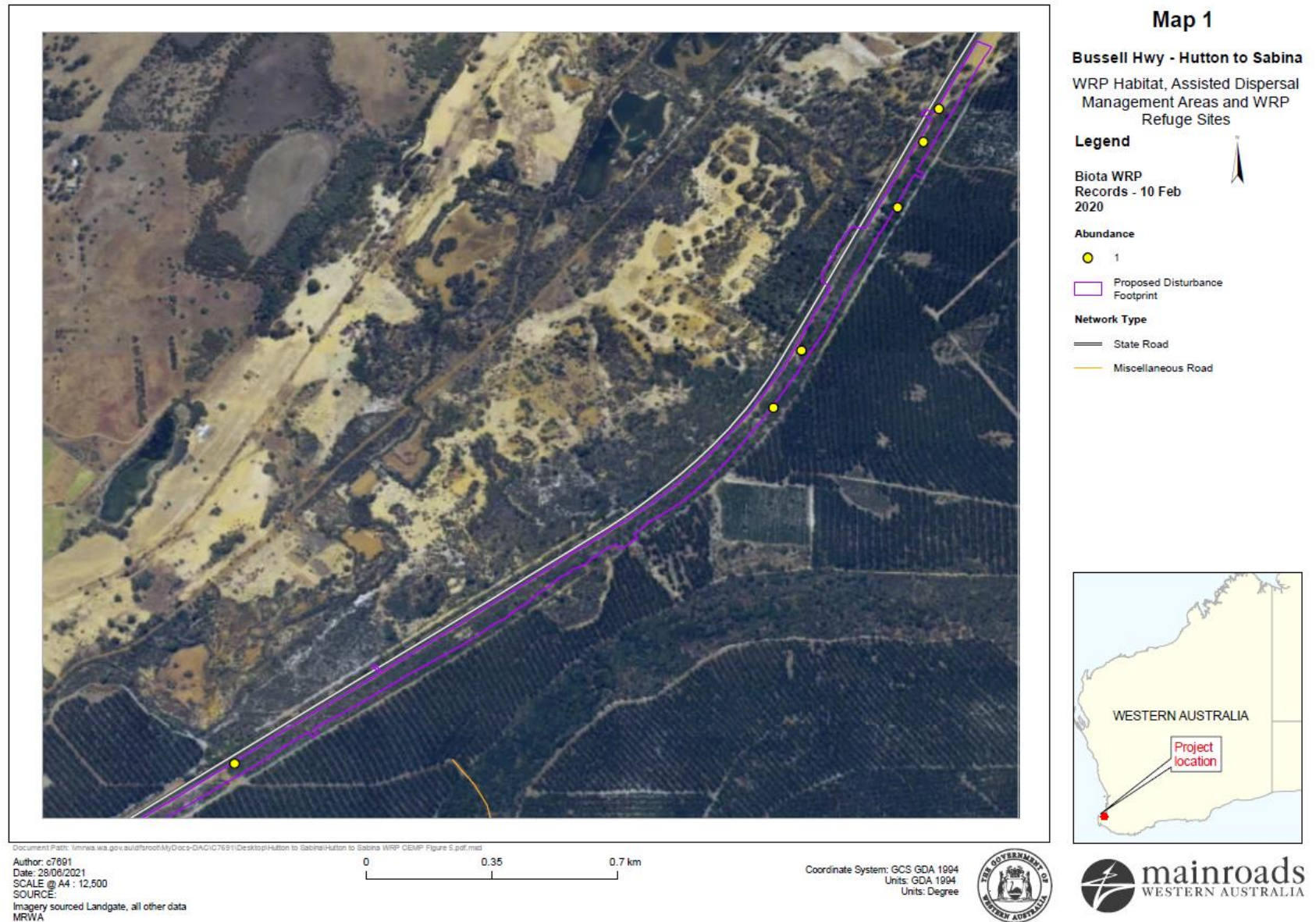
<b>Bussell Highway Duplication Stage 2 – Hutton to Sabina – WRPMP</b>				
<b>Project Component</b>	<b>Management Action</b>	<b>Monitoring Program</b>	<b>Responsible Person</b>	<b>Timeframe</b>
	Trees that have been identified as supporting WRP or possum dreys will be 'bumped gently' with a machine prior to felling. The Western Ringtail Possum Specialist will wait and observe the tree for a short time. If no possum appears to be present then the tree shall be pushed over slowly to minimise risk of injury to the animal.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	A Western Ringtail Possum Specialist shall support each machine involved in the clearing operations.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	The Western Ringtail Possum Specialist shall maintain radio communication with the machine operator.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	Vacant dreys will be removed prior to clearing where they are accessible.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	Vacant tree hollows suitable for possums will be removed or blocked prior to clearing where they are accessible.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	WRP encountered during the clearing operation shall be encouraged to move into vegetation away from the highway. This may require handling by the Western Ringtail Possum Specialist to move animals into adjacent vegetation outside of the clearing area.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	Where natural dispersal is not practical, (primarily in the Assisted Dispersal management areas) WRP shall be collected by the Western Ringtail Possum Specialist and immediately relocated into a nearby WRP refuge site (Maps 1-5, in Appendix B).	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	Any native animal showing signs of injury or illness during the clearing operations shall be taken to a local vet for assessment and treatment. Upon release from treatment, the DBCA SWR Wildlife Officer shall be contacted for advice in regards to suitable wildlife rehabilitators the animals should be taken to for rehabilitation.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	If no treatment by the vet is required, the animal shall be held by the Western Ringtail Possum Specialist for the remainder of the day in a quiet and safe location and released at one of the demarcated release points that night.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period

<b>Bussell Highway Duplication Stage 2 – Hutton to Sabina – WRPMP</b>				
<b>Project Component</b>	<b>Management Action</b>	<b>Monitoring Program</b>	<b>Responsible Person</b>	<b>Timeframe</b>
	Fallen trees that contained possum dreys shall be mulched the day they are fallen, or moved at least 100 m from where they were fallen to prevent animals re-entering.	Construction surveillance	Construction Engineer	Construction period
	A post-clearing survey shall be undertaken immediately following each days clearing operations and the following morning to identify the presence of any injured animals.	Construction surveillance	Construction Engineer / Western Ringtail Possum Specialist	Construction period
	Fauna shall not to be fed or intentionally harmed.	Construction surveillance	Construction Engineer	Construction period
	Apart from the Western Ringtail Possum Specialist, no site personnel shall handle any fauna present on-site.	Construction surveillance	Construction Engineer	Construction period
	No pets or firearms shall be permitted on site.	Construction surveillance	Construction Engineer	Construction period
	Each of the release points in the refuge site has a limit of three possums (irrespective of species) at each “release point” per five day period. A cumulative maximum release number for each “release point” of six possums (irrespective of species). Once six animals have been released, that point shall be closed and no further possums are to be released at that point. The Western Ringtail Possum Specialist shall provide weekly reports the DBCA SWR (bunbury@dbca.wa.gov.au) marked attention Regional Wildlife Officer, specifying which possum relocation points were used, species released, and numbers released.	Construction surveillance	Construction Engineer / Environmental Officer / Western Ringtail Possum Specialist	Construction period
	No more than a total of 10 WRPs will be released within the refuge sites, unless otherwise agreed to by DBCA. Where the maximum number of WRP releases occurs, Main Roads will work with DBCA to develop an alternative WRP management approach.	Construction surveillance	Project Manager / Environmental Officer / Western Ringtail Possum Specialist	Construction period
<b>Construction (Post Clearing)</b>				
Western Ringtail Possum Specialist	The Western Ringtail Possum Specialist shall provide a suitable report to Main Roads on completion of their services detailing (as a minimum) the number of WRP observed/shepherded, the location and number of WRP collected, which refuge sites / release points were used and whether any WRP were injured during clearing operations.	A copy of the Western Ringtail Possum Specialists results report will be recorded in TRIM.	Environmental Officer	Post-construction (clearing) period

**Table 1: Western Ringtail Possum Release Points**

Release Point	Latitude	Longitude
1	-33.6529	115.4219
2	-33.6549	115.4187
3	-33.6447	115.4339
4	-33.6418	115.4348
5	-33.6215	115.4719
6	-33.6132	115.4757

## Appendix B: Western Ringtail Possum Assisted Dispersal Management Areas and WRP Refuge Sites



## Map 2

### Bussell Hwy - Hutton to Sabina

WRP Habitat, Assisted Dispersal Management Areas and WRP Refuge Sites

#### Legend

Biota WRP Records - 10 Feb 2020

#### Abundance

- 1
- 3

★ Release Points

WRP Refuge Sites

WRP Assisted Dispersal Area

Proposed Disturbance Footprint

#### Network Type

- State Road
- Local Road
- Miscellaneous Road



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 Date: 28/06/2021  
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 SOURCE:  
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 MRWA



Coordinate System: GCS GDA 1994  
 Units: GDA 1994  
 Units: Degree



### Map 3

**Bussell Hwy - Hutton to Sabina**  
WRP Habitat, Assisted Dispersal  
Management Areas and WRP  
Refuge Sites

**Legend**

Biota WRP  
Records - 10 Feb  
2020

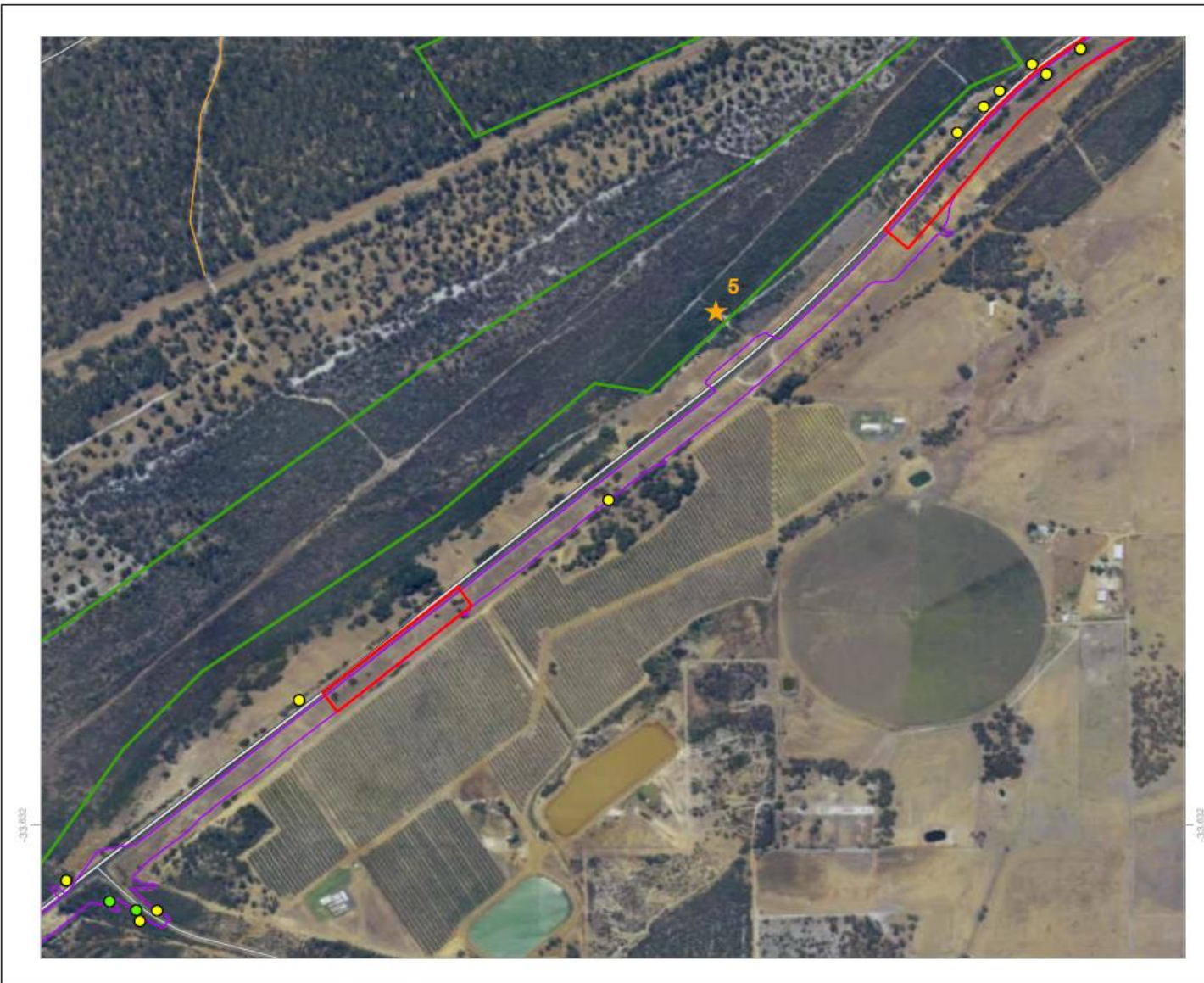
**Abundance**

- 1
- 2
- ★ Release Points

- WRP Refuge Sites
- WRP Assisted Dispersal Area
- Proposed Disturbance Footprint

**Network Type**

- State Road
- Local Road
- Miscellaneous Road



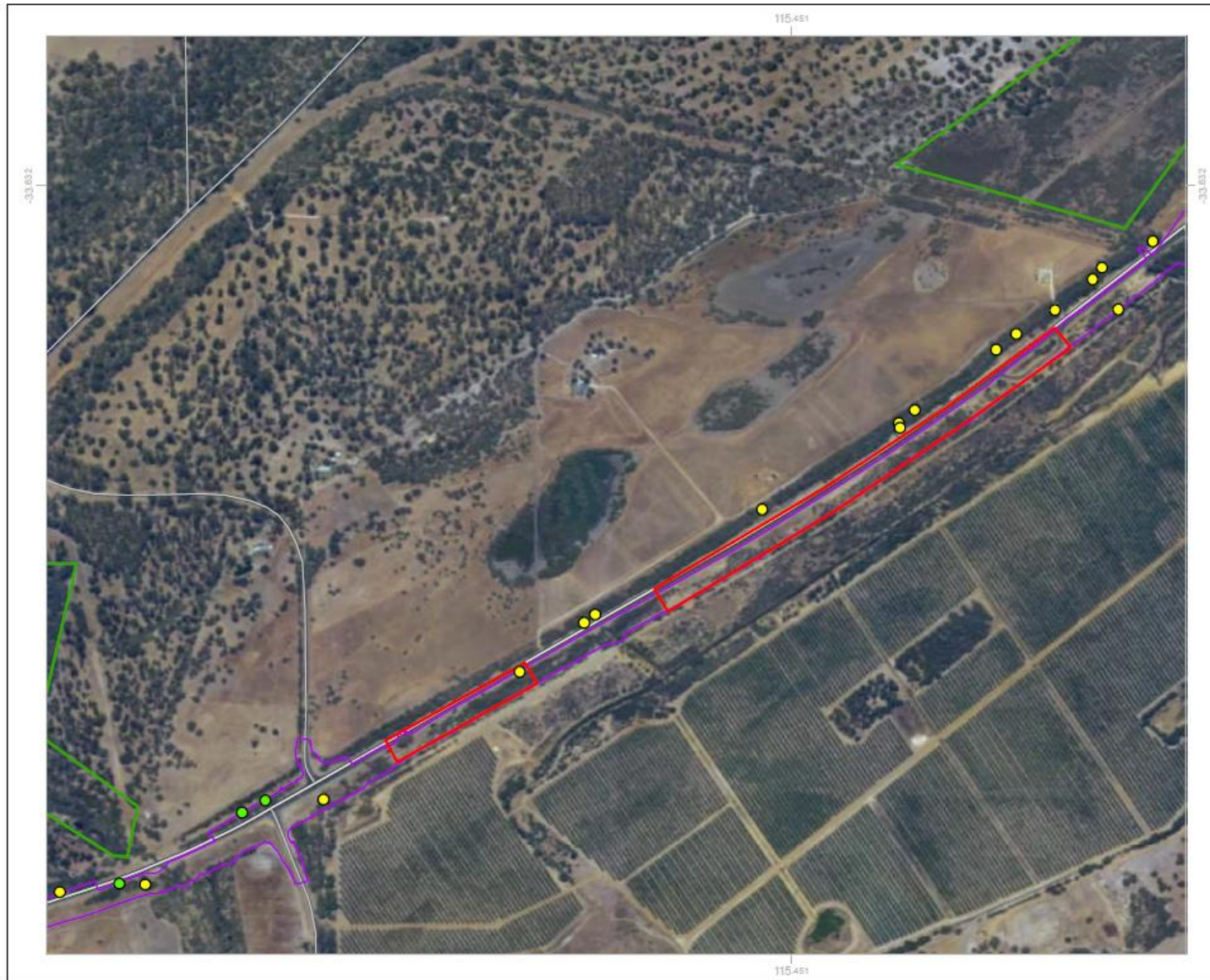
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Units: GDA 1994  
Units: Degree





### Map 4

**Bussell Hwy - Hutton to Sabina**  
 WRP Habitat, Assisted Dispersal  
 Management Areas and WRP  
 Refuge Sites

**Legend**

Biota WRP  
 Records - 10 Feb  
 2020

**Abundance**

- 1
- 2

WRP Refuge Sites

WRP Assisted  
 Dispersal Area

Proposed Disturbance  
 Footprint

**Network Type**

- State Road
- Local Road



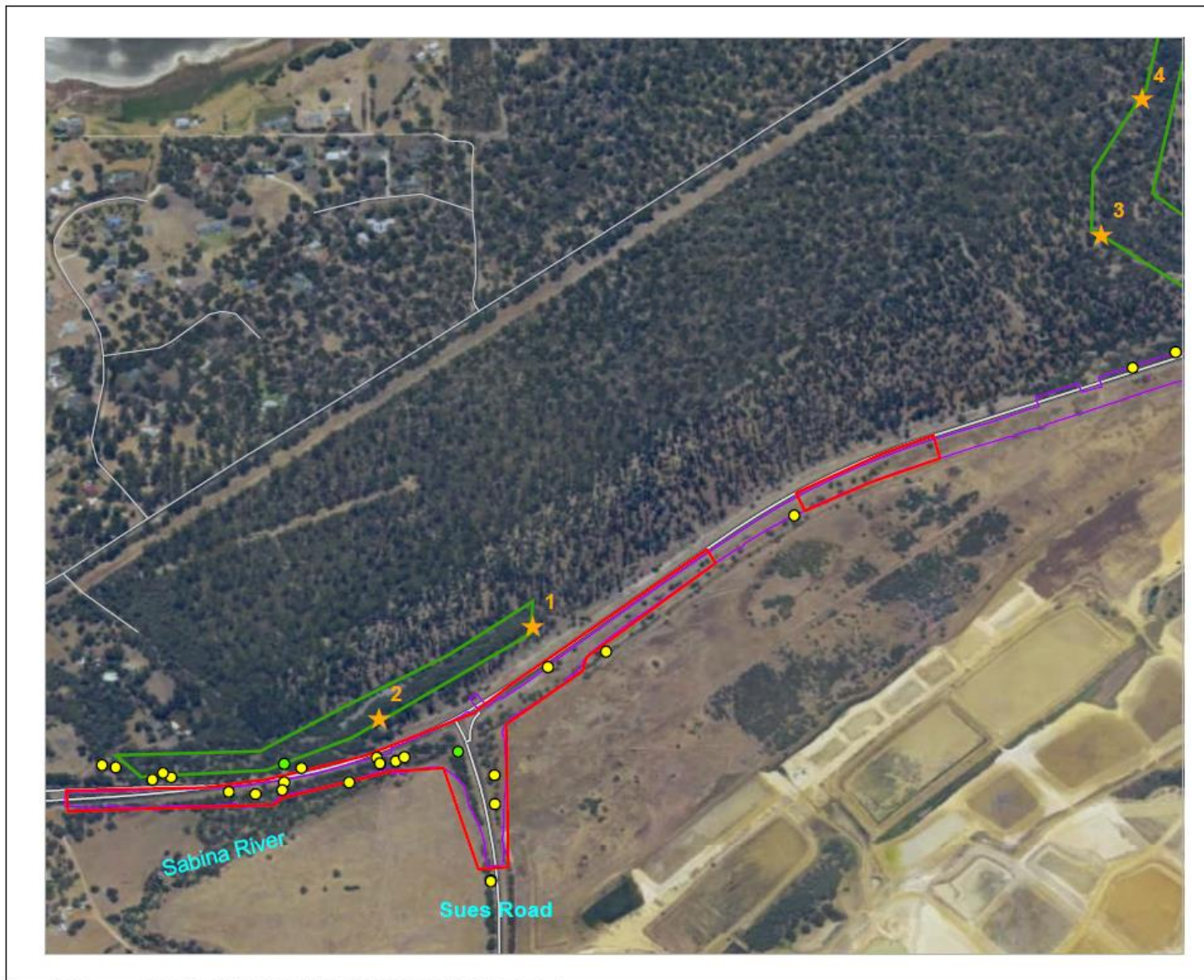
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 Imagery sourced Landgate, all other data  
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Coordinate System: GCS GDA 1994  
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 Units: Degree





### Map 5

#### Bussell Hwy - Hutton to Sabina

WRP Habitat, Assisted Dispersal Management Areas and WRP Refuge Sites

#### Legend

Biota WRP Records - 10 Feb 2020

#### Abundance

- 1
- 2
- ★ Release Points

WRP Refuge Sites

WRP Assisted Dispersal Area

Proposed Disturbance Footprint

#### Network Type

- State Road
- Local Road



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