



ATLAS Stage 3 – ATLAS Pre-clearance Survey Report

Green Valley, The Peaks South and Bellaringa

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Senex

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Glossary of Terms

Acronym	Description
ATP	Authority to Prospect
ECPPFD	<i>Environmental Constraints Protocol for Planning and Field Development</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
ha	Hectares
m	Metres
MNES	Matters of National Environmental Significance
MSES	Matter of State Environmental Significance
PL	Petroleum Lease
sp.	Species (singular)
spp.	Species (plural)
sqm	Square metres
TEC	Threatened Ecological Community

1 Introduction

1.1 Project background

The Atlas Stage 3 Gas Project (EPBC Act referral 2022/09410) involves developing, operating, decommissioning and rehabilitating up to 151 coal seam gas wells; gas and water gathering systems for the producing wells; access tracks; brine and produced water storages; borrow pits; and ancillary supporting facilities on Authority to Prospect (ATP) 2059, Petroleum Lease (PL) 445, the northern portion of PL209 and parts of PL1037 in the central part of the Surat Basin, Queensland (Senex, 2024). This report is provided to ensure compliance with the following approval conditions:

4. *In accordance with the Constraints Protocol, the approval holder must:*
 - b) *adhere to the constraints mapping.*
5. *To ensure no functional change to Koala dispersal habitat, the approval holder must not remove more than a total of 4 ha of trees, measured in canopy cover within mapped Koala dispersal habitat.*

PRE-CLEARANCE SURVEYS

6. *Prior to commencing clearing, the approval holder must:*
 - a) *undertake at least one pre-clearance survey of the proposed area of clearing, and*
 - b) *publish on the website the pre-clearance survey findings, including:*
 - i) *the location and extent of trees to be cleared, including maps, and*
 - ii) *a discussion of how removal of trees will not change the ability of Koalas to disperse across the landscape.*

This report presents the results of pre-clearance surveys on the following properties:

- Bellaringa: 52SP237297 and 49SP237297
- The Peaks: 48SP127252
- Green Valley: 2SP184589

1.2 Scope

Ausecology Pty Ltd (Ausecology) was engaged by Senex Energy Pty Ltd (Senex) to undertake pre-clearance ecological surveys as part of the approval conditions for the Atlas Stage 3 Gas Project and in accordance with the *Atlas Stage 3 Environmental Constraints Protocol for Planning and Field Development (ECPDFD)* document (Senex, 2024). The ECPDFD provides a framework for identifying, assessing and managing potential impacts to Matters of National Environmental Significance (MNES) and Matter of State Environmental Significance (MNES) associated with development of the Atlas Stage 3 Gas Project.

Data collected during the pre-clearance surveys will be used by Senex to ensure:

- infrastructure siting complies with relevant environmental approval conditions and does not exceed the maximum disturbance limits
- infrastructure siting adheres to the constraints mapping
- no functional change to Koala dispersal habitat, the approval holder must not remove more than a total of 4 ha of trees, measured in canopy cover within mapped Koala dispersal habitat.

Results from the pre-clearance survey findings (this report) will be published on the website, including:

- the location and extent of trees to be cleared, including maps, and
- a discussion of how removal of trees will not change the ability of Koalas to disperse across the landscape.

2 Methodology

Ausecology principal ecologists conducted the field surveys on foot between 19th-20th June 2024.

Areas surveyed and mapped in this report include Green Valley, the Peaks South and Bellaringa properties as shown in Figure 2-1 and Figure 2-2.

An initial desktop survey was undertaken to analyse all previous ecology data collected in the field, analyse the ECPPFD and associate constraints mapping and to identify areas of mapped koala dispersal habitat that would require further ground verification.

Areas identified were given a “Desktop_ID” number for further identification and field verification. Additional points were collected in the field and given a unique ID number for verification purposes. All ID numbers have been provided in individual maps of the area surveyed and Table 3-1 identifying each species in the results.

Canopy cover was measured by walking the dripline of trees located in koala dispersal areas using a sub-10cm accuracy handheld Trimble GPS unit. Tree canopy diameter was also recorded using measuring tape for canopy cover verification. The diameter at breast height (DBH) of each of the abovementioned trees was measured and height data was collected. Where denser regrowth was present and canopy cover of individual trees could not be distinguished, the canopy cover of the clump of trees was walked at the outer dripline and average height assessed.

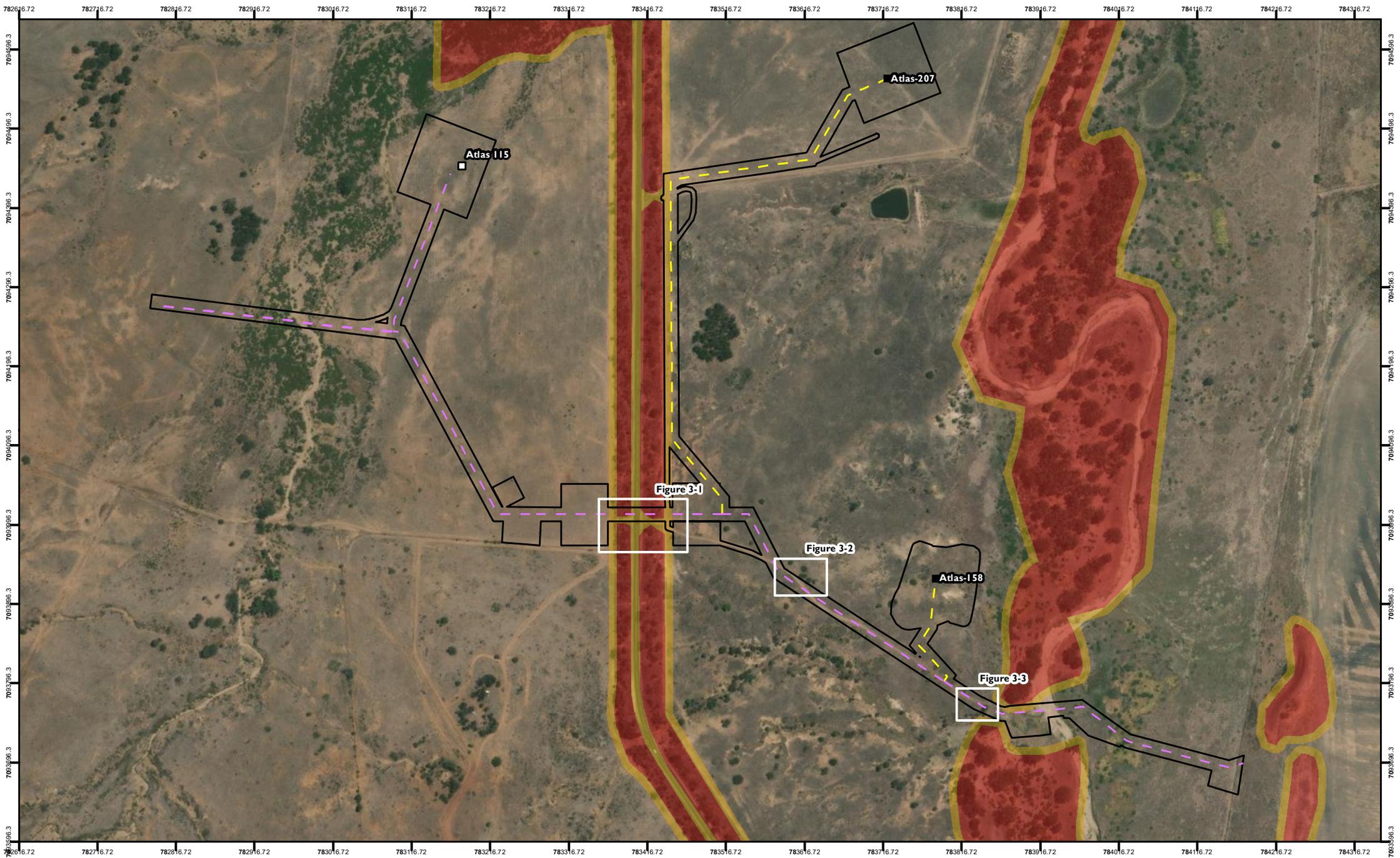


FIGURE 2-1:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 Green Valley - Overview

- Proposed Wells
- Existing Well
- Proposed Pipelines
- Existing Pipelines
- Green Valley Footprint
- Map Extents
- No Go Area
- High Constraint Area

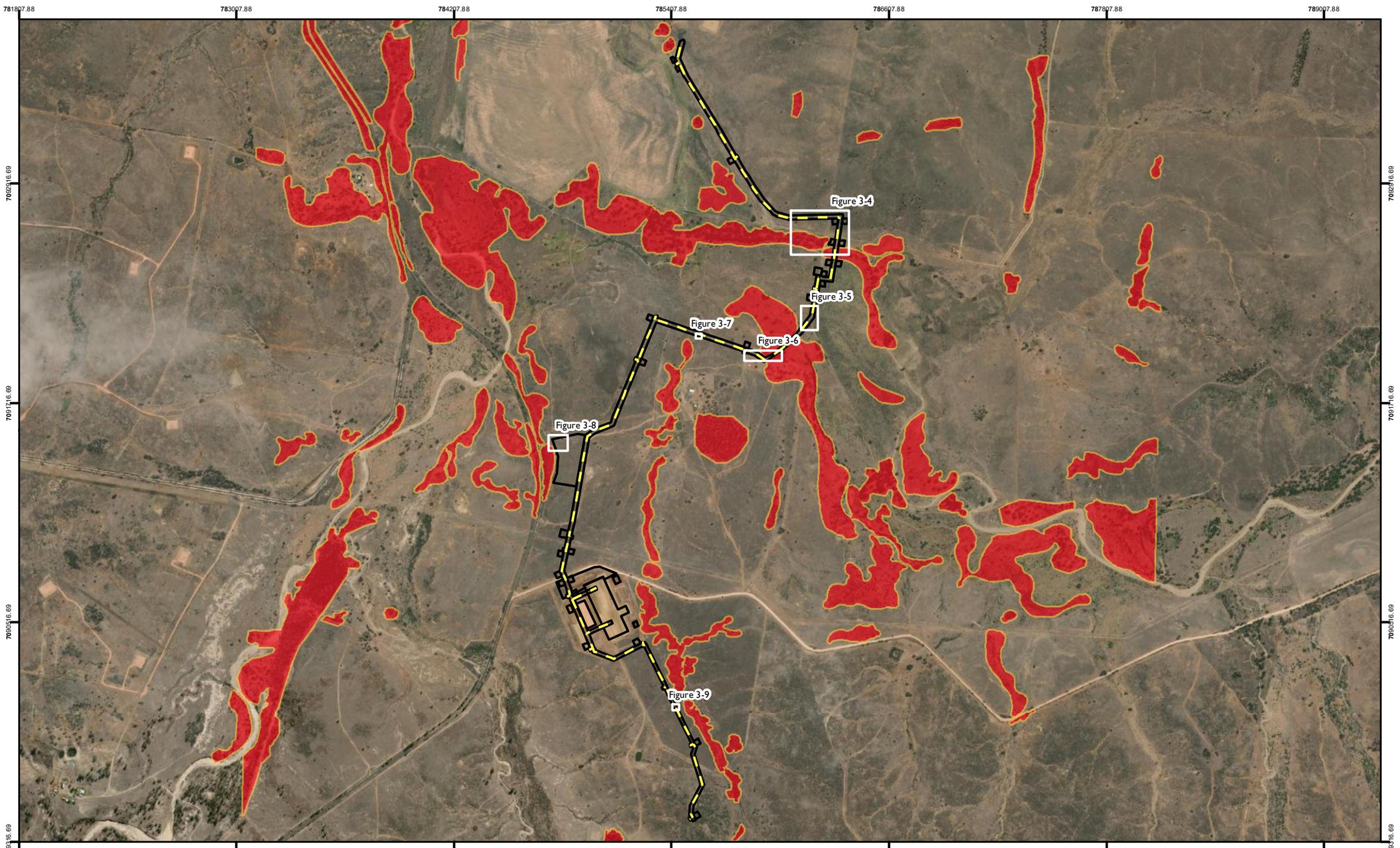
Data Accuracy Notes:
 Ground-Truthed data was mapped
 using Fixed RTK GNSS Receivers
 with 1cm accuracy



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2	MS	RR	17/09/2024
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COORDINATE SYSTEM: GDA2020 MGA Zone 55
 SCALE: 1:6,000

0 50 100 150
 Metres



- Proposed Trunklines
- No Go Area
- High Constraint Area
- Map Extents
- The Peaks South and Bellaringa Footprint

FIGURE 2-2:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 The Peaks South and Bellaringa - Overview

Data Accuracy Notes:
 Ground-Truthed data was mapped
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0 300 600

Metres

3 Results

3.1 Ground-truthed koala dispersal trees

Preclearance surveys identified no impacts to MNES or MSES outside of the current constraints mapping. Table 3-1 provides the results including canopy cover, height and DBH of the trees assessed in the field in koala dispersal areas. All trees were assessed and where determined they could be avoided (through underground boring or realignment) they have been marked up as “retain” and will be avoided during construction. Trees unable to be avoided have had their canopy cover assessed and calculated under disturbance limits.

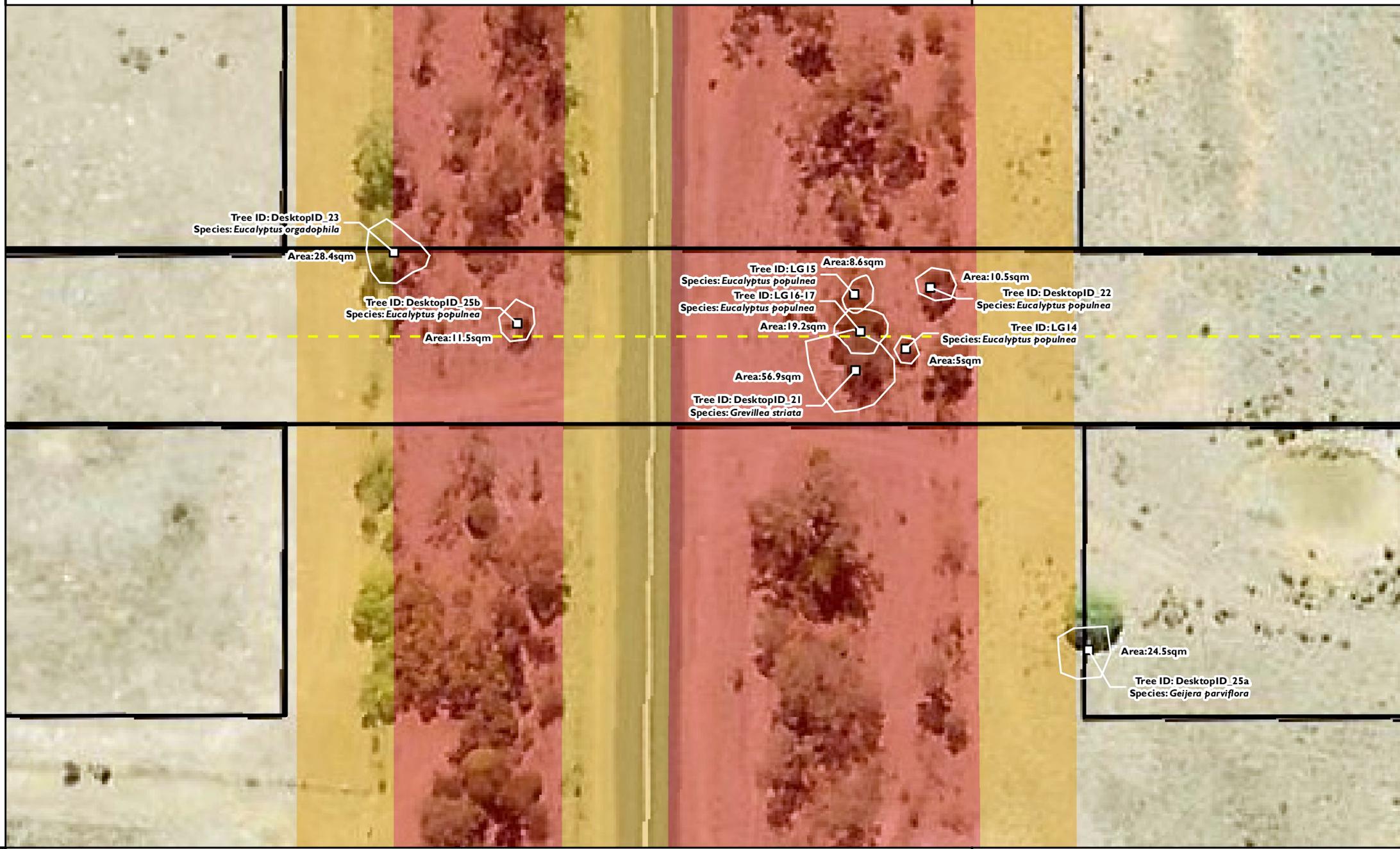
Table 3-1 Dispersal habitat trees

Location (Desktop ID)	Data Package	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
LG01	WP23D - Bellaringa & WP22B - The Peaks South	8.3	<i>Eucalyptus populnea</i>	10	5.5	Remove	
LG02	WP23D - Bellaringa & WP22B - The Peaks South	8.7	<i>Eucalyptus populnea</i>	9	4.8	Remove	
LG03	WP23D - Bellaringa & WP22B - The Peaks South	5.7	<i>Eucalyptus populnea</i>	8	4.3	Remove	
LG04	WP23D - Bellaringa & WP22B - The Peaks South	6.4	<i>Eucalyptus populnea</i>	10.5	5.5	Remove	
LG05	WP23D - Bellaringa & WP22B - The Peaks South	268.1	<i>Eucalyptus populnea</i>	120	15.5	Remove	
LG06	WP23D - Bellaringa & WP22B - The Peaks South	43.6	<i>Eucalyptus populnea</i>	29.5	8.5	Remove	
LG07	WP23D - Bellaringa & WP22B - The Peaks South	21.5	<i>Eucalyptus tereticornis</i>	29.5	8	Remove	
LG08	WP23D - Bellaringa & WP22B - The Peaks South	82.6	<i>Angophora floribunda</i>	11	4.5	Remove	

Location (Desktop ID)	Data Package	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
LG09	WP23D - Bellaringa & WP22B - The Peaks South	3.7	<i>Angophora floribunda</i>	11	5	Remove	
LG10	WP23D - Bellaringa & WP22B - The Peaks South	46.5	<i>Geijera parviflora</i>	35	7	Remove	
LG11	WP23D - Bellaringa & WP22B - The Peaks South	40.6	<i>Casuarina cristata</i>	29	6	Remove	
LG12	WP23D - Bellaringa & WP22B - The Peaks South	22.2	<i>Geijera parviflora</i>	25	5.5	Remove	
LG13	WP23D - Bellaringa & WP22B - The Peaks South	50.1	<i>Geijera parviflora</i>	20	5	Remove	
LG14	WP17A - Green Valley	0	<i>Eucalyptus populnea</i>	12	6	Retain	
LG15	WP17A - Green Valley	0	<i>Eucalyptus populnea</i>	41	18	Retain	
LG16-17	WP23D - Bellaringa & WP22B - The Peaks South	0	<i>Eucalyptus populnea</i>	11	8	Retain	
DesktopID_01	WP17A - Green Valley	0	<i>Geijera parviflora</i>	35	5	Retain	
DesktopID_02	WP17A - Green Valley	0	<i>Geijera parviflora</i>	32	4	Retain	

Location (Desktop ID)	Data Package	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
DesktopID_03	WP17A - Green Valley	0	<i>Geijera parviflora</i>	29	4.5	Retain	
DesktopID_04	WP17A - Green Valley	0	<i>Geijera parviflora</i>	32	4	Retain	
DesktopID_05	WP17A - Green Valley	0	<i>Geijera parviflora</i>	33	5	Retain	
DesktopID_07	WP17A - Green Valley	48	<i>Eucalyptus populnea</i>	26.5	13	Remove	
DesktopID_08	WP23D - Bellaringa & WP22B - The Peaks South	20	<i>Owenia acidula</i>	20	4.5	Remove	
DesktopID_11	WP23D - Bellaringa & WP22B - The Peaks South	77.7	<i>Geijera parviflora</i>	32	4.5	Remove	
DesktopID_12	WP23D - Bellaringa & WP22B - The Peaks South	39.9	<i>Angophora floribunda</i>	49	17	Remove	
DesktopID_13	WP23D - Bellaringa & WP22B - The Peaks South	21.3	<i>Eucalyptus tereticornis</i>	27.5	9.5	Remove	
DesktopID_14	WP23D - Bellaringa & WP22B - The Peaks South	0	<i>Eucalyptus populnea</i>	61	16	Retain	
DesktopID_15	WP23D - Bellaringa & WP22B - The Peaks South	49.2	<i>Eucalyptus populnea</i>	31	15	Remove	

Location (Desktop ID)	Data Package	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
DesktopID_16	WP23D - Bellaringa & WP22B - The Peaks South	119	<i>Geijera parviflora</i>	35	6	Remove	
DesktopID_20	WP23D - Bellaringa & WP22B - The Peaks South	60.5	<i>Geijera parviflora</i>	29	5	Remove	
DesktopID_21	WP17A - Green Valley	0	<i>Grevillea striata</i>	15	5	Retain	
DesktopID_22	WP17A - Green Valley	0	<i>Eucalyptus populnea</i>	18	7	Retain	
DesktopID_23	WP17A - Green Valley	0	<i>Eucalyptus orgadophila</i>	26	11	Retain	
DesktopID_25a	WP17A - Green Valley	0	<i>Geijera parviflora</i>	29	6	Retain	
DesktopID_25b	WP17A - Green Valley	0	<i>Eucalyptus populnea</i>	14	7	Retain	
TOTAL		1043.6					



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FIGURE 3-1:
Desktop and Ground-Truthed Tree Dripline Extent
Koala Dispersal Habitat Verification
Green Valley - Map 1

Proposed Gathering Lines
- Dashed yellow line

No Go Area
- Red background

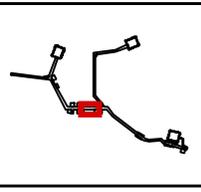
High Constraint Area
- Yellow background

Green Valley Footprint
- Grey background

Ground-Truthed Tree Centrepnt
□ Retain

Dripline Extent
□ Retain

Data Accuracy Notes:
Ground-Truthed data was mapped using Fixed RTK GNSS Receivers with 1cm accuracy



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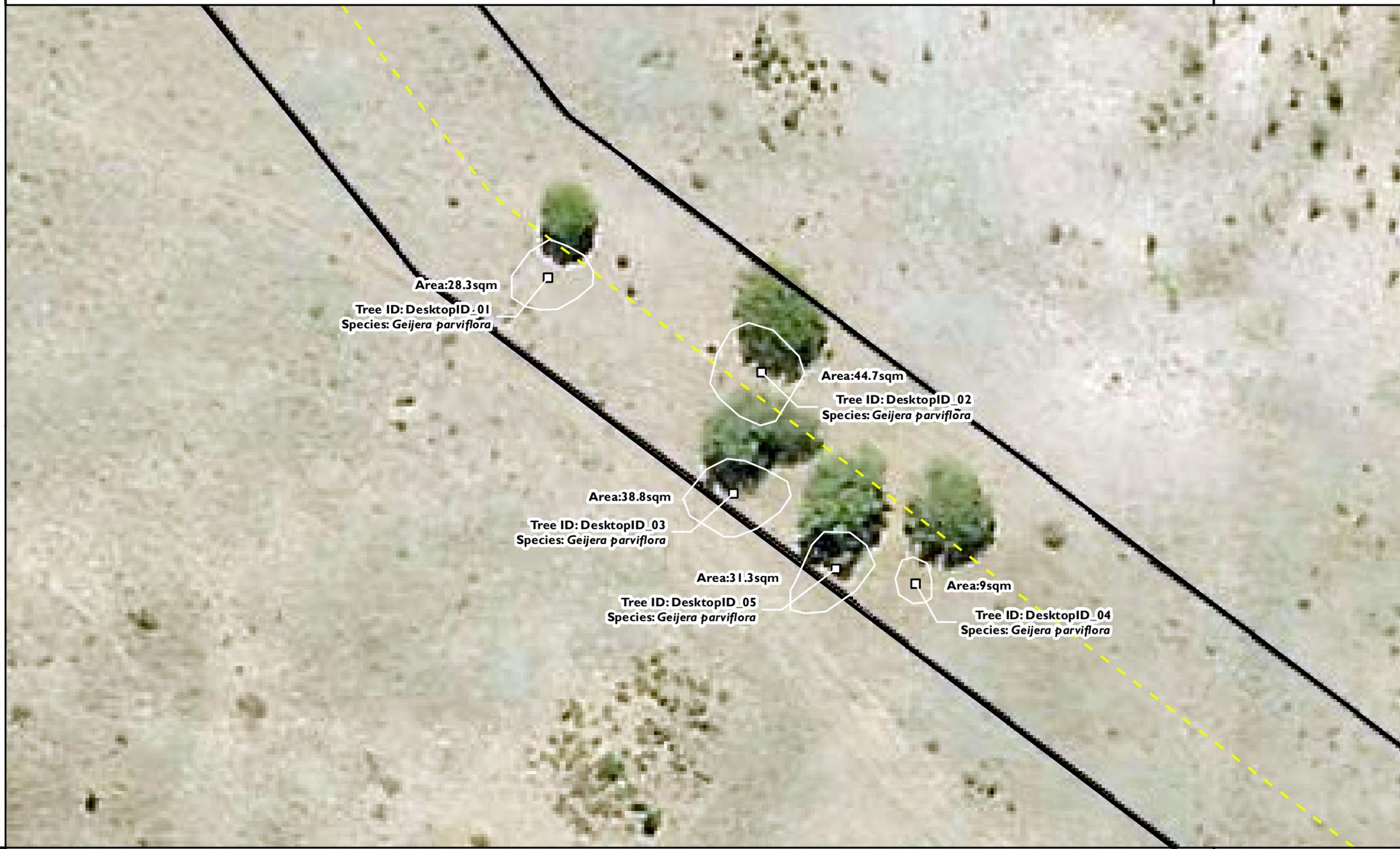
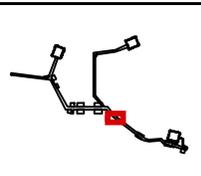


FIGURE 3-2:
Desktop and Ground-Truthed
Tree Dripline Extent
Koala Dispersal Habitat Verification
Green Valley - Map 2

- Proposed Gathering Lines
- Green Valley Footprint
- Ground-Truthed Tree Centrepoint**
- Retain
- Dripline Extent**
- Retain

Data Accuracy Notes:
Ground-Truthed data was mapped
using Fixed RTK GNSS Receivers
with 1cm accuracy



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COORDINATE SYSTEM: GDA2020 MGA Zone 55
SCALE: 1:400

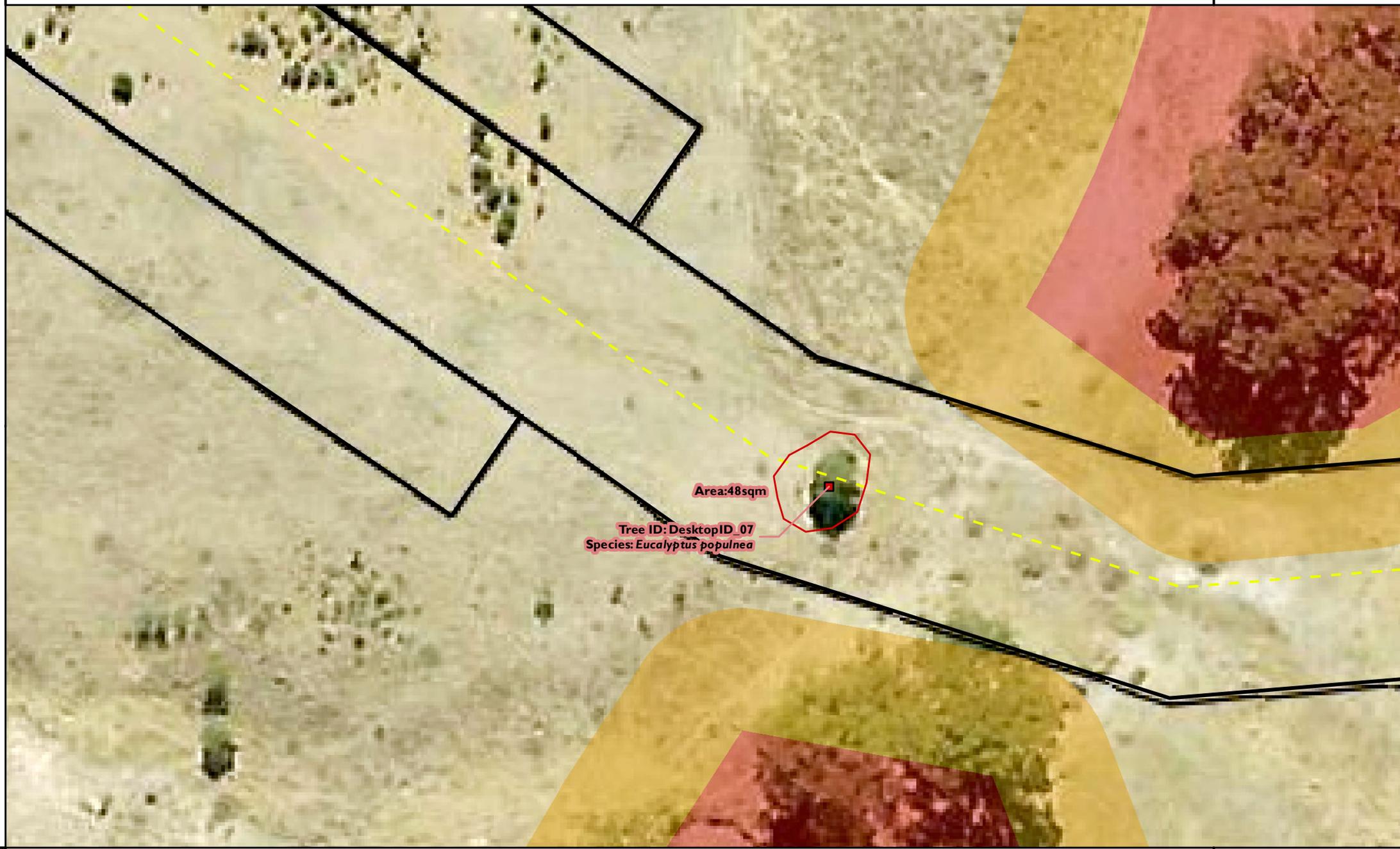
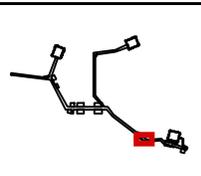


FIGURE 3-3:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 Green Valley - Map 3

- Proposed Gathering Lines
- Green Valley Footprint
- No Go Area
- High Constraint Area
- Ground-Truthed Tree Centrepoint
- Remove
- Dripline Extent
- Remove

Data Accuracy Notes:
 Ground-Truthed data was mapped
 using Fixed RTK GNSS Receivers
 with 1cm accuracy



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COORDINATE SYSTEM: GDA2020 MGA Zone 55
 SCALE: 1:400

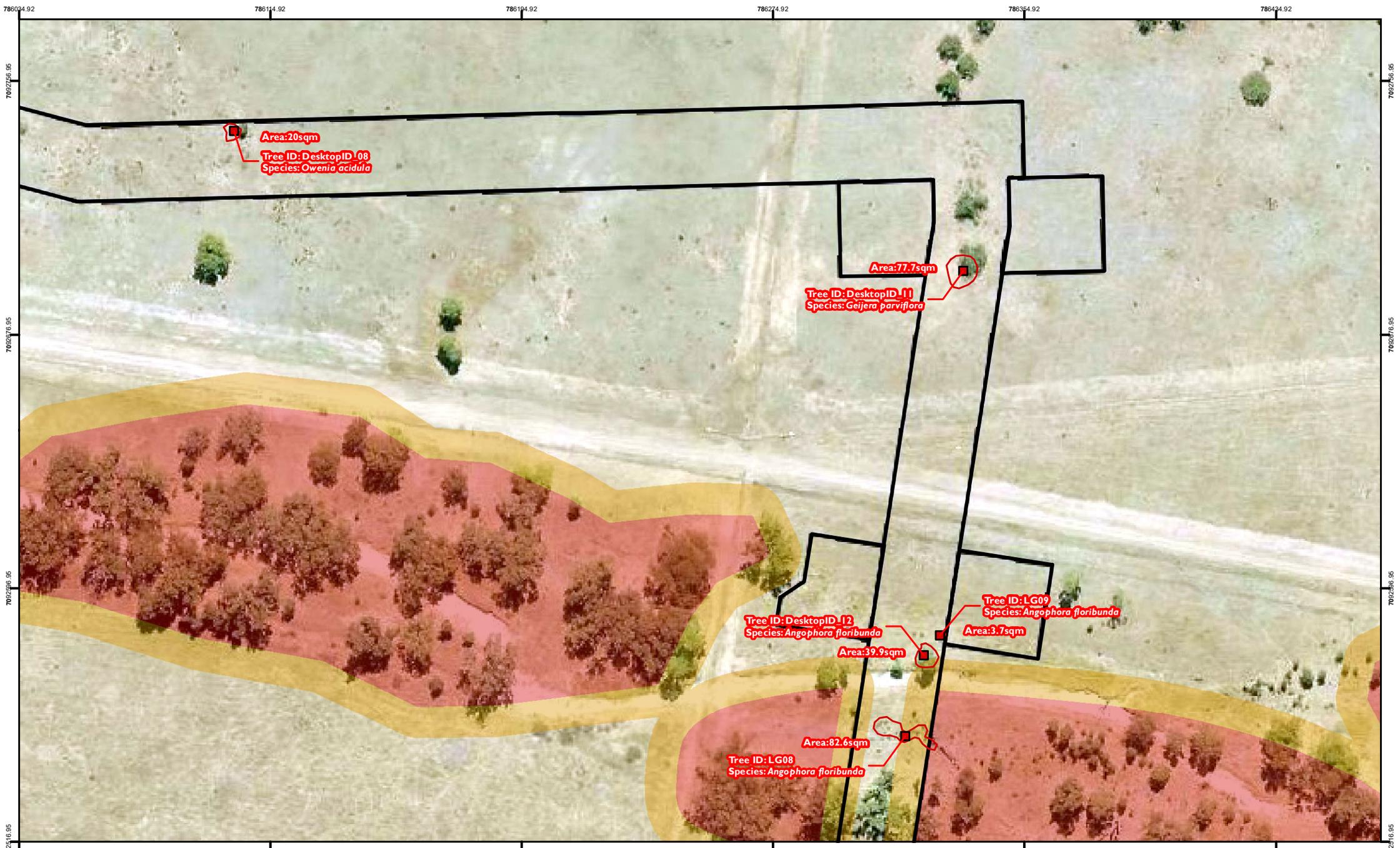
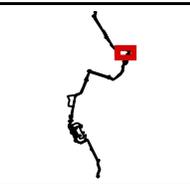


FIGURE 3-4:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 The Peaks South and Bellaringa - Map 1

- The Peaks South and Bellaringa Footprint
- No Go Area
- High Constraint Area

- Ground-Truthed Tree Centrepoint**
- Remove
- Dripline Extent**
- Remove

Data Accuracy Notes:
 Ground-Truthed data was mapped
 using Fixed RTK GNSS Receivers
 with 1cm accuracy



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COORDINATE SYSTEM: GDA2020 MGA Zone 55
 SCALE: 1:1,500



FIGURE 3-5:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 The Peaks South and Bellaringa - Map 2

- The Peaks South and Bellaringa Footprint
- No Go Area
- High Constraint Area

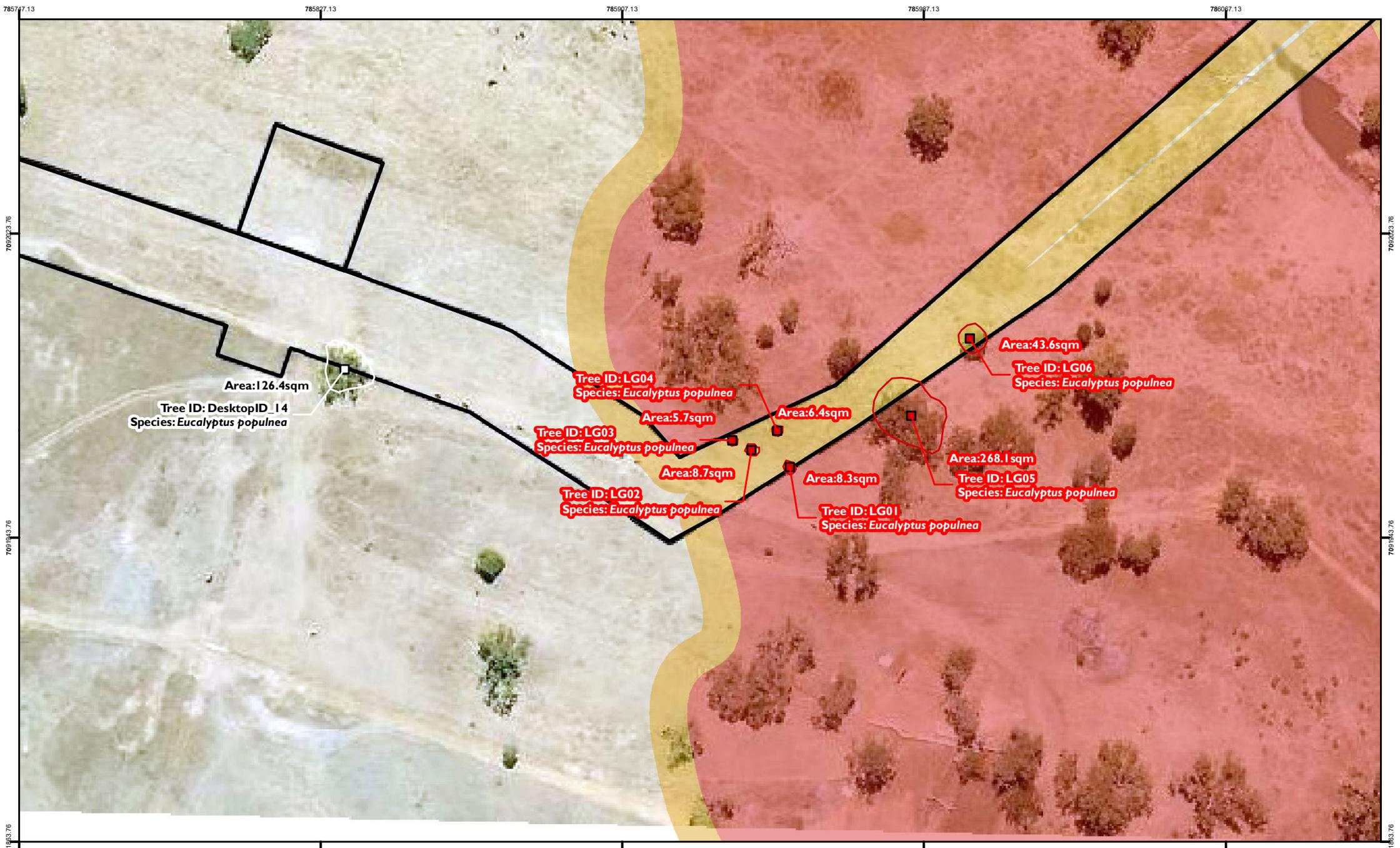
- Ground-Truthed Tree Centrepoint**
- Remove
- Dripline Extent**
- Remove

Data Accuracy Notes:
 Ground-Truthed data was mapped
 using Fixed RTK GNSS Receivers
 with 1cm accuracy



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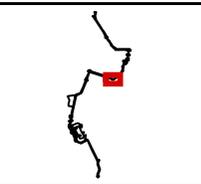
FIGURE 3-6:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 The Peaks South and Bellaringa - Map 3

The Peaks South and Bellaringa Footprint
 No Go Area
 High Constraint Area

Ground-Truthed Tree Centrepoint
 Retain
 Remove

Dripline Extent
 Retain
 Remove

Data Accuracy Notes:
 Ground-Truthed data was mapped
 using Fixed RTK GNSS Receivers
 with 1cm accuracy



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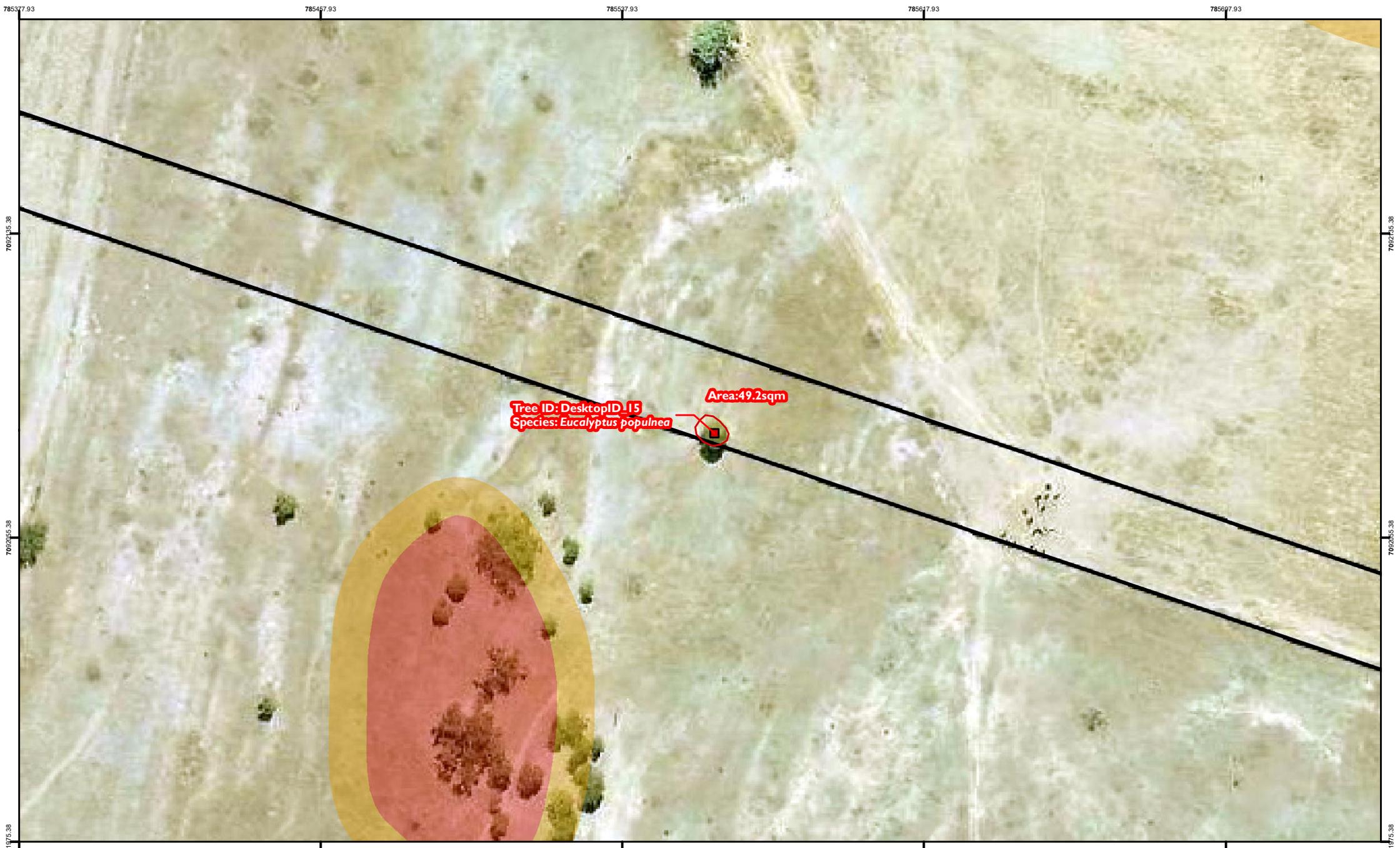


FIGURE 3-7:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 The Peaks South and Bellaringa - Map 4

- The Peaks South and Bellaringa Footprint
- No Go Area
- High Constraint Area

- Ground-Truthed Tree Centrepoint**
- Remove
- Dripline Extent**
- Remove

Data Accuracy Notes:
 Ground-Truthed data was mapped
 using Fixed RTK GNSS Receivers
 with 1cm accuracy



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COORDINATE SYSTEM: GDA2020 MGA Zone 55
 SCALE: 1:1,250

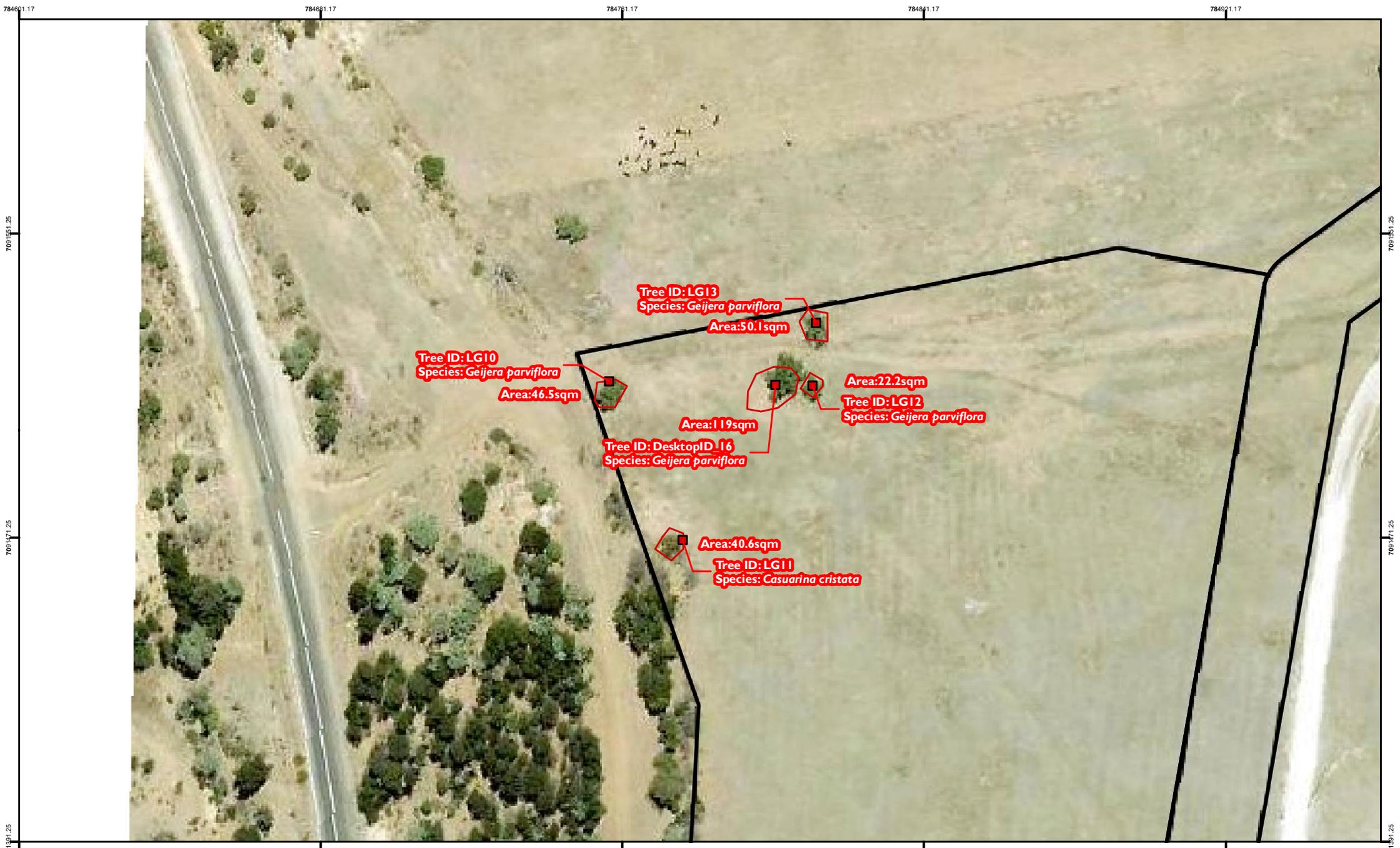


FIGURE 3-8:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 The Peaks South and Bellaringa - Map 5

The Peaks South and Bellaringa Footprint

Ground-Truthed Tree Centrepoint

Remove

Dripline Extent

Remove

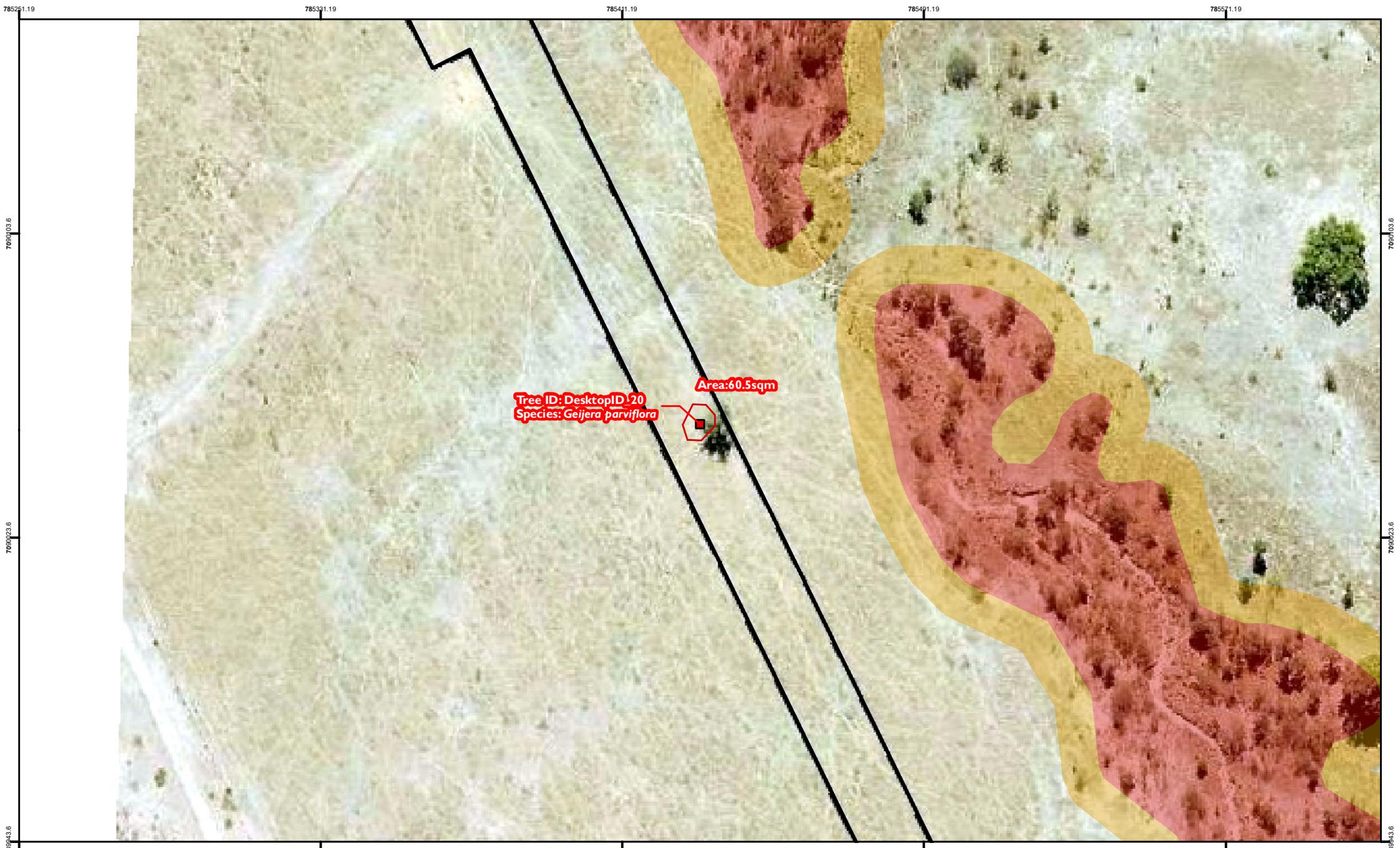
Data Accuracy Notes:

Ground-Truthed data was mapped
 using Fixed RTK GNSS Receivers
 with 1cm accuracy



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FIGURE 3-9:
 Desktop and Ground-Truthed
 Tree Dripline Extent
 Koala Dispersal Habitat Verification
 The Peaks South and Bellaringa - Map 6

The Peaks South and Bellaringa Footprint
 No Go Area
 High Constraint Area

Ground-Truthed Tree Centrepoint
 Remove
Dripline Extent
 Remove

Data Accuracy Notes:
 Ground-Truthed data was mapped
 using Fixed RTK GNSS Receivers
 with 1cm accuracy



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0 15 30
 Metres

4 Discussion

The areas surveyed identified no additional constraints in accordance with the Atlas Stage 3 ECPPFD document. Koala dispersal habitat was considered separately, and a total of 0.15 ha was mapped as impacted. This is currently below the 4 ha of permitted impact limit. Importantly, in areas where there was potential removal of dispersal habitat trees, the footprint was first positioned to avoid trees (Table 3-1) where trees have been retained through further avoidance measures. Where avoidance was not possible, the footprint has been positioned to avoid adjacent areas of vegetation and ensure other areas of dispersal habitat remain as shown in Figure 4-1 - Figure 4-8. The removal of the 0.15 ha is not likely to result in functional change to the dispersal habitat on the properties and the Koala will still be able to move through the landscape.



Figure 4-1 Adjacent vegetation avoided



Figure 4-2 Adjacent vegetation avoided



Figure 4-3 Adjacent vegetation avoided



Figure 4-4 Adjacent vegetation avoided



Figure 4-5 Adjacent vegetation avoided on creekline



Figure 4-6 Adjacent vegetation avoided

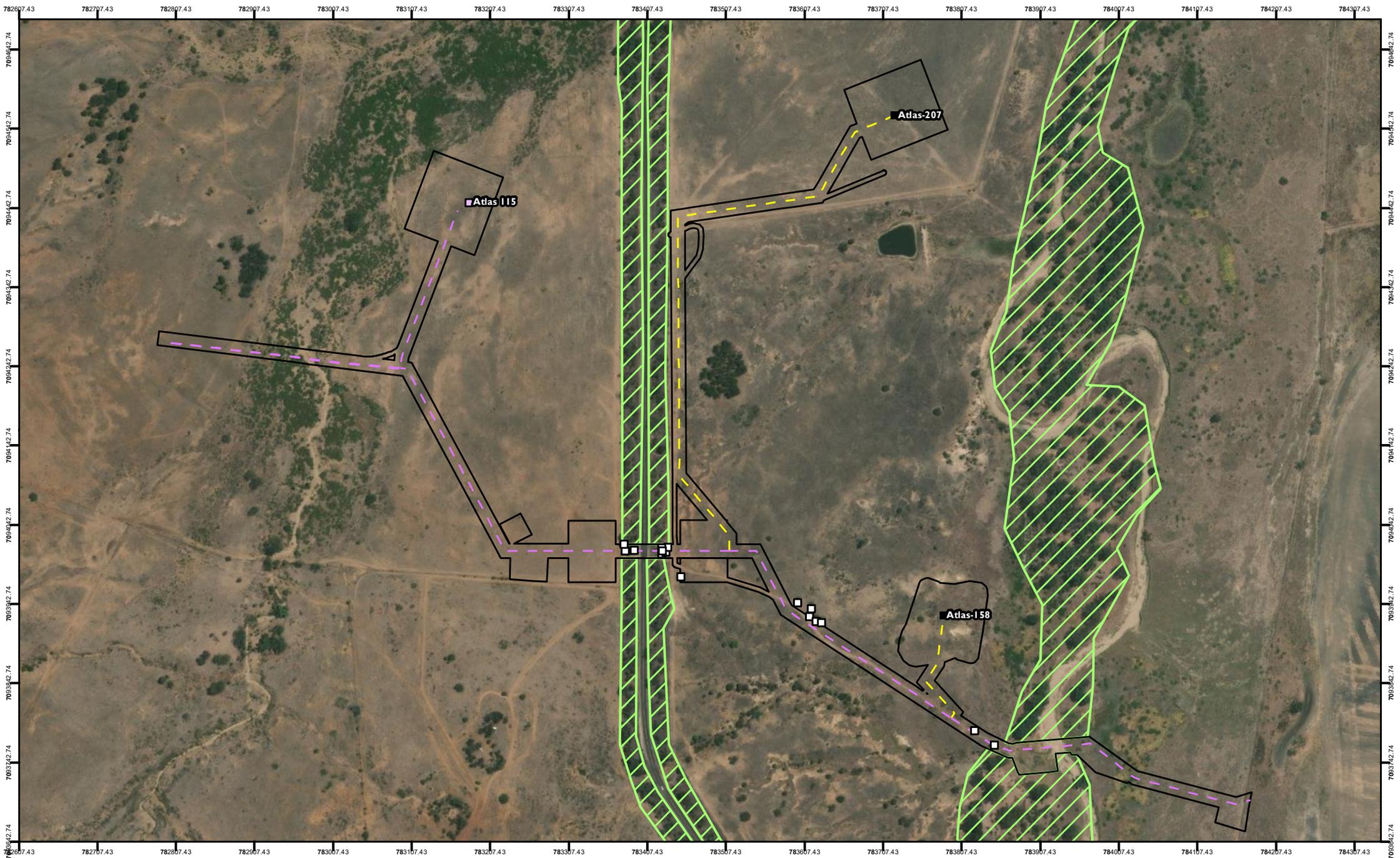


FIGURE 4-7:
Potential Koala Habitat Avoided
Green Valley - Overview

- Ground-Truthed Tree Centrepoint
- Existing Well
- Proposed Wells
- Existing Pipelines
- Proposed Pipelines
- Green Valley Footprint
- Potential Koala Habitat Avoided

Data Accuracy Notes:
Ground-Truthed data was mapped using Fixed RTK GNSS Receivers with 1cm accuracy



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0 50 100 150
Metres

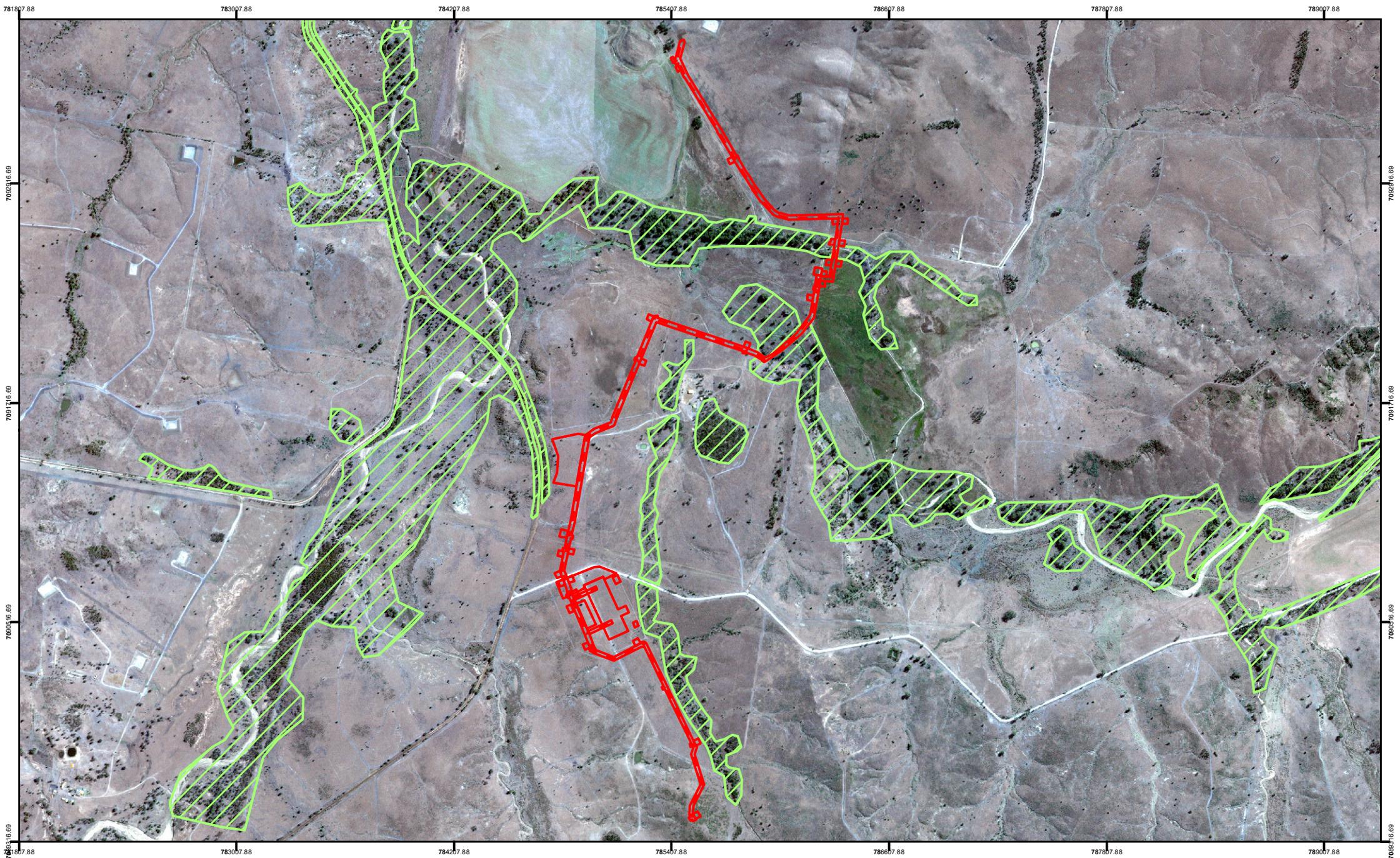


FIGURE 4-8:
Potential Koala Habitat Avoided
The Peaks South and Bellaringa - Overview

- Proposed Trunklines
- ▨ Potential Koala Habitat Avoided
- ▭ The Peaks South and Bellaringa Footprint

Data Accuracy Notes:
Ground-Truthed data was mapped using Fixed RTK GNSS Receivers with 1cm accuracy



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SCALE: 1:26,000