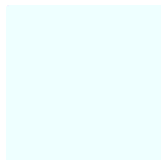


**Project:** Fairview Ecological  
Assessment Report  
Lot 8 on AB200 Post Site-scout  
Realignment Report

**Project No.** 225678  
**Prepared for:** Santos Ltd  
**2 November 2011**

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Document prepared by:



Aurecon Australia Pty Ltd  
 ABN 54 005 139 873  
 Level 14, 32 Turbot Street  
 Brisbane QLD 4000  
 Locked Bag 331  
 Brisbane QLD 4001  
 Australia

**T** +61 7 3173 8000  
**F** +61 7 3173 8001  
**E** brisbane@aurecongroup.com  
**W** aurecongroup.com

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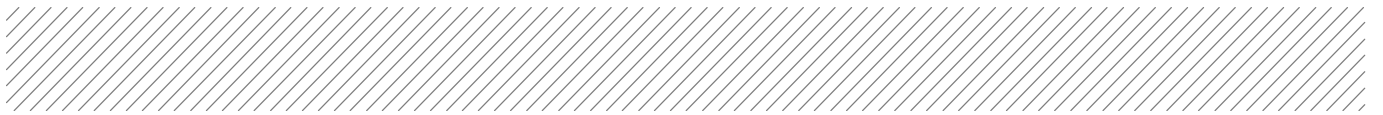
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<b>Name</b>		<b>Name</b>	
Luke Foster		Jane Stark	
<b>Title</b>		<b>Title</b>	
Ecologist		Environmental Scientist	

# Fairview Ecological Assessment Report

Date | 2 November 2011  
Reference | 225678  
Revision | 1

Aurecon Australia Pty Ltd  
ABN 54 005 139 873  
Level 14, 32 Turbot Street  
Brisbane QLD 4000  
Locked Bag 331  
Brisbane QLD 4001  
Australia

**T** +61 7 3173 8000  
**F** +61 7 3173 8001  
**E** [brisbane@aurecongroup.com](mailto:brisbane@aurecongroup.com)  
**W** [aurecongroup.com](http://aurecongroup.com)



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# Appendices

## Appendix A Flora Species List



# 1 Background

## 1.1 Project description

Santos Ltd (Santos) have commissioned Aurecon Australia Pty Ltd (Aurecon) to undertake ecological investigations of proposed areas of development for the expansion of the Fairview Gas Fields.

The Fairview gas fields are situated approximately 40km from Injune in southern Queensland. This area is characterised by elevated sandstone ranges including the Carnarvon and Expedition Ranges and part of the Mount Hutton and Kongabula Ranges. The Dawson River and other smaller watercourses drain this area and the vegetation is dominated by Eucalyptus and White Cypress Pine woodland, Brigalow and Semi-evergreen Vine Thicket (Eddie, 2007).

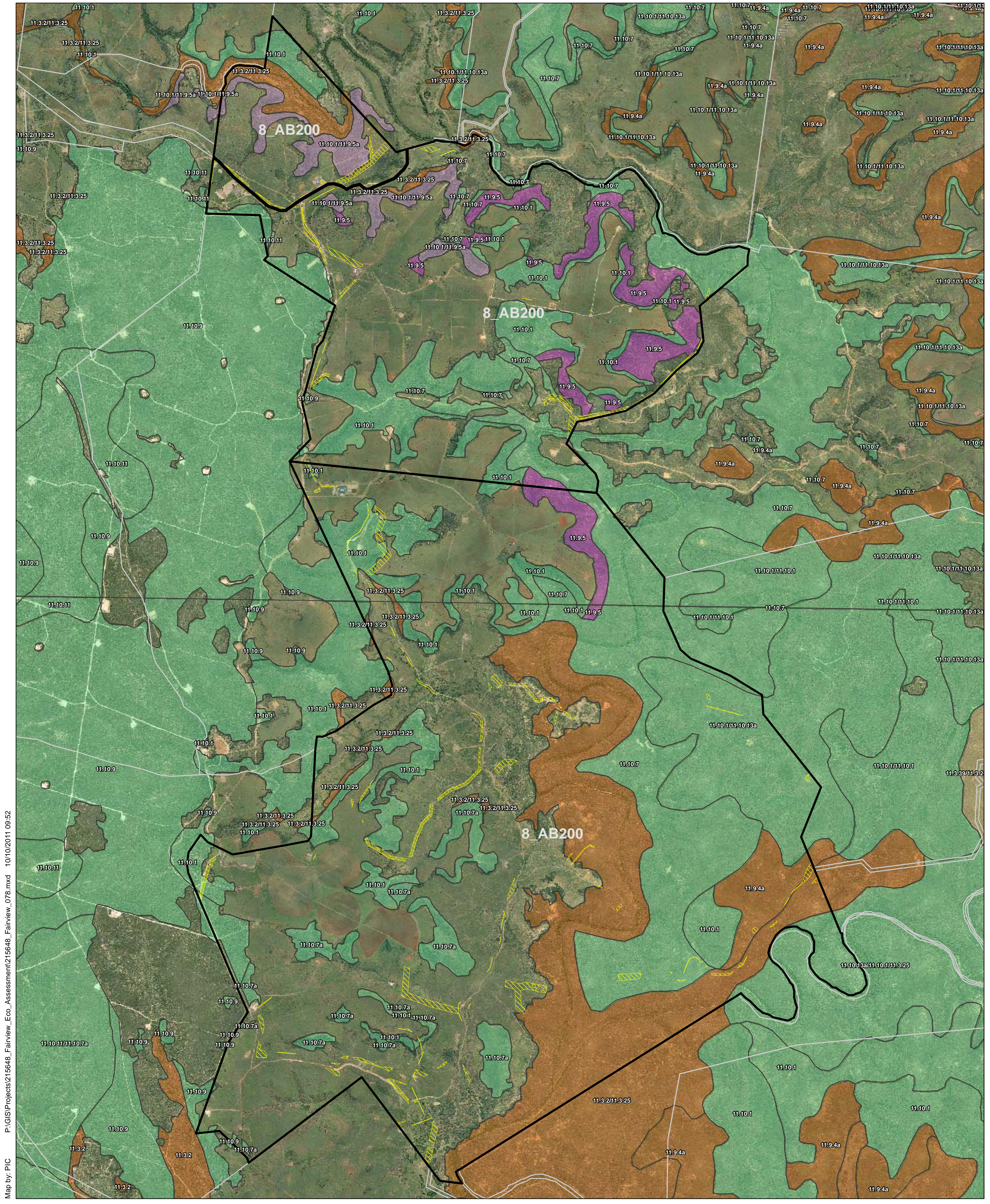
Much of this area has been subjected to cattle grazing and other agricultural practices as well as previous development associated with the gas fields.

This report is specific to the post site-scout realignment development areas on Lot 8 on AB200 as shown in Figure 1.1.

These areas are collectively referred to as the 'proposed development area', and are located entirely within Lot 8 on AB200. Note that the subject of this report is solely related to Lot 8 on AB200. Where survey areas overlap additional properties, these sites will be further addressed in the report relevant to those properties/lots.

## 1.2 Purpose of report

The aim of this report is to provide an ecological assessment of the proposed development areas located on Lot 8 on AB200 (Figure 1.1), and to identify areas and species of notable ecological or conservation value. This report does not make any recommendations regarding the development in relation to any Santos environmental authorities or other approvals.



Map by: PIC P:\GIS\Projects\215648\_Fairview\_Eco\_Assessment\215648\_Fairview\_076.mxd 10/10/2011 09:52

### Legend

- |                           |   |   |
|---------------------------|---|---|
| ☆ EVNT and Type A Species | <b>ESA Mapping (Including Buffer Areas)</b> | <b>Regional Ecosystem (VM Act Status)</b> |
| Corridors - Ground Truth  | Category A                                  | Endangered - Dominant                     |
| Geotech Borehole          | Category B                                  | Endangered - Sub-dominant                 |
| Cadastral                 | Category C                                  | Of Concern - Dominant                     |
| Watercourse               |   | Of Concern - Sub-dominant                 |
|                           |   | Least Concern                             |

Source:  
Cadastral: DERM, 2011.  
Regional Ecosystems: Version 6.1, The State of Queensland  
(Department of Environment and Resource Management),  
Sept 2011.



A1 scale: 1:32,500  
0 250 500 1,000 1,500 2,000 Meters

Date: 10/10/2011 Version: 1 Job No: 215648  
Coordinate system: GDA\_1994\_MGA\_Zone\_55



## 2 Methodology

### 2.1 Desktop methodology

Proposed development areas have been projected on a range of maps provided by Santos. These maps include Regional Ecosystem (RE) Mapping (version 6.0; Department of Environment and Resource Management [DERM]), Environmentally Sensitive Area (ESA) mapping, drainage mapping and aerial photography. Where available ahead of time, these resources were reviewed to determine target areas for the field inspection. It is important to note that the RE classifications used in this report are based on the 'biodiversity status' of the vegetation and not the '*Vegetation Management Act 1999* (VM Act) status' of the vegetation.

### 2.2 Field methodology

The proposed development areas were assessed by four (4) Aurecon ecologists (Chris Schell, Luke Foster, Sarah Stone, and Matthew Bailey) between the 3-10-2011 and the 7-10-2011. These assessments were to determine the existing vegetation communities and habitat value of the proposed clearing within the development areas as well as to verify the RE Mapping as produced by DERM.

GIS environmental constraints layers (eg RE Mapping, ESA mapping etc) and high resolution aerial photography were uploaded onto a toughbook (C5 mobile clinical assistant CFT-001 – Motion computing), with an integrated GPS used to locate surveys areas. Handheld Garmin GPS units (GPS map 76) were also used during the field investigations. It should be noted that while efforts were made to ensure the GPS co-ordinates provided in this report are accurate, a margin of error approximately +/- 15 m is expected due to the limitations of the devices used and the recording environment.

The areas assessed were of varying widths and lengths as shown in Figure 1.1.

The ground-truthing of the proposed development areas included undertaking detailed flora species surveys including sampling of unknown flora, and recording all incidental fauna observations. All species known to be of conservation significance (such as endangered, vulnerable, near threatened or Type A species under the *Nature Conservation Act 1992* [NC Act] or endangered, vulnerable or rare species under the *Environment Protection and Biodiversity Conservation Act 1999* [EPBC Act]) were recorded using the toughbook.

A list of flora species observed in the proposed development areas has been included in Appendix A. Incidental fauna observations are provided in the relevant sections throughout this report.





# 3 Ecological assessment

## 3.1 Additional Land Access Section A

### General

The proposed additional land access section A is located south west of F237 in the western regions of Lot 8 AB200. The area has been actively grazed and the majority of the area is mapped as non-remnant vegetation. On the western edge of the additional land access section, the vegetation is mapped as RE 11.10.1/11.9.5a 'Endangered – sub-dominant'. During surveys, it was found that the land access section did not contain any *Acacia harpophylla* (Brigalow) but rather contained open grassland and scattered mature and regrowth Eucalypt and Callitris species.

Due to the mapped 'Endangered' vegetation, the development area is located within a Category B ESA (refer to Figure 3.1).

There are no mapped watercourses within the additional land access area, with the closest mapped stream occurring approximately 300 metres to the east.

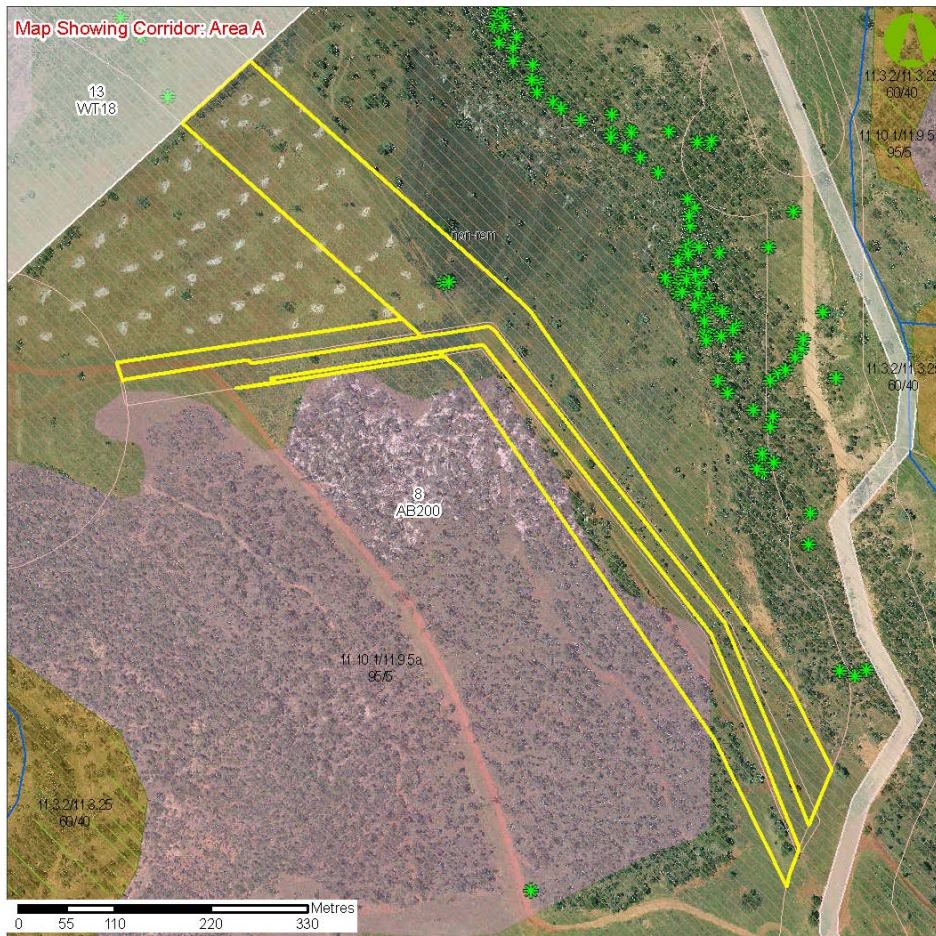


Figure 3.1 Aerial photograph and RE mapping of the Additional Land Access Area A

### Floristics

The vegetation within the additional land access section A is dominated by *Pennisetum ciliare* (Buffel Grass) with scattered native species including *Heteropogon contortus* (Black Spear Grass). Scattered regrowth on the western side of section A is dominated by *Eucalyptus melanophloia* (Silver Leaved Ironbark), *Eucalyptus populnea* (Poplar Box) and *Callitris glaucophylla* (White Cypress Pine). The canopy layer is quite tall, averaging 23 m and consists of species such as *Eucalyptus chloroclada* (Dirty Gum), *Eucalyptus populnea* (Poplar Box) and *Corymbia clarksoniana* (Clarkson's Bloodwood).

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the EPBC Act were recorded within or directly adjacent to the proposed development area. Furthermore, no species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations. A flora species list observed for the proposed development areas is provided in Appendix A.

### Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)

- Scattered mature tree stands
- High level of disturbance
- Buffel dominated grassland

The proposed development area contains a limited range of habitat features. Varied vegetation structure is present, however the level of disturbance is quite high and with the lack of other habitat values such as hollows, rocky areas and high quality watercourses, the habitat value of the area is considered to be low.

Six (6) fauna species were recorded within section A during surveys (Table 1).

**Table 1 Incidental fauna species recorded during field investigations**

Common	Species
Wallaroo	<i>Macropus robustus robustus</i>
Noisy Miner	<i>Manorina melanocephala</i>
Torresian Crow	<i>Corvus orru</i>
Australian Magpie	<i>Cracticus tibicen</i>
Pale Headed Rosella	<i>Platycercus adscitus</i>
Nankeen Kestrel	<i>Falco cenchroides</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.2 Additional Land Access Section B

### General

The proposed additional land access section B contains two (2) parts all of which are located directly adjacent to the Basin Road and the proposed F237 pipeline (Figure 2) on Lot 8 AB200. The area had been recently burnt at the time of field investigations.

The area is currently mapped as non-remnant vegetation on the DERM certified RE Mapping, and this was confirmed during field investigations.

A 'Category C' ESA buffer is mapped across the area, however this buffer is associated with an 'Of Concern' RE located outside of the proposed realignment area (approximately 340 m to the east) (refer to Figure 3.2).

There are no mapped watercourses located within the area, with the nearest watercourse located approximately 130 m to the west (Hutton Creek).

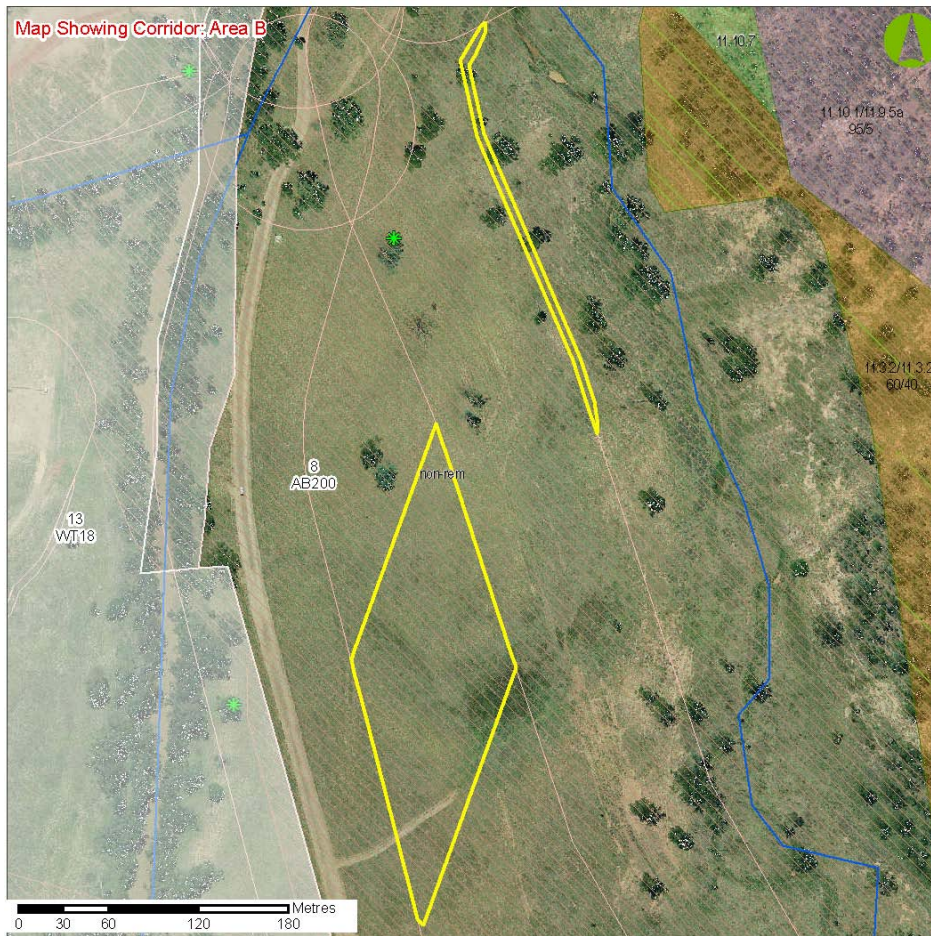


Figure 3.2 Aerial photograph and RE mapping of the Additional Land Access Area B

### Floristics

This site had been recently burnt (ie within the preceding 3-5 days) at the time of field investigations, and no trees or shrubs were recorded within the realignment area. The only ground cover species recorded within the area was *Pennisetum ciliare* (Buffel Grass), however the cover was less than 10% of the total area due to the recent burn. It is noted however that aerial imagery, taken prior to the burn, indicates that there were no mature/canopy trees present within this realignment area.

No species of conservation significance (ie EVNT species) protected under the provisions of the NC Act and/or EPBC Act were recorded within or directly adjacent to the proposed development area. Furthermore, no species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during field investigations.

### Habitat values

No incidental fauna species were recorded during field investigations. The proposed realignment area contains no woody vegetation and has been extensively disturbed as a result of previous vegetation clearing and the recent burn. No habitat features were recorded within the area. As a result, the habitat value of the proposed development area is considered low overall.

Accordingly, the species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances (ie House mouse [*Mus musculus*], common macropods). Common birds of prey (eg Nankeen Kestrel [*Falco cenchroides*],

Black Kite [*Milvus migrans*]) and grassland species are also expected to utilise this area and the surrounding areas for foraging purposes.

### 3.3 Additional Land Access Section C

#### General

The proposed additional land access section C is located in the south western portion of Lot 8 AB200 adjacent to TP-F080 and south of F278. The area has been actively grazed and the entire section is mapped as non-remnant (refer to Figure 3.3).

A stream order 1 watercourse transects section C, this was dry at the time of surveys, and appears to be highly degraded.

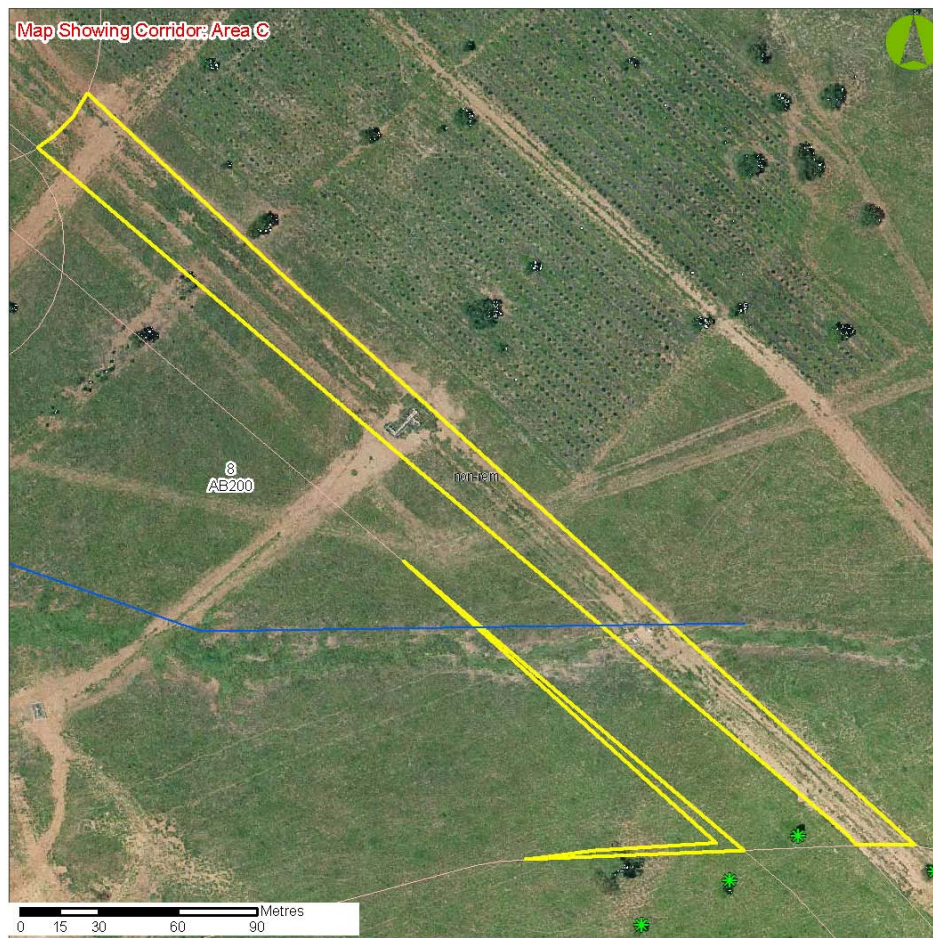


Figure 3.3 Aerial photograph and RE mapping of the Additional Land Access Area C

#### Floristics

The vegetation within the additional land access section C is dominated by *Pennisetum ciliare* (Buffel Grass) with scattered native species including *Themeda triandra* (Kangaroo Grass). Canopy layer is lacking entirely within this section. Sparsely scattered shrub species present within the section include *Capparis spinosa* (Capparis) and some smaller *Maireana microphylla* (Small-leaf Blue Bush).

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or the EPBC Act were recorded within or directly adjacent to the proposed development area.

One (1) species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) was recorded during these investigations, the details of which is shown in Table 2. A flora species list for the proposed development areas is provided in Appendix A.

**Table 2 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)**

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton populneus</i>	695143	7150939

### Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Lack of mature tree stands
- High level of disturbance
- Buffel dominated grassland

The proposed development area contains a limited range of habitat features. Varied vegetation structure is present, however the level of disturbance is quite high and with the lack of other habitat values such as hollows, rocky areas and high quality watercourses, the habitat value of the area is considered to be low.

One (1) fauna species were recorded within section C during surveys (Table 3).

**Table 3: Fauna species recorded during field investigations**

Common	Species
Noisy Miner	<i>Manorina melanocephala</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.4 Additional Land Access Section D

### General

The proposed additional land access section D is located on the southern boundary of Lot 8 AB200 branching off T2 towards Fairview 179. The area surveyed has been actively grazed and contains two mapped vegetation types, non-remnant and 11.10.1. The non-remnant areas were found to be correct, however the vegetation mapped as RE 11.10.1 (*Corymbia citridora* open forest on coarse-grained sedimentary rocks) was found to be absent in the area that falls within Section D.

A stream order 1 watercourse transects the eastern end of section D and occurs within the remnant vegetation. It was noted that habitat within the creek area is relatively high due to rocky banks, vegetated riparian zone and woody debris.

The proposed development is located approximately 2.5 km from the nearest ESA, which is an area to the west of the development that is mapped as RE 11.10.1/11.9.5a 'endangered regional ecosystem' sub-dominant vegetation (refer to Figure 3.4).

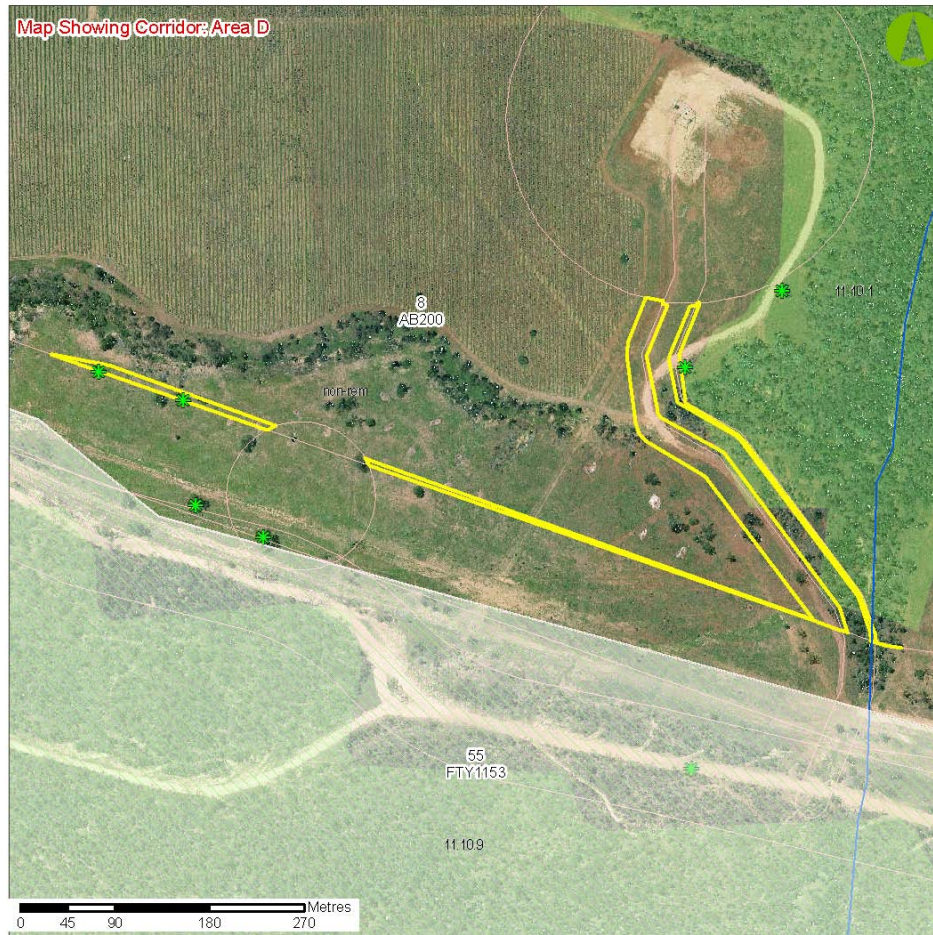


Figure 3.4 Aerial photograph and RE mapping of the Additional Land Access Area D

## Floristics

The vegetation within the additional land access section D is dominated by *Pennisetum ciliare* (Buffel Grass) and scattered *Bothriochloa bladhii* (Forest Blue Grass) clumps. The canopy layer, in the eastern part of section D is dominated by *Acacia harpophylla* (Brigalow) and *Eucalyptus populnea* (Poplar Box), both as scattered mature trees and emergent. The shrub layer present within the vegetated area is relatively dense with species including *Dodonaea viscosa* (Sticky Hopbush), *Eremophila mitchellii* (False Sandalwood) and *Acacia decora* (Pretty wattle) dominating.

One species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the EPBC Act, was recorded within the footprint. *Acacia harpophylla* (Brigalow) is confined to a small clump (<1ha) on the eastern edge of the footprint.

One (1) species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) was recorded during these investigations, however it appeared to be located just outside the footprint. The details of this species are presented in Table 4.

**Table 4 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)**

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton populneus</i>	695143	7150939

**Habitat values**

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks)
- Moderate woody debris (ie fallen/felled timber, including hollow-bearing logs) particularly within the vegetated areas
- Mature tree stands
- High level of disturbance in cleared areas
- Buffel dominated grassland
- Moderate leaf litter
- Limited fissured tree bark

The proposed development area contains a moderate range of habitat features. Varied vegetation structure is present, as is a range of habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be moderate. No fauna species were recorded within section D during surveys.

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

**3.5 Additional Land Access Section E**

**General**

The proposed additional land access section E is located on the northern boundary of Lot 8 AB200 and is a realignment of the Fairview Water Gathering System corridor. The area surveyed has been partially grazed (the lower slopes) and is still remnant vegetation on the upper slopes and towards the creek.

Three (3) mapped vegetation types are mapped as occurring within the proposed realignment, 11.9.5, 11.10.7 and non-remnant, which are classified as ‘endangered’, ‘no concern at present’ and ‘non-remnant’ respectively. These vegetation types were confirmed during surveys.

A stream order six (6) watercourse bisects the proposed realignment on the eastern edge and is of high habitat value. This watercourse is also classified as a referable wetland (DERM).

The proposed realignment contains RE 11.9.5 which is listed as a ‘endangered regional ecosystem’. Due to the presence of mapped endangered RE 11.9.5, the area is located within a Category B ESA (refer to Figure 3.5).



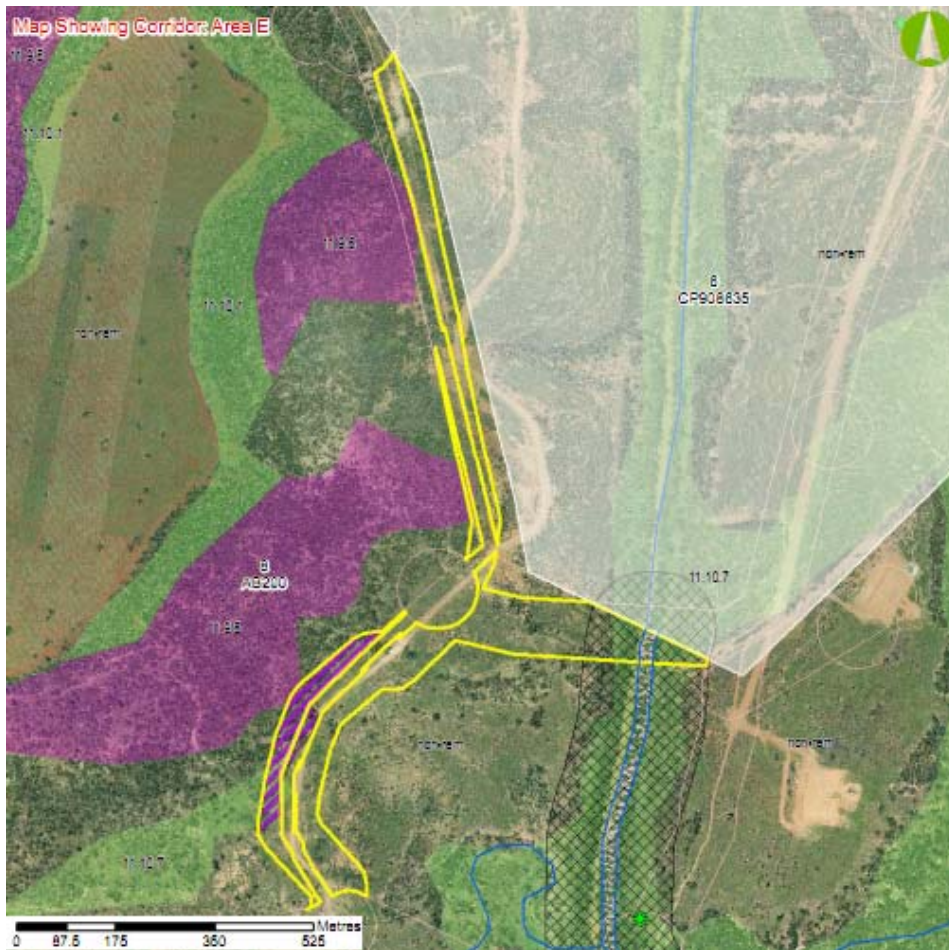


Figure 3.5 Aerial photograph and RE mapping of the Additional Land Access Area E

### Floristics

The vegetation within the proposed realignment in section E is a mix between cleared paddock species and forest species. On the western and eastern edge of the realignment, the vegetation consists of mature, dense species such as *Acacia harpophylla* (Brigalow), *Eucalyptus populnea* (Poplar Box), *Eucalyptus chloroclada* (Dirty Gum), and *Eucalyptus melanophloia* (Silver-leaved Ironbark). The shrub layer in the vegetated areas are dominated by *Dodonaea viscosa* (Sticky Hopbush), *Eremophila mitchellii* (False Sandalwood), *Acacia decora* (Pretty wattle) and *Geijera parviflora* (Wilga).

The central parts of the realignment corridor are located within historically cleared areas. These areas lack a mature canopy layer and are dominated by *Pennisetum ciliare* (Buffel Grass) and a variety of native species including *Sporobolus creber* (Western Rat's Tail Grass) and *Lomandra longifolia* (Lomandra).

One species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the EPBC Act, was recorded within the footprint this being *Acacia harpophylla* (Brigalow). Brigalow is a threatened ecological community under the EPBC Act. Along the western edge of the realignment corridor is a large mature stand of this community, some of which are over 18 m high.

No species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.

## Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks) in cleared areas
- High level of woody debris (ie fallen/felled timber, including hollow-bearing logs) particularly within the vegetated areas
- Mature tree stands
- Buffel dominated grassland
- High level of leaf litter
- Fissured tree bark
- Rocky crevices and stream banks
- High level watercourse habitat
- Hollow bearing trees along creek
- Dead stags

The proposed development area contains a high range of habitat features. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of high value within the vegetated areas, and low – moderate within the cleared areas.

A total of ten (10) fauna species were recorded during surveys within the realignment area in section E as outlined in Table 5. A variety of macropod scats were also recorded within the area.

Table 5: Fauna species recorded during field investigations

Common	Species
Striated Pardalote	<i>Pardalotus striatus</i>
Pied Currawong	<i>Strepera graculina</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>
Australian Magpie	<i>Gymnorhina tibicen</i>
Sulphur Crested Cockatoo	<i>Cacatua galerita</i>
Noisy Miner	<i>Manorina melanocephala</i>
Torresian Crow	<i>Corvus orru</i>
Pheasant Coucal	<i>Centropus phasianinus</i>
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
Noisy Friarbird	<i>Philemon corniculatus</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.6 Additional Land Access Section F

### General

The proposed additional land access section F is located on the central portion of the southern boundary of Lot 8 AB200, slightly north of T2. The area surveyed consists of cleared grazing area and remnant vegetation.

Two mapped vegetation types are present within this corridor, being RE 11.10.1 and non-remnant which are classified as 'no concern at present' and 'non-remnant' respectively. The non-remnant areas were found to be correct, however the vegetation mapped as RE 11.10.1 (*Corymbia citridora* open forest on course-grained sedimentary rocks) was found to be absent in the area that falls within Section F.

No mapped watercourses occur within the realignment corridor, with the closest (stream order 3) being 200 m to the south.

The proposed realignment contains no ESAs however 50 m to the east is RE 11.3.2/11.3.25 which is listed as 'of concern' and is therefore a Category C ESA. 100 metres to the south west is a stand of *Acacia harpophylla* (Brigalow) identified in a previous field investigation. This area of Brigalow is less than 0.5 ha in total (refer to Figure 3.6).

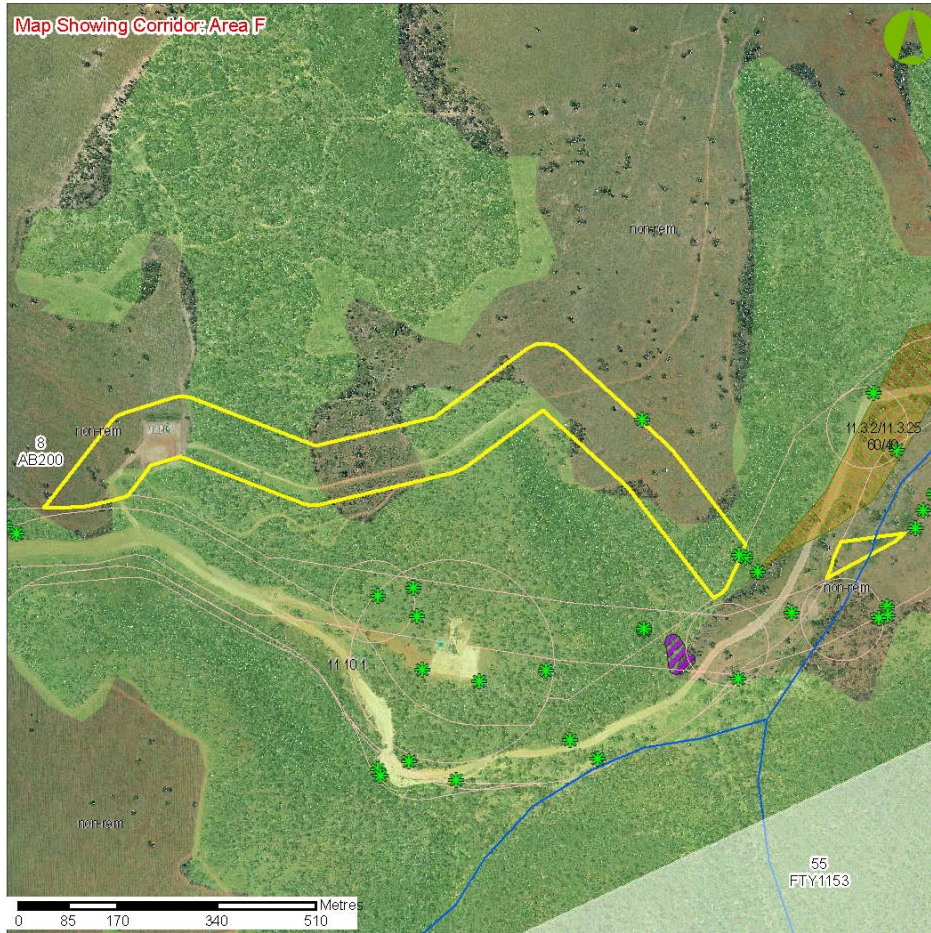


Figure 3.6 Aerial photograph and RE mapping of the Additional Land Access Area F

### Floristics

The vegetation within the proposed section F is a mix between cleared paddock species and forest species. Vegetated areas are dominated by *Eucalyptus melanophloia* (Silver-leaved Ironbark), *Eucalyptus populnea* (Poplar Box), and scattered mature *Grevillea striata* (Beefwood). The shrub layer is relatively dense particularly on the slopes, with species such as *Dodonaea viscosa* (Sticky Hopbush), *Eremophila mitchellii* (False Sandalwood) and *Acacia decora* (Pretty wattle) and *Geijera parviflora* (Wilga) dominating. Ground species include a mixture of native grasses, *Themeda avenacea* (Wild Oats Grass) and *Sporobolus creber* (Western Rat's Tail Grass).

The historically cleared areas are dominated by *Pennisetum ciliare* (Buffel Grass), with scattered clumps of *Capparis lanthifolia* (Nipan).

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or the EPBC Act were recorded within the

proposed development area Two (2) species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations, the details of which are shown below in Table 6.

**Table 6 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)**

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton rupestris</i>	700094	7151429
<i>Brachychiton rupestris</i>	700260	7151197

### Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks) in cleared areas
- High level of woody debris (ie fallen/felled timber, including hollow-bearing logs) particularly within the vegetated areas and slopes
- Mature tree stands
- Buffel dominated grassland
- High level of leaf litter
- Fissured tree bark
- Rocky crevices and scattered boulders on slopes
- Hollow bearing trees on slopes
- Dead stags

The proposed development area contains a moderate to high range of habitat features in the vegetated areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of high value within these areas.

The cleared areas due to their lack of key habitat attributes are considered to be of low habitat value.

A total of ten (10) fauna species were recorded during surveys within the realignment area in section F as outlined in Table 7. A variety of macropod scats were also recorded within the area.

**Table 7: Fauna species recorded during field investigations**

Common	Species
Striated Pardalote	<i>Pardalotus striatus</i>
Pied Currawong	<i>Strepera graculina</i>
Noisy Miner	<i>Manorina melanocephala</i>
Torresian Crow	<i>Corvus orru</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
Pale-headed Rosella	<i>Platycercus adscitus</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

### 3.7 Additional Land Access Section G

#### General

The proposed additional land access section G is located south of the Hutton River, slightly to the west of F267 in Lot 8 AB200. This section is made up of ten (10) small parcels of realignment corridor. The area surveyed contains two (2) types of mapped vegetation, RE 11.3.2/11.3.25 and non-remnant, of which RE 11.3.2/11.3.25 is listed as 'of concern'. These vegetation types were confirmed during surveys.

No mapped watercourses occur within the realignment corridor, however a stream order 6 watercourse ( Hutton Creek) occurs within 250 m of some of the parcels included in section G.

The proposed realignment contains one (1) ESA within the northern group of parcels. Category C ESA is present due to the mapped remnant vegetation RE 11.3.2/11.3.25. Towards the southern portion of section G, two areas of *Acacia harpophylla* (Brigalow) identified in a previous field investigation occur within 85 m of one parcel. Brigalow is a threatened ecological community under the EPBC Act. Both of these areas of Brigalow are less than 0.5ha in area (refer to Figure 3.7).

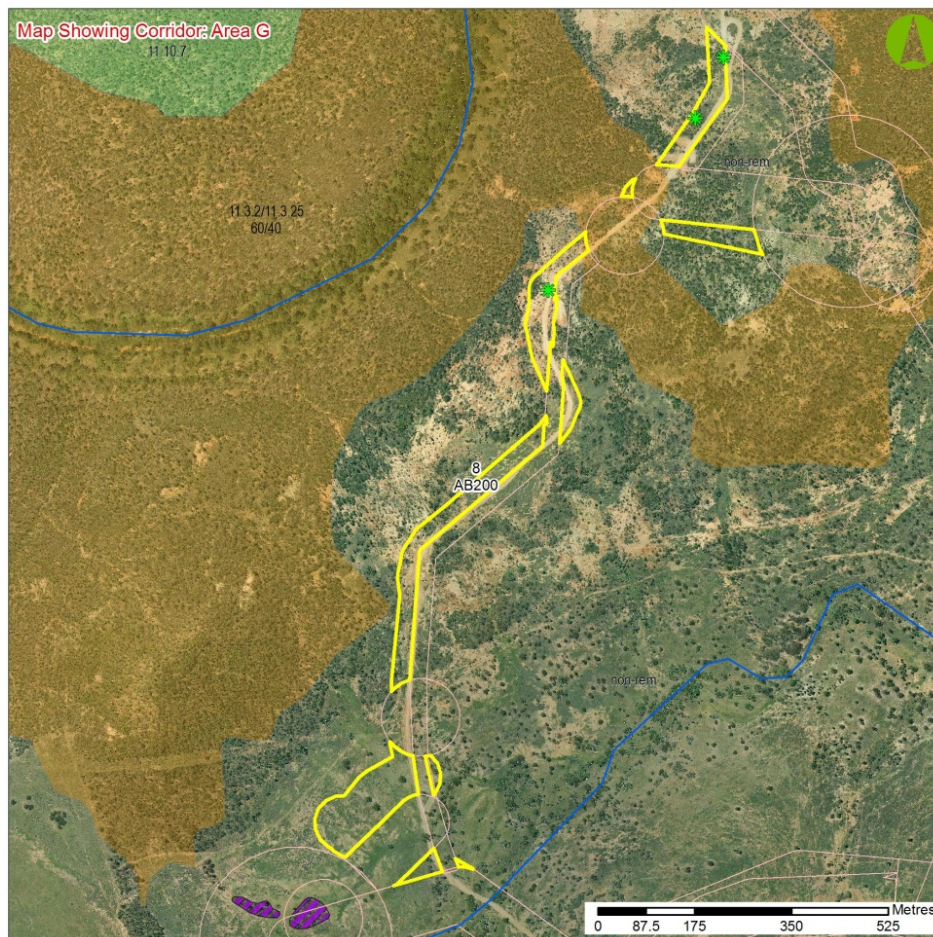


Figure 3.7 Aerial photograph and RE mapping of the Additional Land Access Area G

## Floristics

The vegetation within the proposed section G is a mix between cleared paddock species and forest species. The wooded areas are dominated by scattered regrowth *Eucalyptus populnea* (Poplar Box), *Callitris glaucophylla* (White Cypress Pine), *Corymbia trachyphloia* (Small Fruited Bloodwood), and some scattered *Angophora floribunda* (Rough-barked Apple) on the northernmost parcel. Shrub species are dense throughout the wooded areas, with species including *Acacia decora* (Pretty Wattle), *Geijera parviflora* (Wilga), *Acacia leiocalyx* (Black Wattle), and *Bursaria spinosa* (Prickly Pine).

The cleared areas associated with section G are dominated by *Pennisetum ciliare* (Buffel Grass), *Themeda triandra* (Kangaroo Grass) and *Sporobolus creber* (Western Rat's Tail Grass) and a mixture of introduced species. Scattered *Eucalyptus populnea* (Poplar Box) and *Callitris glaucophylla* (White Cypress Pine) are also present throughout the cleared areas.

The realignment parcels within section G do fall partially within mapped RE 11.3.2/11.3.25 which is an 'of concern' regional ecosystem.

During surveys it was noted that there were a number of small (<1 ha) scattered stands of *Acacia harpophylla* (Brigalow) present within section G, however due to their small size and limited height they were not mapped.

Three (3) species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations, the details of which are shown below in Table 8.

**Table 8 Location of Type A Restricted Plants (Nature Conservation Act 1992)**

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton rupestris</i>	702679	7154618
<i>Brachychiton populneus</i>	702413	7154307
<i>Brachychiton populneus</i>	702730	7154729

## Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks) in cleared areas
- High level of woody debris (ie fallen/felled timber, including hollow-bearing logs) particularly within the vegetated areas and slopes
- Mature tree stands
- Buffel dominated grassland
- High level of leaf litter
- Fissured tree bark
- Rocky crevices and scattered boulders on slopes
- Hollow bearing trees on slopes
- Dead stags
- Major water course within close proximity

The proposed development area contains a moderate to high range of habitat features in the vegetated areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of high value within these areas.

The cleared areas due to their lack of several key habitat attributes are considered to be of low to moderate habitat value.

A total of five (5) fauna species were recorded during surveys within the realignment area in section G as outlined in Table 9. A variety of macropod scats were also recorded within the area.

**Table 9: Fauna species recorded during field investigations**

Common	Species
Noisy Miner	<i>Manorina melanocephala</i>
Torresian Crow	<i>Corvus orru</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
White-throated Gerygone	<i>Gerygone olivacea</i>
Weebill	<i>Smicrornis brevirostris</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

### 3.8 Additional Land Access Section H

#### General

The proposed additional land access section H is located approximately 380 south of the Hutton Creek, and branches of T2. This section is made up of six (6) small parcels of realignment corridor. The area surveyed is RE mapped as non-remnant, which was confirmed during surveys (refer to Figure 3.8).

A stream order one (1) watercourse occurs within the southern portion of this section. A referable wetland (DERM) occurs just north of the realignment corridor along the mapped watercourse. The required wetland buffer falls within the northernmost portion of the realignment corridor. At the time of surveys it was noted that the creek was dry and riparian vegetation was limited.

*Acacia harpophylla* (Brigalow) which is listed as a threatened ecological community under the provisions of the EPBC Act is recorded directly adjacent to the proposed development area in the northernmost parcel. This is an area of regrowth Brigalow which was identified in a previous field inspection. This area of Brigalow is approximately 0.8ha.

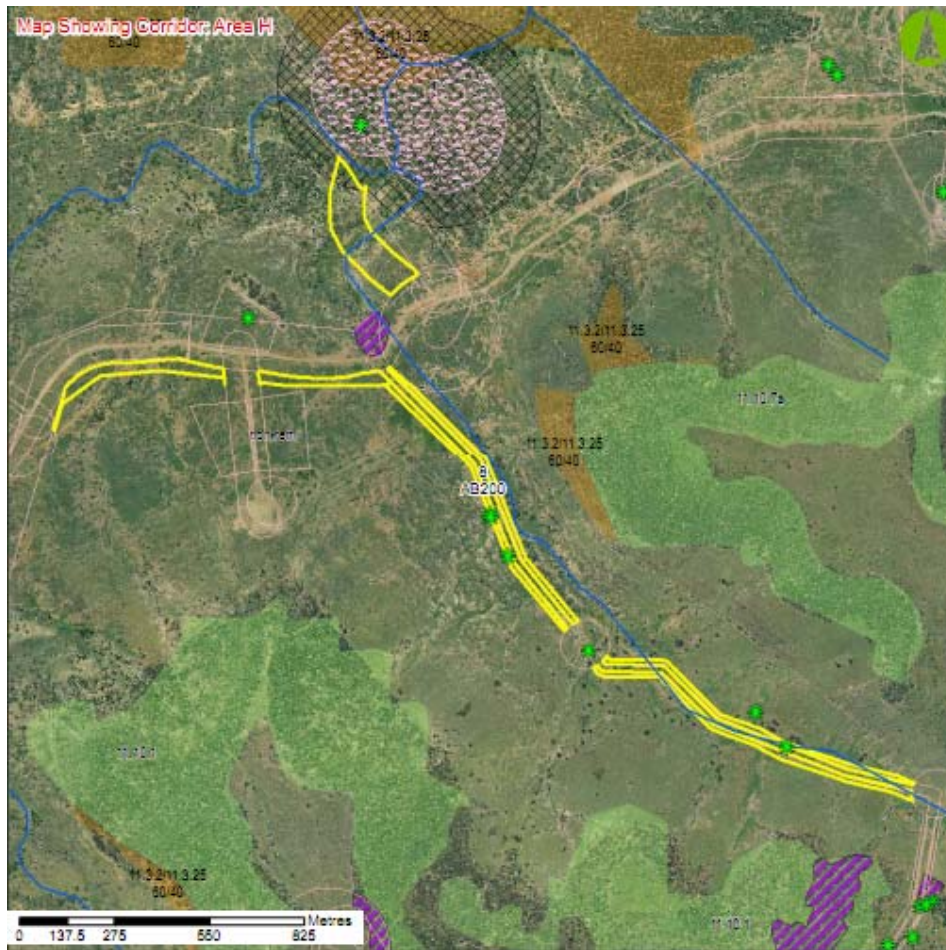


Figure 3.8 Aerial photograph and RE mapping of the Additional Land Access Area H

### Floristics

The vegetation within the proposed section H is a mix between cleared paddock species and forest species. The majority of the parcels are dominated by scattered regrowth including *Eucalyptus populnea* (Poplar Box), *Callitris glaucophylla* (White Cypress Pine), *Corymbia trachyphloia* (Small Fruited Bloodwood), and some scattered *Angophora floribunda* (Rough-barked Apple) along the creek. Shrub species are also scattered throughout section H with species including *Acacia decora* (Pretty Wattle), *Geijera parviflora* (Wilga), *Acacia leiocalyx* (Black Wattle), and *Bursaria spinosa* (Prickly Pine) dominating.

The open areas associated with section H are dominated by *Pennisetum ciliare* (Buffel Grass), *Themeda triandra* (Kangaroo Grass) and *Sporobolus creber* (Western Rat's Tail Grass) and a mixture of introduced species.

Four (4) species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations, the details of which are shown below in Table 10.



**Table 10** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton populneus</i>	703913	7152690
<i>Brachychiton populneus</i>	703925	7152681
<i>Brachychiton populneus</i>	703964	7152568
<i>Brachychiton populneus</i>	704770	7152016

### Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks) in cleared areas
- Moderate level of woody debris (ie fallen/felled timber, including hollow-bearing logs) particularly within the vegetated areas and slopes
- Scattered mature paddock trees
- Buffel dominated grassland
- High level of leaf litter
- Minor water course within close proximity

The proposed development area contains a moderate range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of moderate value within section H.

A total of five (5) fauna species were recorded during surveys within the realignment area in section H as outlined in Table 11. A variety of macropod scats were also recorded within the area.

**Table 11: Fauna species recorded during field investigations**

Common	Species
Noisy Miner	<i>Manorina melanocephala</i>
Torresian Crow	<i>Corvus orru</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
White-throated Gerygone	<i>Gerygone olivacea</i>
Weebill	<i>Smicrornis brevirostris</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

### 3.9 Additional Land Access Section I

#### General

The proposed additional land access section I contains three (3) parcels all of which are realignments of T2 on Lot 8 AB200.

The area is currently mapped as non-remnant vegetation on the DERM certified RE Mapping, and this was confirmed during field investigations (refer to Figure 3.9).

Two stands of *Acacia harpophylla* (Brigalow) are located on the eastern edge of section I, with the easternmost parcel bisecting one of the stands.

A stream order one (1) watercourse is located within the area, although at the time of surveys this appeared dry and lacking in riparian vegetation.

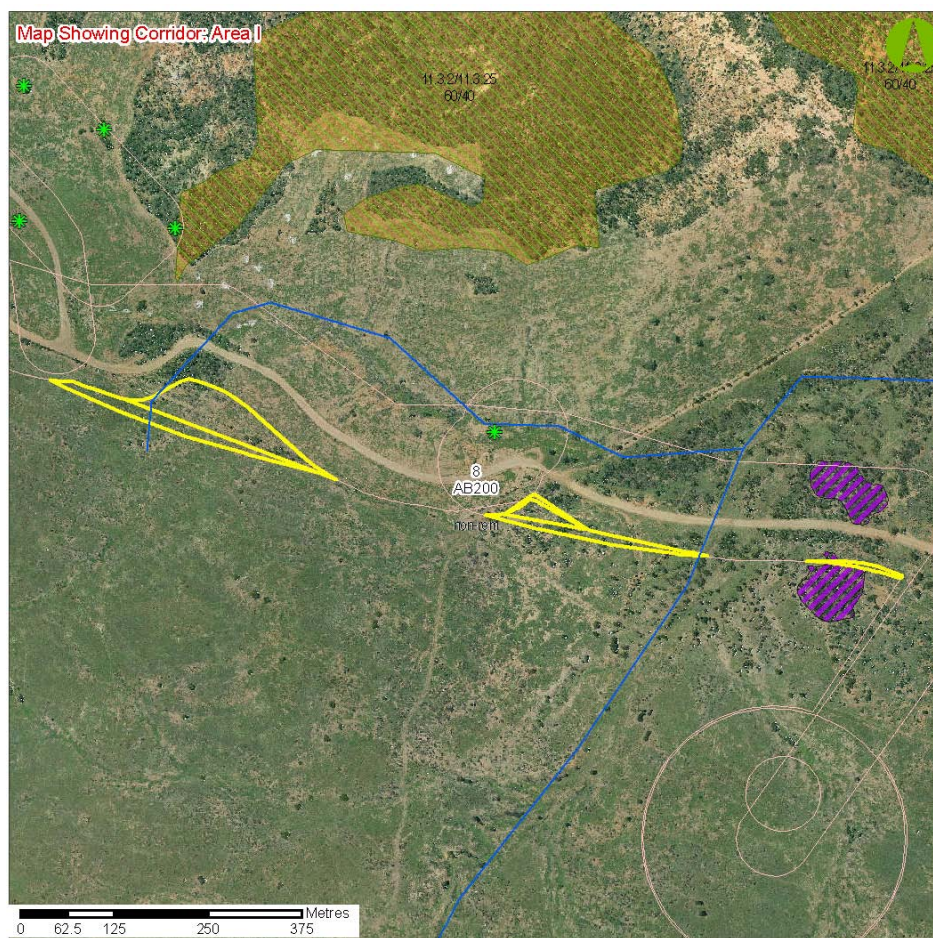


Figure 3.9 Aerial photograph and RE mapping of the Additional Land Access Area I

## Floristics

The vegetation within the proposed section I is a mix between cleared paddock species and regrowth species. The majority of the parcels are dominated by scattered regrowth including *Eucalyptus populnea* (Poplar Box), *Callitris glaucophylla* (White Cypress Pine), and some scattered *Corymbia trachyphloia* (Small Fruited Bloodwood). Shrub species are also scattered throughout section I with species including *Acacia decora* (Pretty Wattle), *Geijera parviflora* (Wilga), *Acacia leiocalyx* (Black Wattle), and *Bursaria spinosa* (Prickly Pine) dominating.

The open associated with section I are dominated by *Pennisetum ciliare* (Buffel Grass), *Themeda triandra* (Kangaroo Grass) and *Sporobolus creber* (Western Rat's Tail Grass) and a mixture of introduced species.

One species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the EPBC Act, was recorded within the footprint. *Acacia harpophylla* (Brigalow) is confined to two stands, one of which is bisected by the realignment. This community is listed as a threatened ecological community under the EPBC Act. Both areas of Brigalow are approximately 0.5ha in size.

No species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.

## Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks) in cleared areas
- Moderate level of woody debris (ie fallen/felled timber, including hollow-bearing logs) particularly within the vegetated areas and slopes
- Scattered mature paddock trees
- Buffel dominated grassland
- High level of leaf litter
- Minor water course within close proximity

The proposed development area contains a low to moderate range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of moderate value within section I.

A total of five (5) fauna species were recorded during surveys within the realignment area in section I as outlined in Table 12. A variety of macropod scats were also recorded within the area.

Table 12: Fauna species recorded during field investigations

Common	Species
Noisy Miner	<i>Manorina melanocephala</i>
Torresian Crow	<i>Corvus orru</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
White-throated Gerygone	<i>Gerygone olivacea</i>
Weebill	<i>Smicrornis brevirostris</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.10 Additional Land Access Section J

### General

The proposed additional land access section J (also known as Fairview Gas Gathering System) is located directly adjacent to F270 on Lot 8 AB200.

The area is currently mapped as RE 11.3.2/11.3.25 vegetation on the DERM certified RE Mapping, however during surveys, the realignment portion was found to be *Callitris* dominated. No watercourses occur within section J; however the Hutton Creek (stream order 6) occurs to the east and north approximately 300 m away (refer to Figure 3.10).

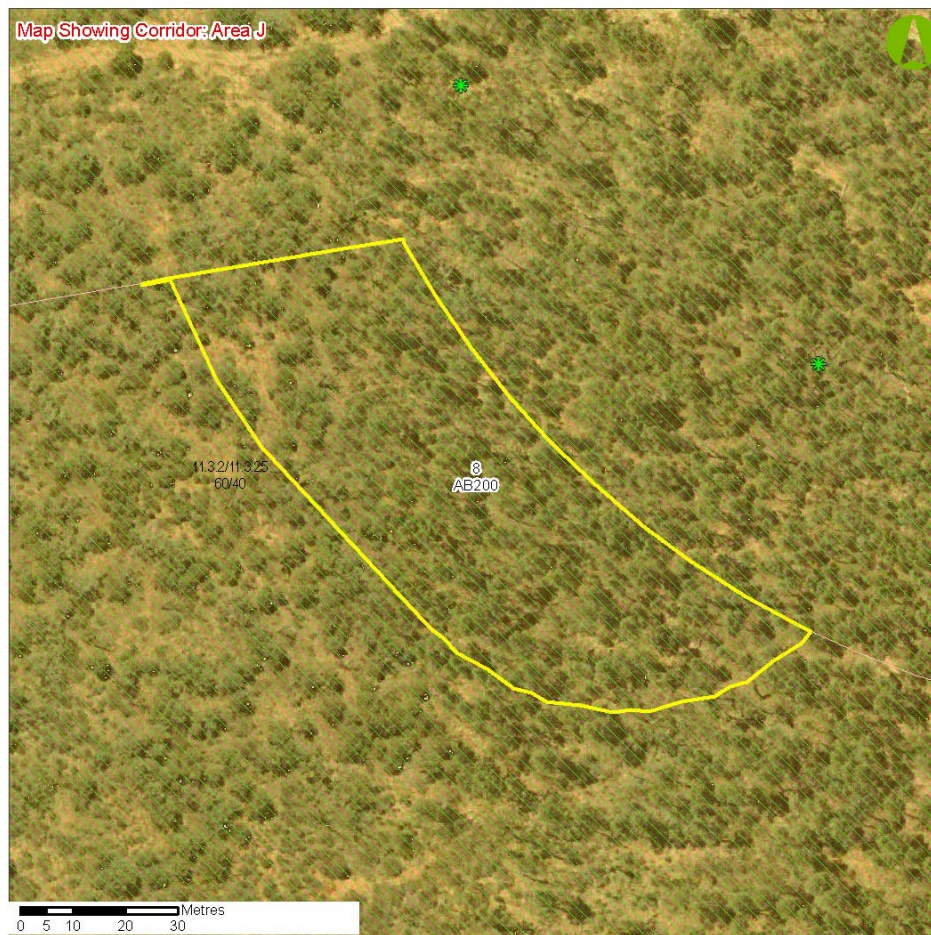


Figure 3.10 Aerial photograph and RE mapping of the Additional Land Access Area J

### Floristics

The vegetation within the proposed section J is dominated by *Callitris glaucophylla* (White Cypress Pine), scattered *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Grevillea striata* (Beefwood). Shrub species are scattered and include *Acacia longispicata* (Slender Flower Wattle), *Geijera parviflora* (Wilga), *Acacia excelsa* (Ironwood) and regrowth *Callitris glaucophylla* (White Cypress Pine). Ground species are predominantly native species including *Aristida caput-medusae* (Curly Head Wire Grass), and *Aristida holathera* (Tall Wire Grass).

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or EPBC Act, was recorded within the footprint.

No species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.

### Habitat values

Habitat features associated with the proposed development area include:

- Moderate level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Scattered mature trees
- Reasonably dense shrub layer
- High level of leaf litter
- Major watercourse within close proximity

The proposed development area contains a moderate range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of moderate value within section J

A total of two (2) fauna species were recorded during surveys within the realignment area in section J as outlined in Table 13. A variety of macropod scats were also recorded within the area.

**Table 13: Fauna species recorded during field investigations**

Common	Species
Pale-headed Rosella	<i>Platycercus adscitus</i>
Grey Butcher Bird	<i>Cracticus torquatus</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.11 Additional Land Access Section K

### General

The proposed additional land access section K is located directly adjacent to F264 on Lot 8 AB200.

The area is currently mapped as non-remnant with only a small portion in the far north-eastern segment of the corridor mapped as RE 11.3.2/11.3.25 vegetation on the DERM certified RE Mapping. This was confirmed during field surveys.

Due to the presence of mapped 'of concern' vegetation, the development area is located in a Category C ESA (refer to Figure 3.11).

No watercourses occur within section K; however the Hutton Creek (stream order 6) occurs to the north approximately 400 m away. This area is also classified as a referable wetland (DERM). The northern part of the realignment corridor falls within this wetland zone.

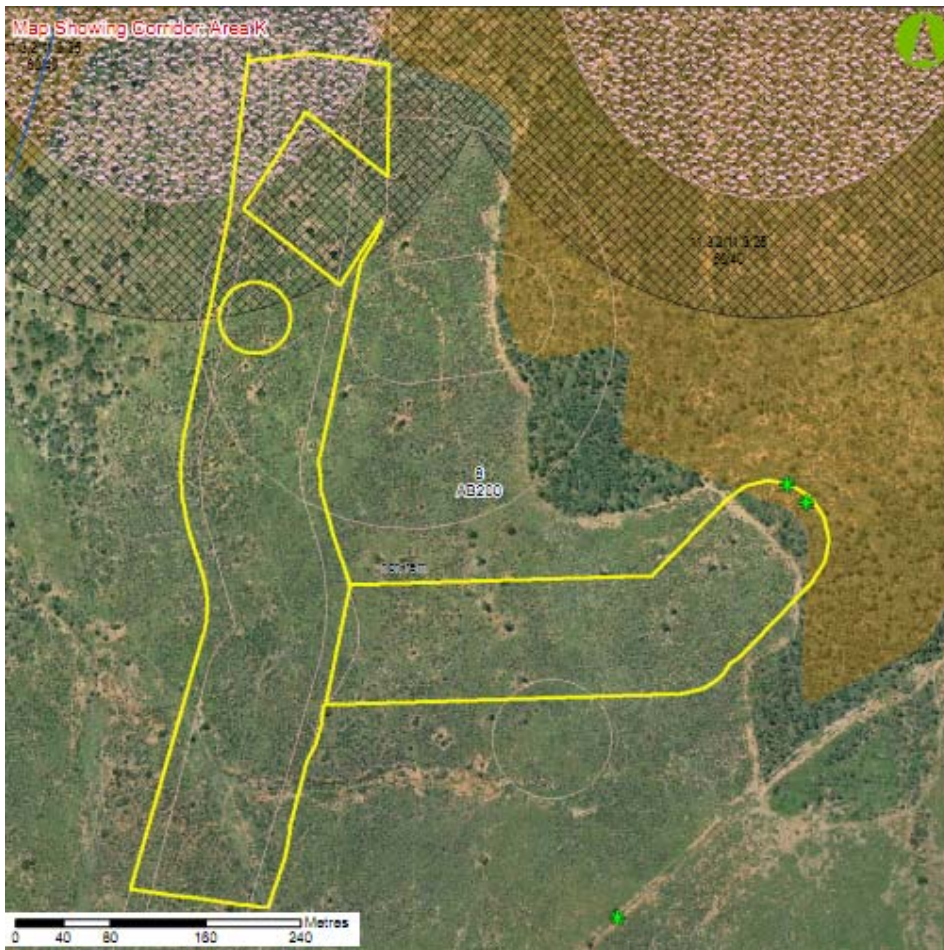


Figure 3.11 Aerial photograph and RE mapping of the Additional Land Access Area K

### Floristics

The vegetation within the wooded portion of proposed section J is dominated by *Callitris glaucophylla* (White Cypress Pine), *Eucalyptus populnea* (Poplar Box), *Casuarina cristata* (Belah) and scattered *Eucalyptus melanophloia* (Silver-leaved Ironbark). Shrub species include *Dodonaea viscosa* (Sticky Hopbush), *Grevillea striata* (Beefwood), *Geijera parviflora* (Wilga), and *Acacia decora* (Pretty Wattle). Ground species are predominantly native, including *Aristida contorta* (Curly Wire Grass), and *Eragrostis brownii* (Brown's Love Grass).

The majority of the proposed alignment has historically been cleared and grazed, and as such species such as *Pennisetum ciliare* (Buffel Grass) dominates, and *Themeda triandra* (Kangaroo Grass) and *Sporobolus creber* (Western Rat's Tail Grass) occur in patches.

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or EPBC Act, was recorded within the footprint.

Two (2) species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations, the details of which are displayed in Table 14.

**Table 14** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton populneus</i>	707811	7153879
<i>Brachychiton populneus</i>	707827	7153863

**Habitat values**

Habitat features associated with the proposed development area include:

- Moderate level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Dense groundcover in the form of grassy tussocks
- Scattered mature trees in paddock, and throughout wooded area
- Reasonably dense shrub layer in wooded area
- High level of leaf litter
- Major watercourse within close proximity

The proposed development area contains a low to moderate range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of low value within section K

A total of eight (8) fauna species were recorded during surveys within the realignment area in section K as outlined in Table 15. A variety of macropod scats were also recorded within the area.

**Table 15: Fauna species recorded during field investigations**

Common	Species
Brown Honeyeater	<i>Lichmera indistincta</i>
Red-backed Fairy-wren	<i>Malurus melanocephalus</i>
Rufous Whistler	<i>Pachycephala rufiventris</i>
Black faced Cuckoo Shrike	<i>Coracina novaehollandiae</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Grey Crowned Babbler	<i>Pomatostomus temporalis</i>
Noisy Friarbird	<i>Philemon corniculatus</i>
Golden-headed Cisticola	<i>Cisticola exilis</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.12 Additional Land Access Section L

### General

The proposed additional land access section L branches of T2 to the south and eventually meets up with FV12-26 on Lot 8 AB200.

The area is currently mapped as non-remnant on the DERM certified RE Mapping. This was confirmed during field surveys (refer to Figure 3.12).

A stream order one (1) watercourse occurs immediately adjacent to section L; and bisects the southern portion of section L.

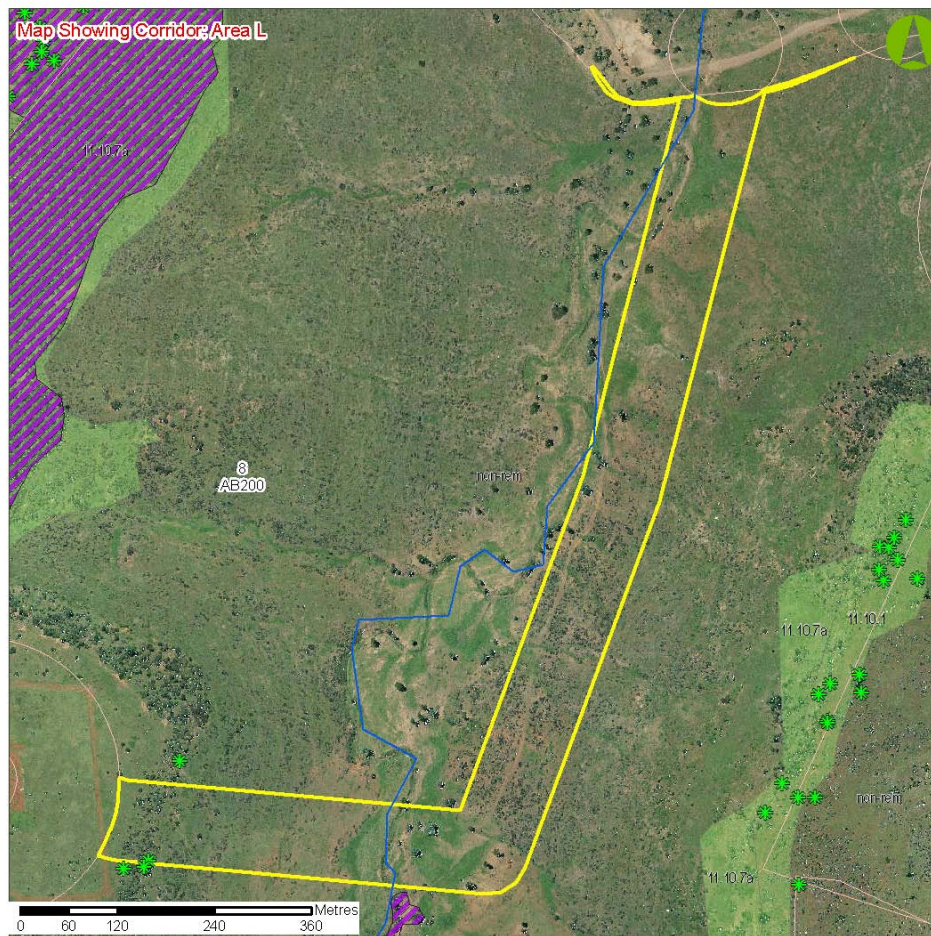


Figure 3.12 Aerial photograph and RE mapping of the Additional Land Access Area L

### Floristics

Section L is predominantly cleared with scattered paddock trees remaining in small numbers. Most of the vegetation present is represented by regrowth *Acacia harpophylla* (Brigalow) and numerous *Acacia* species. Some remaining canopy trees including *Casuarina cristata* (Belah) and *Brachychiton rupestris* (Narrow-leaf Bottle Tree) are present.

The ground layer is dominated by *Pennisetum ciliare* (Buffel Grass), with scattered patches of native species including *Aristida contorta* (Curly Wire Grass), *Eragrostis brownie* (Brown's Love Grass) and *Sporobolus creber* (Western Rat's Tail Grass).



One (1) species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the EPBC Act, was recorded within ten (10) metres of the footprint. This stand of *Acacia harpophylla* (Brigalow) occurs on the southern edge of the realignment corridor. Brigalow is a threatened ecological community under the EPBC Act. The area of Brigalow is approximately 0.6ha in size.

Two (2) species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations, the details of which are displayed in Table 16. One of these is located just outside the footprint, but has been included due to its proximity.

**Table 16** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton rupestris</i>	707089	7151783
<i>Brachychiton rupestris</i>	707084	7151775

### Habitat values

Habitat features associated with the proposed development area include:

- Low level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Dense groundcover in the form of grassy tussocks
- Limited mature trees in paddock
- Minor watercourse

The proposed development area contains a low range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of low value within section L

A total of eight (8) fauna species were recorded during surveys within the realignment area in section L as outlined in Table 17. A variety of macropod scats were also recorded within the area.

**Table 17: Fauna species recorded during field investigations**

Common	Species
Brown Honeyeater	<i>Lichmera indistincta</i>
Red-backed Fairy-wren	<i>Malurus melanocephalus</i>
Weebill	<i>Smicromnis brevirostris</i>
Wedge-tail Eagle	<i>Aquila audax</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
Australian Raven	<i>Corvus coronoides</i>
Golden-headed Cisticola	<i>Cisticola exilis</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

### 3.13 Additional Land Access Section M

#### General

The proposed additional land access section M is located adjacent to the Fairview Gas Redirection Line in the south eastern portion of Lot 8 AB200 and is made up of four (4) parcels.

The area is currently mapped as non-remnant on the DERM certified RE Mapping. This was confirmed during field surveys (refer to Figure 3.13).

A stream order one (1) watercourse bisects one portion of this section.

Three stands of *Acacia harpophylla* (Brigalow) occur within thirty (30) metres of the proposed footprints, one stand occurs within one parcel. All three stands of Brigalow are less than 0.5ha in size.

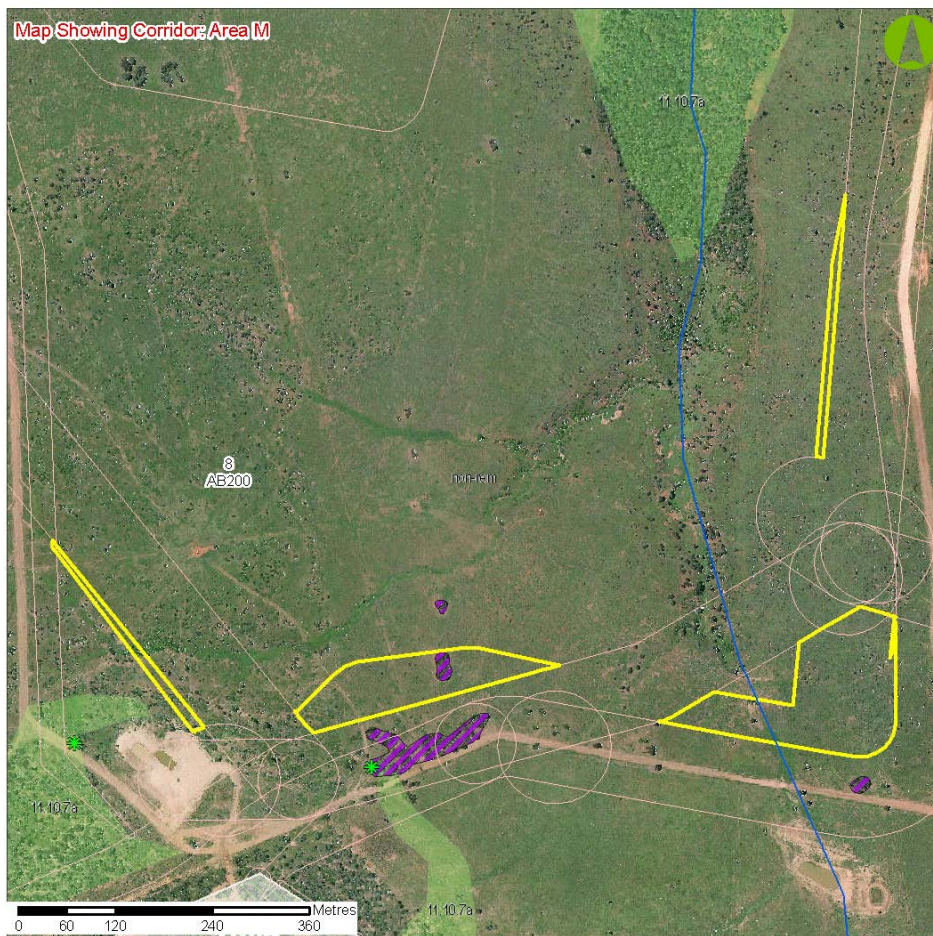


Figure 3.13 Aerial photograph and RE mapping of the Additional Land Access Area M

#### Floristics

Section M is predominantly cleared with scattered paddock trees remaining in small numbers. There is a high occurrence of regrowth *Acacia harpophylla* (Brigalow) throughout this area, and numerous *Acacia* species. The remaining stands of *Acacia harpophylla* (Brigalow) are reasonably mature with average heights being up to 10 metres. Scattered *Eucalyptus populnea* also are located throughout the proposed realignments.

The ground layer is dominated by *Pennisetum ciliare* (Buffel Grass), with scattered patches of native species including *Aristida contorta* (Curly Wire Grass), *Eragrostis brownie* (Brown's Love Grass) and *Sporobolus creber* (Western Rat's Tail Grass).

One (1) species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the EPBC Act, namely *Acacia harpophylla* (Brigalow), was recorded within one parcel, and a larger stand within thirty (30) metres of a proposed parcel. Brigalow is a threatened ecological community under the EPBC Act.

No species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.

### Habitat values

Habitat features associated with the proposed development area include:

- Low level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Dense groundcover in the form of grassy tussocks
- Limited mature trees in paddock
- Minor watercourse

The proposed development area contains a low range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of low value within section M

A total of seven (7) fauna species were recorded during surveys within the realignment area in section M as outlined in Table 18. A variety of macropod scats were also recorded within the area.

**Table 18: Fauna species recorded during field investigations**

Common	Species
Striated Pardalote	<i>Pardalotus striatus</i>
Pied Butcherbird	<i>Cracticus nigrogularis</i>
Noisy Miner	<i>Manorina melanocephala</i>
Bar-shouldered Dove	<i>Geopelia humeralis</i>
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>
Australian Bustard	<i>Ardeotis australis</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

### 3.14 Additional Land Access Section N

#### General

The proposed additional land access section N is located adjacent to the F209 in the eastern portion of Lot 8 AB200 and is made up of four (4) parcels.

The area is currently mapped as non-remnant on the DERM certified RE Mapping. This was confirmed during field surveys (refer to Figure 3.14).

A stream order one (1) watercourse bisects one portion of this section.

Scattered *Acacia harpophylla* (Brigalow) occur throughout the proposed footprints, however none have been mapped due to the scattered nature of the trees.

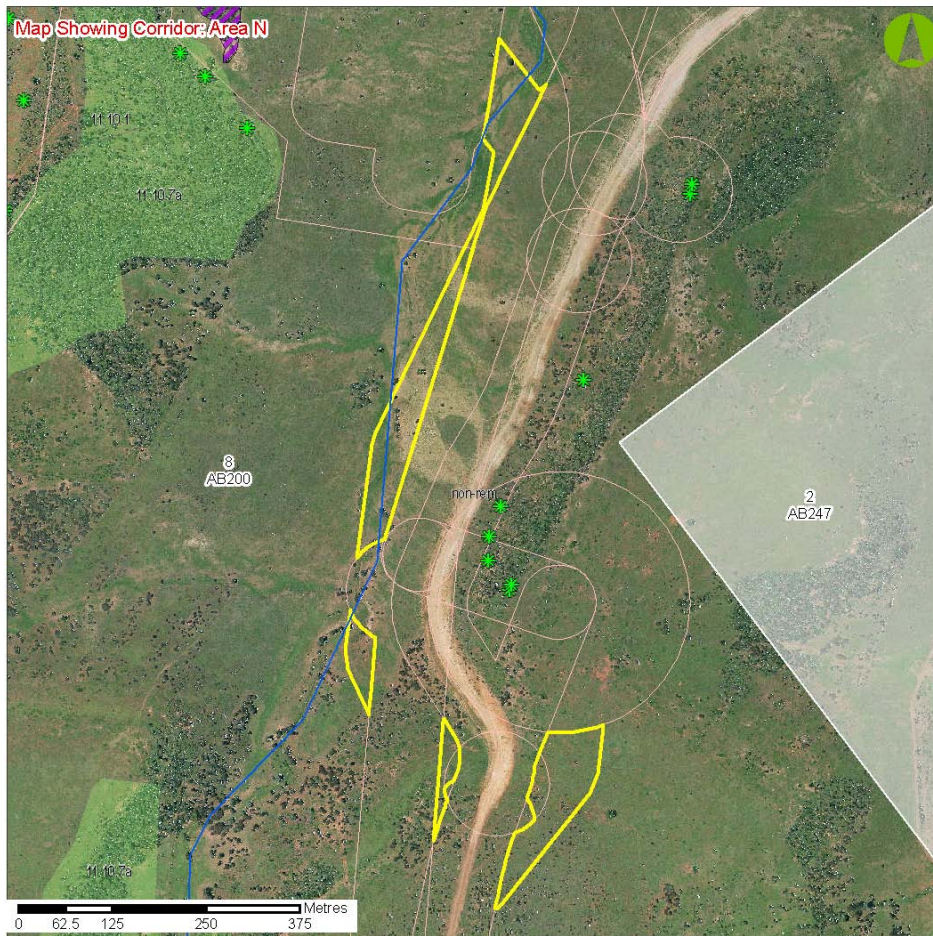


Figure 3.14 Aerial photograph and RE mapping of the Additional Land Access Area N

#### Floristics

Section N is predominantly cleared with scattered paddock trees remaining in small numbers. There is a high occurrence of regrowth *Acacia harpophylla* (Brigalow) throughout this area, and numerous other regrowth species including *Acacia excelsa* (Ironwood) and *Geijera parviflora* (Wilga).

The ground layer is dominated by *Pennisetum ciliare* (Buffel Grass), with scattered patches of native species including *Aristida contorta* (Curly Wire Grass), *Eragrostis brownii* (Brown's Love Grass) and *Sporobolus creber* (Western Rat's Tail Grass).

One (1) species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the EPBC Act, was recorded within section N. However the scattered nature of *Acacia harpophylla* (Brigalow) doesn't meet the criteria for a community.

No species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.

### Habitat values

Habitat features associated with the proposed development area include:

- Low level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Dense groundcover in the form of grassy tussocks
- Limited mature trees in paddock
- Minor watercourse with banks

The proposed development area contains a low range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of low value within section N.

A total of seven (7) fauna species were recorded during surveys within the realignment area in section N, Table 19 gives details. A variety of macropod scats were also recorded within the area.

**Table 19: Fauna species recorded during field investigations**

Common	Species
Striated Pardalote	<i>Pardalotus striatus</i>
Pied Butcherbird	<i>Cracticus nigrogularis</i>
Noisy Miner	<i>Manorina melanocephala</i>
Bar-shouldered Dove	<i>Geopelia humeralis</i>
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>
Australian Magpie	<i>Gymnorhina tibicen</i>

No threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.15 Additional Land Access Section O

### General

The proposed additional land access section O is located adjacent to F264 in the northern portion of Lot 8 AB200 and is made up of three (3) parcels.

The majority of the area is currently mapped on the DERM certified RE Mapping as 11.3.2/11.3.25 which is listed as 'of concern' and a section in the north western parcel falls within DERM certified RE 11.9.4a which is 'of concern – endangered' (refer to Figure 3.15).

During field investigations, it was found that the vegetation within Section O did not correlate with RE 11.3.2/11.3.25, rather it was dominated by *Eucalyptus melanophloia* (Silver-leaved Ironbark) and *Calltris glaucophylla* (White Cypress Pine).

The section mapped as RE 11.9.4a was found to be correct.

No mapped watercourses are located within the proposed footprint.

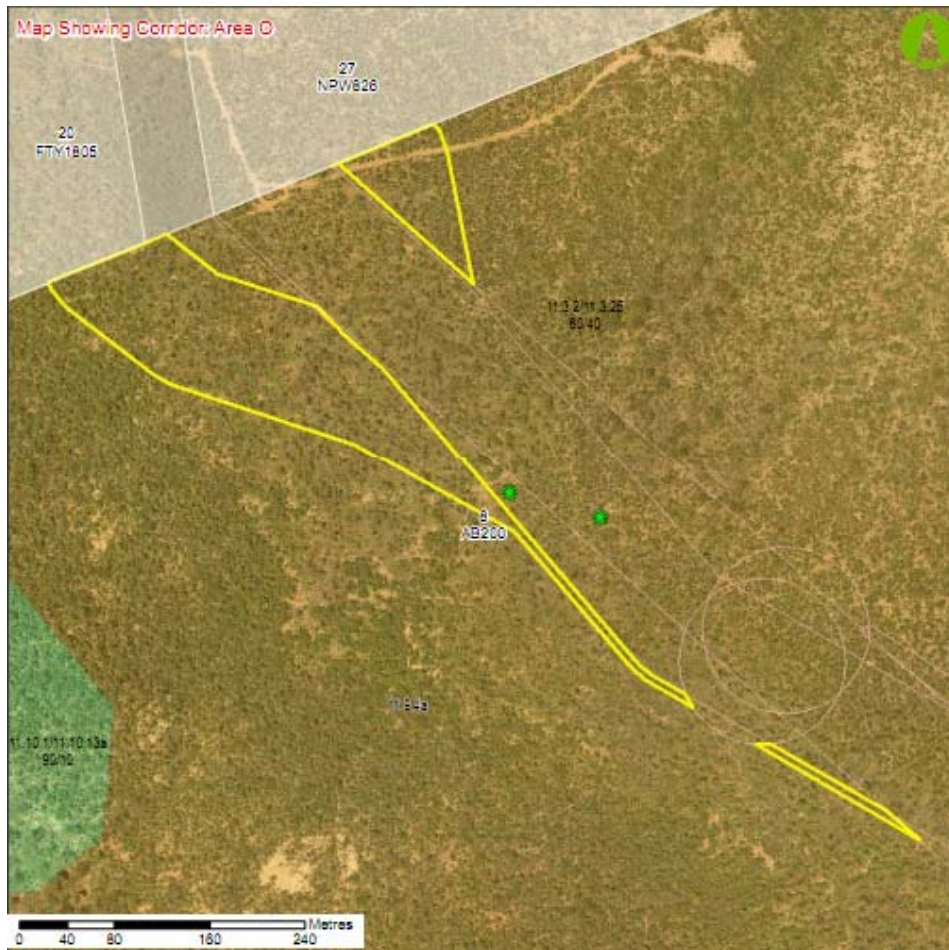


Figure 3.15 Aerial photograph and RE mapping of the Additional Land Access Area O

### Floristics


Section O is predominantly vegetated with approximately 20% cover of mature trees, namely *Eucalyptus melanophloia* (Silver-leaved Ironbark), Regrowth *Callitris glaucophylla* (White Cypress Pine) and several shrub species such as *Acacia leiocalyx* (Black Wattle), *Acacia decora* (Pretty Wattle) and *Dodonea viscosa* (Sticky Hopbush).

The ground layer is dominated by *Pennisetum ciliare* (Buffel Grass), with pockets of *Lomandra multiflora* (Lomandra), *Themeda australis* (Kangaroo Grass) and *Dianella caerulea* (Blue Flax-lily).

DERM certified RE mapping showed the proposed area as 11.3.2/11.3.25 'Eucalyptus populnea on Alluvial Plains', however during ground-truthing no *Eucalyptus populnea* (Poplar Box) was recorded within the proposed realignment areas.

The portion of Section O which is mapped as RE 11.9.4a is made up of similar species as above, however species such as *Geijera parviflora* (Wilga), and *Alectryon diversifolius* (Scrub Boonaree) which are typical vine thicket species were found within this section. Brachychoton species were also noted nearby the proposed realignment, however none were recorded within the boundary.

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or EPBC Act, were recorded within section O.



No species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.

### **Habitat values**

Habitat features associated with the proposed development area include:

- Moderate level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Dense groundcover in the form of grassy tussocks and shrubs
- Moderate level of mature trees
- Fissured tree bark
- Leaf litter
- Woody debris

The proposed development area contains a moderate to high range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of moderate value within section O.

No fauna species were recorded whilst surveys were undertaken and as such no threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified. Various macropod scats were observed within the site.

## **3.16 Additional Land Access Section P**

### **General**

The proposed additional land access section P is located adjacent to F264 in the northern portion of Lot 8 AB200 and is made up of One (1) parcel.

The area is currently mapped on the DERM certified RE Mapping as 11.9.4a which is listed as 'of concern – endangered' (refer to Figure 3.16).

During field investigations, it was found that the vegetation within Section P did correlate with RE 11.9.4a; although the dominant canopy cover was *Eucalyptus melanophloia* (Silver-leaved Ironbark) and *Calltris glaucophylla* (White Cypress Pine) several vine thicket associated species were present.

No mapped watercourses are located within the proposed footprint.



Figure 3.16 Aerial photograph and RE mapping of the Additional Land Access Area P

### Floristics

Section P is predominantly vegetated with approximately 20% cover of mature trees, namely *Eucalyptus melanophloia* (Silver-leaved Ironbark). Regrowth *Callitris glaucophylla* (White Cypress Pine) and several shrub species such as *Acacia leiocalyx* (Black Wattle), *Acacia decora* (Pretty Wattle) and *Dodonea viscosa* (Sticky Hopbush).

The ground layer is dominated by *Pennisetum ciliare* (Buffel Grass), with pockets of *Lomandra multiflora* (Lomandra), *Themeda australis* (Kangaroo Grass) and *Dianella caerulea* (Blue Flax-lily).

DERM certified RE mapping showed the proposed area as 11.9.4a Semi Evergreen Vine Thicket on fine-grained sedimentary rocks', and this was confirmed by the occurrence of vine thicket associated species including *Geijera parviflora* (Wilga), and *Alectryon diversifolius* (Scrub Boonaree).

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or EPBC Act, were recorded within section P.

No species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.





## Habitat values

Habitat features associated with the proposed development area include:

- Moderate level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Dense groundcover in the form of grassy tussocks and shrubs
- Moderate level of mature trees
- Fissured tree bark
- Leaf litter
- Woody debris

The proposed development area contains a moderate to high range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of moderate value within section P.

No fauna species were recorded whilst surveys were undertaken and as such no threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified. Various macropod scats were observed within the site.

## 3.17 Additional Land Access Section Q

### General

The proposed additional land access section Q is located adjacent to the F279 in the southern portion of Lot 8 AB200 and is made up of four (4) parcels.

The area is currently mapped as 11.10.1 and non-remnant on the DERM certified RE Mapping. The non-remnant vegetation was confirmed, however no *Corymbia citriodora* (Lemon-scented Gum) as per RE 11.10.1 was observed on site (refer to Figure 3.17).

No mapped watercourses are located within the proposed footprint.

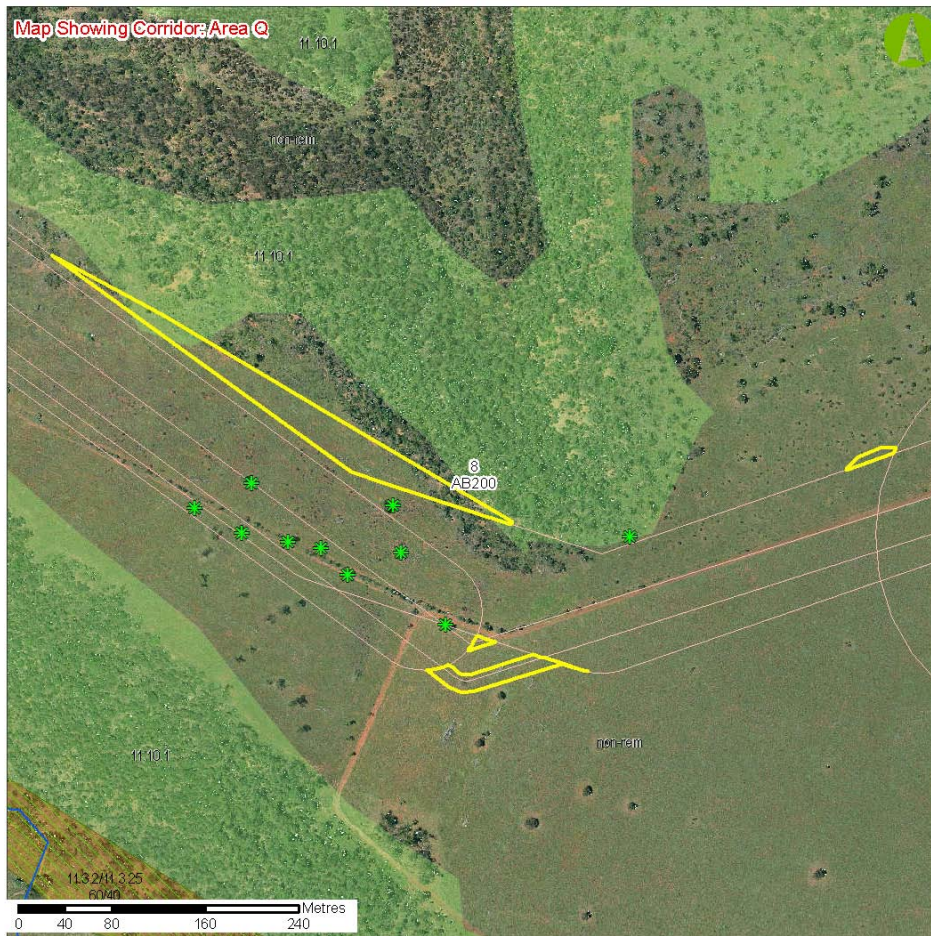


Figure 3.17 Aerial photograph and RE mapping of the Additional Land Access Area Q

### Floristics

Section Q is predominantly cleared with scattered paddock trees remaining in small numbers. There is a high occurrence of *Acacia* species and various small *Eucalypt* species. *Callitris glaucophylla* (White Cypress Pine) and *Eucalyptus melanophloia* (Silver-leaved Ironbark) are scattered throughout the western parcel where the vegetation is relatively dense.

The ground layer is dominated by *Pennisetum ciliare* (Buffel Grass), with scattered patches of native species including *Aristida contorta* (Curly Wire Grass), *Eragrostis brownii* (Brown's Love Grass) and *Sporobolus creber* (Western Rat's Tail Grass).

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or EPBC Act, were recorded within section Q.

No species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.



## Habitat values

Habitat features associated with the proposed development area include:

- Low level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Dense groundcover in the form of grassy tussocks
- Limited mature trees in paddock

The proposed development area contains a low range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of low value within section Q.

No fauna species were recorded whilst surveys were undertaken and as such no threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.18 Additional Land Access Section R

### General

The proposed additional land access section R is located north of Fairview 586 in the central portion of Lot 8 AB200 and is made up of two (2) parcels.

The area is currently mapped as non-remnant and RE 11.10.1. The non-remnant vegetation was confirmed, however no *Corymbia citriodora* (Lemon-scented Gum) as per RE 11.10.1 was observed on site (refer to Figure 3.18).

No watercourses are located within section R.

A stand of *Acacia harpophylla* (Brigalow) occurs within section R, containing an average height of 15 metres. The total area of this stand is less than 0.5ha.

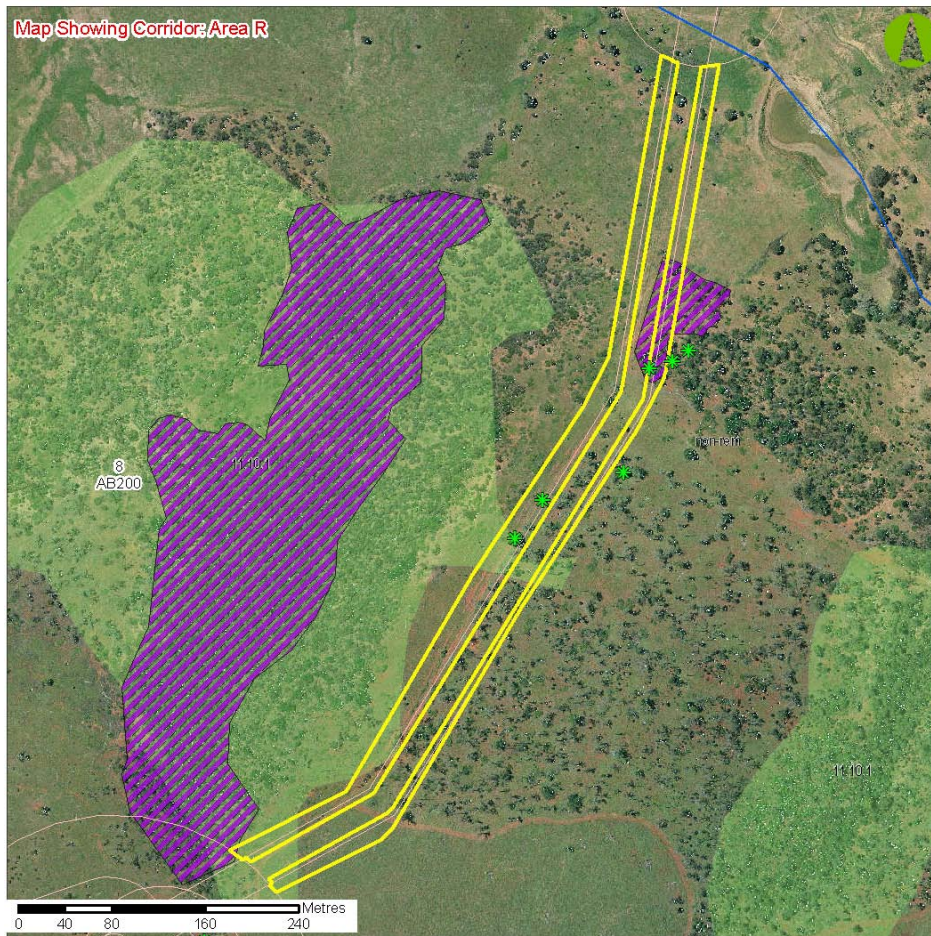


Figure 3.18 Aerial photograph and RE mapping of the Additional Land Access Area R

### Floristics

Section R is predominantly cleared with scattered paddock trees remaining in small numbers. There is a high occurrence of regrowth *Acacia harpophylla* (Brigalow) throughout this area, and numerous other regrowth species including *Acacia excelsa* (Ironwood) and *Geijera parviflora* (Wilga).

The ground layer is dominated by *Pennisetum ciliare* (Buffel Grass), with scattered patches of native species including *Aristida contorta* (Curly Wire Grass), *Eragrostis brownii* (Brown's Love Grass) and *Sporobolus creber* (Western Rat's Tail Grass).

One (1) species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the EPBC Act, was recorded within section R. This was a stand of *Acacia harpophylla* which is a threatened ecological community under the EPBC Act

Section R also occurs within close proximity (<100m) east of an area identified as an endangered SEVT community, although this area is not mapped on the DERM RE mapping.

One species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) was recorded during these investigations, the details of which are outlined in Table 20.

**Table 20** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton rupestris</i>	705042	7151409
<i>Brachychiton rupestris</i>	705065	7151442
<i>Brachychiton rupestris</i>	705157	7151555
<i>Brachychiton rupestris</i>	705176	7151561

**Habitat values**

Habitat features associated with the proposed development area include:

- Moderate level of woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Dense groundcover in the form of grassy tussocks
- Moderated mature trees in paddock
- Close proximity to high quality habitat

The proposed development area contains a low to moderate range of habitat features throughout the surveyed areas. Varied vegetation structure is present, as is a wide range of key habitat attributes suitable for a range of fauna species. The habitat value of the area is considered to be of low to moderate value within section R.

No fauna species were observed during surveys and as such no threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

**3.19 Additional Land Access Section S**

**General**

The proposed additional land access section S is located in the east of Lot 8 AB200 adjacent to the proposed compressor station development F-HCS-04. The area is mapped as non-remnant and this was confirmed during the September 2011 surveys (refer to Figure 3.19).

Additional land access Area S is situated on either side of an existing track within an actively grazed grassland. One mapped watercourse traverses the area, which is a Stream Order 2 watercourse, this small drainage line retains little to no riparian vegetation. The proposed development is located approximately 750 m from the nearest ESA, which is an area to the east of the development that is mapped as RE 11.3.2 / 11.3.25 'Of Concern' dominant and sub-dominant vegetation (Category C ESA).

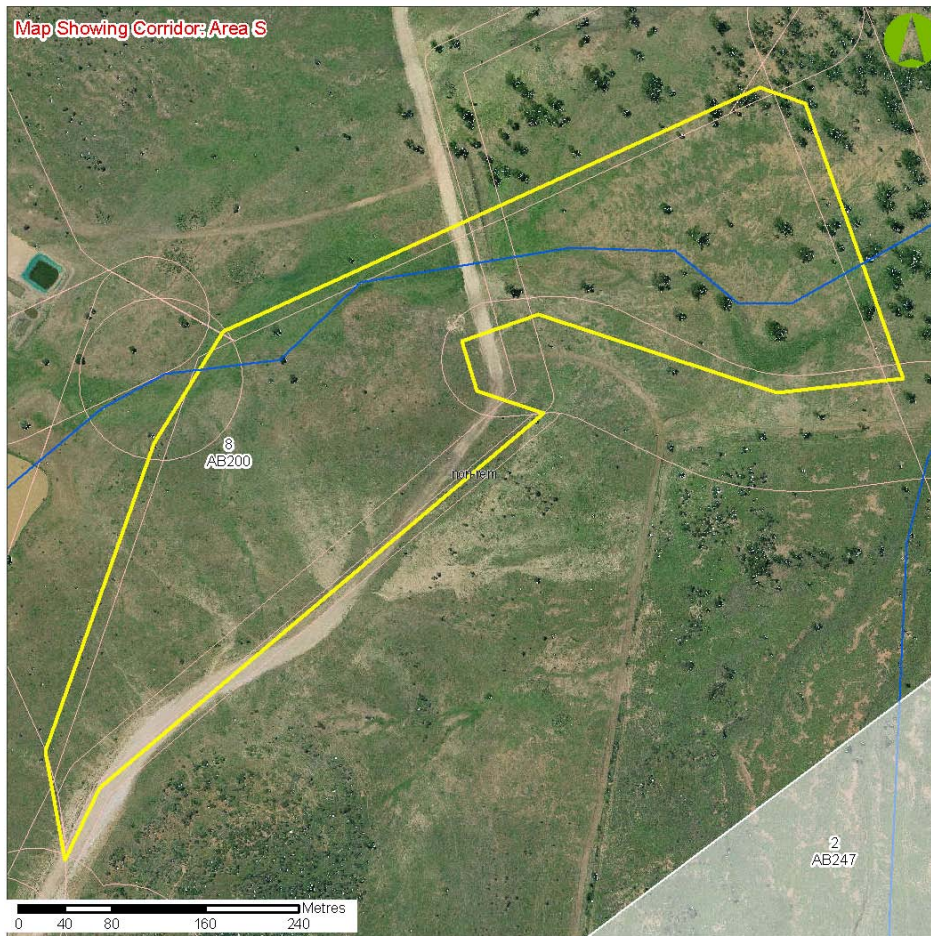


Figure 3.19 Aerial photograph and RE mapping of the Additional Land Access Area S

## Floristics

The proposed development area contains limited vegetation, with scattered *Eucalyptus populnea* (Poplar Box) the dominant canopy species. The area is a *Pennisetum ciliare* (Buffel Grass) dominated grassland with other dominant groundcover species including *Heteropogon contortus* (Black Spear Grass), *Verbena tenuisecta* (Mayne's Curse), *Cissus opaca* (Native Grape), *Senecio madagascariensis* (Fireweed) and *Chamaesyce drummondii* (Caustic Weed).

The area contained some scattered shrubby regrowth of *Acacia decora* (Pretty Wattle), *Acacia excelsa* (Iron Wood), *Acacia harpophylla* (Brigalow) and *Capparis loranthifolia* (Nipan). Also within the area there is a large patch of *Juncus polyanthemos* (Sharp Rush) in a wet area of the drainage line.

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or EPBC Act were recorded within or directly adjacent to the proposed development area. Furthermore, no species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.

A flora species list for the proposed development areas is provided in Appendix A.



## Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris
- No mature vegetation stands
- High level of disturbance
- Buffel dominated grassland

The proposed development area contains a limited range of habitat features. With little vegetation structure present and a low occurrence of other habitat, hollows, rocky areas and high quality watercourses, the habitat value of the additional land access are S is considered to be low.

No fauna was observed during the survey and as a result no threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.20 Additional Land Access Section T

### General

The Dawson Bend Fibre Optic additional land access area is a small area located adjacent to the proposed development T2 in the east of Lot 8 AB200. The area is actively grazed and is mapped as non-remnant, and this was confirmed during the ground-truthing surveys. The vegetation in the area consists of open grassland with scattered shrubby regrowth.

There are no mapped watercourses within the additional land access area, with the closest mapped stream approximately 50 m to the north, this is a DERM classified Stream Order 1. The closest ESA is an area approximately 150 m to the north of the development area, with the occurrence of mapped RE 11.3.2 / 11.3.25 'Of Concern' dominant and sub-dominant (Category C ESA) (refer to Figure 3.20).

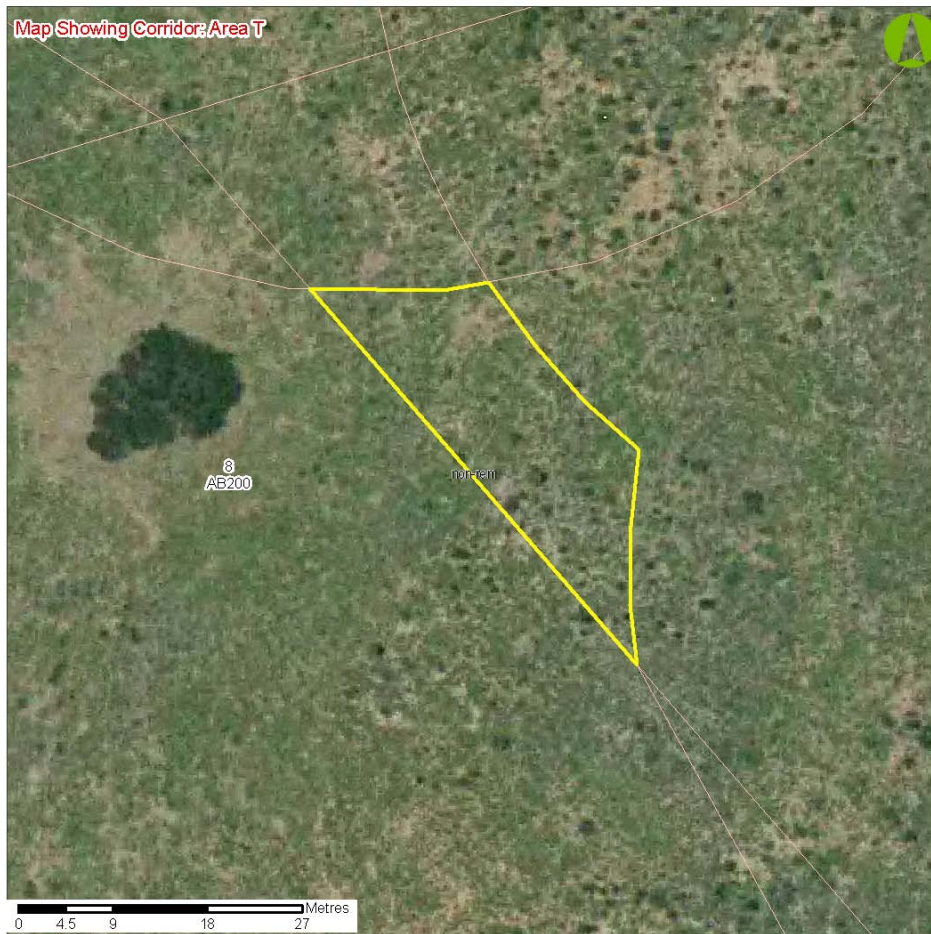


Figure 3.20 Aerial photograph and RE mapping of the Additional Land Access Area T

### Floristics

The vegetation within the Dawson Bend Fibre Optic additional land access area is dominated by *Pennisetum ciliare* (Buffel Grass) with the native species *Themeda triandra* (Kangaroo Gras) sub-dominating the area.

Scattered regrowth of *Eremophila mitchellii* (False Sandalwood), *Eucalyptus melanophloia* (Silver Leaved Ironbark) and *Eucalyptus populnea* (Poplar Box) occurs throughout the small area.

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or EPBC Act were recorded within or directly adjacent to the proposed development area. Furthermore, no species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations. *Eucalyptus populnea* (Poplar Box).

A flora species list for the proposed development areas is provided in Appendix A.





## Habitat values

Habitat features associated with the proposed development area include:

- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)
- No mature vegetation stands
- High level of disturbance
- Buffel dominated grassland

The proposed development area contains a limited range of habitat features. With little vegetation structure present and a low occurrence of other habitat, hollows, rocky areas and high quality watercourses, the habitat value of the area is considered to be low.

No fauna was observed during the survey and as a result no threatened fauna species under the provisions of the NC Act, or the EPBC Act were identified.

## 3.21 Additional Land Access Section U

### General

Additional land access area U is located adjacent to the proposed compressor station development F-HCS-04 in the east of Lot 8 AB200. The area is mapped as non-remnant, and this was confirmed during the ground-truthing surveys. The vegetation in the area consists of large woody regrowth with some open grassy areas.

There are no mapped watercourses within the additional land access area, the closest mapped watercourse is approximately 100 m to the east with a DERM classified Stream Order 6 in this area. This mapped watercourse is also classified as a referable wetland (DERM), however this area does not fall within the proposed realignment corridor. The closest ESA is an area to the east, approximately 100 m that is mapped as RE 11.3.2 / 11.3.25 'Of Concern' dominant and sub-dominant (Category C ESA) (refer to Figure 3.21).

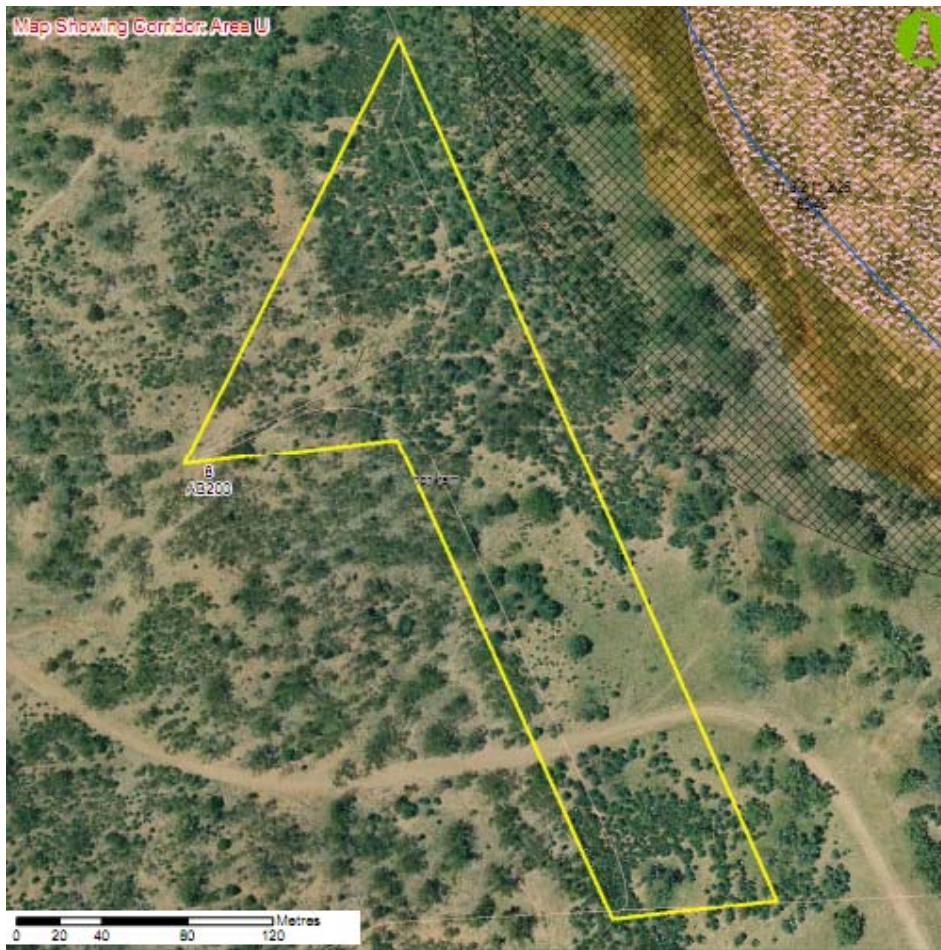


Figure 3.21 Aerial photograph and RE mapping of the Additional Land Access Area U

## Floristics

The vegetation within additional land access area U is dominated by *Callitris glaucophylla* (White Cypress Pine) re-growth with a scattered canopy of *Angophora floribunda* (Rough-barked Apple) and *Eucalyptus populnea* (Poplar Box).

The shrub layer in the area is lacking with a sparse occurrence of species such as *Geijera parviflora* (Wilga), *Allocasuarina leuhmannii* (Bull Oak) and *Alectryon diversifolius* (Scrub Boonaree). The ground layer was dominated by *Pennisetum ciliare* (Buffel Grass), with other grasses such as *Sporobolus creber* (Western Rats Tail Grass) and *Heteropogon contortus* (Black Spear Grass). Dominant groundcover herbaceous plants across the area include *Verbena tenuisecta* (Mayne's Curse), *Wahlenbergia communis* (Large Bluebells) and *Senecio madagascariensis* (Fireweed).

No species of conservation significance (ie endangered, vulnerable or near threatened [EVNT] species) protected under the provisions of the NC Act and/or EPBC Act were recorded within or directly adjacent to the proposed development area. Furthermore, no species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during these investigations.

A flora species list for the proposed development areas is provided in Appendix A.

## Habitat values

Habitat features associated with the proposed development area include:

- Canopy cover suitable for shelter, foraging and perching
- Fissured tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Limited leaf litter layer
- Moderate level of weed species
- Actively grazed

The overall habitat value of the area is considered to be low. Although the area provides a range of suitable foraging habitat and contains some vegetation structure, the area has been heavily disturbed in the past and is a regenerating area.

There were some signs of fauna usage with signs of snake or reptile entry into a hollow-bearing log and Squatter Pigeons (*Geophaps scripta scripta*) were recorded during previous ground-truthing surveys in the area. Squatter Pigeons are a listed species under the provisions of the EPBC Act.

One (1) incidental fauna species was recorded within the proposed development area, as indicated in 21 below. The species is listed as Least Concern under the provisions of the NC Act, and is not listed under the provisions of the EPBC Act.

Table 21 Incidental fauna species recorded during field investigations

Common	Species
Double-barred Finch	<i>Taeniopygia bichenovii</i>

## 3.22 Additional Land Access Section V

### General

This realignment area is located adjacent to the proposed T2 and F164 Corridors on Lot 8 on AB200, Some areas of this site had been recently burnt at the time of field investigations.

The area is currently mapped as non-remnant vegetation on the DERM certified RE Mapping, and this was confirmed during field investigations.

A 'Category C' ESA is mapped across the area, however this is associated with an 'of concern' RE located outside of the proposed realignment area (approximately 450 m to the east) (refer to Figure 3.22).

One (1) mapped watercourse bisects this realignment area ('stream order 1'), although it is highly modified where the realignment area crosses existing development (ie road crossing, pipeline crossing and limited riparian vegetation).

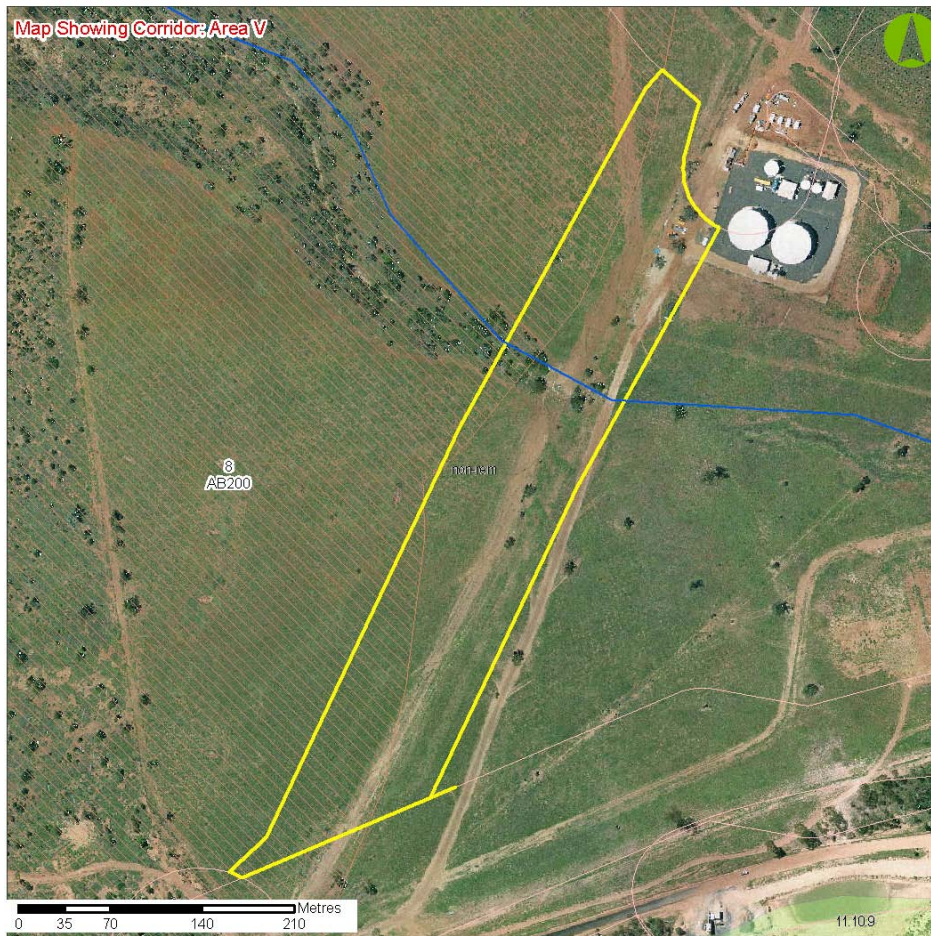


Figure 3.22 Aerial photograph and RE mapping of the Additional Land Access Area V

### Floristics

Prior to field investigations, the ground and shrub layer within the site had been recently burnt (ie within the past 3-5 days) as a result of back-burning within the broader area (for fuel load reduction). As such, limited species were recorded within these strata and the overall ground cover was very sparse (less than 10% cover of the total area).

Within the canopy layer *Eucalyptus melanophloia* (Silver-leaved Ironbark) and *Eucalyptus populnea* (Poplar Box) dominated, with *Eremophila mitchellii* (False Sandalwood) and *Brachychiton rupestris* (Narrow-leaved Bottle Tree) recorded within the sub-canopy layer within the riparian vegetation associated with the watercourse.

One (1) Type A restricted plant was recorded within the realignment area during field investigations. The location of this tree is provided in Table 22 below.

**Table 22** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton rupestris</i>	694815	7150858

No species of conservation significance (ie EVNT species) protected under the provisions of the NC Act and/or the EPBC Act were recorded within or directly adjacent to the proposed realignment area.

### Habitat values

Five (5) incidental fauna species were recorded within the realignment area during field investigations, as listed in Table 23 below.

**Table 23** Incidental fauna species recorded within the proposed realignment area

Common	Species
Nankeen Kestrel	<i>Falco cenchroides</i>
Australian Bustard	<i>Ardeotis australis</i>
Straw-necked Ibis	<i>Threskiornis spinicollis</i>
Apostlebird	<i>Struthidea cinerea</i>
Australian Magpie	<i>Cracticus tibicen</i>

No conservation significant fauna species (ie endangered, vulnerable or near threatened species listed under the provisions of the EPBC Act and/or the NC Act) were recorded during field investigations.

The proposed realignment has been extensively disturbed as a result of previous vegetation clearing and development within the area (ie existing road and pipeline). As a result, the habitat features present within the area are limited to dense groundcover vegetation (ie grassy tussocks), limited canopy cover suitable for shelter, foraging and perching. The riparian vegetation associated with the 'stream order 1' watercourse within the area has also been previously cleared/disturbed, and only a narrow corridor is retained. As a result, the habitat value of the proposed development area is considered low overall.

Species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances (ie House mouse [*Mus musculus*], common macropods). Common birds of prey (eg Nankeen Kestrel [*Falco cenchroides*], Black Kite [*Milvus migrans*]) and grassland species are also expected to utilise this area and the surrounding areas for foraging purposes. The watercourse is likely to be utilised as a source of water for fauna within the local area.

### 3.23 Additional Land Access Section W

#### General

The proposed realignment area for Section W is located adjacent to the proposed compressor station F- HCS-04 development area, and is south of the original F284 footprint. The development area is a 30 m wide corridor, 15 m either side of the center line. The development area is situated within a highly modified environment (ie historically cleared of vegetation for stock grazing); however some stands of mature native vegetation remain as small patches or as isolated trees.

No Regional Ecosystems (REs) as defined by the Queensland *Vegetation Management Act 1999* (VM Act) or Threatened Ecological Communities as listed under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act* (EPBC Act) are mapped within the proposed development area. A 'Category C' ESA is mapped within the Corridor (refer to Figure 3.23).

No streams are mapped within this corridor.

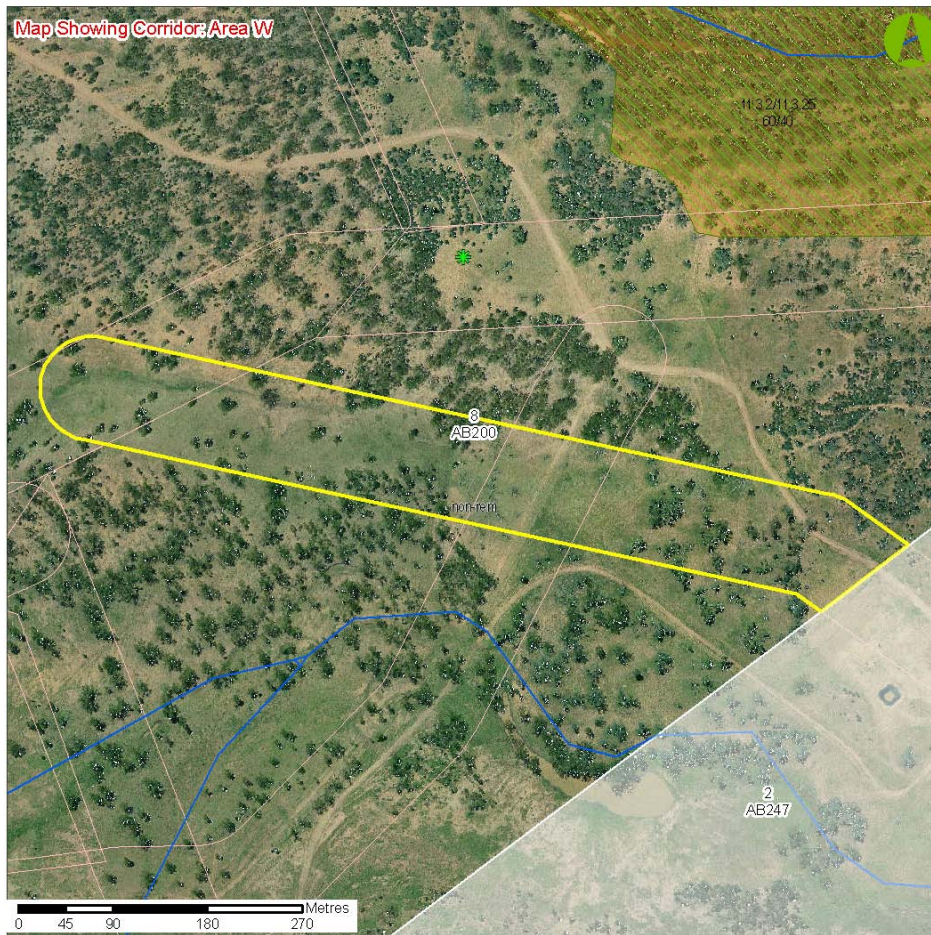


Figure 3.23 Aerial photograph and RE mapping of the Additional Land Access Area W

## Floristics

The vegetation at the site was dominated by *Pennisetum ciliare* (Buffel grass) in the cleared areas which appear to have been more heavily grazed and have less woody regrowth. The areas containing mature vegetation were co-dominated by *Eucalyptus populnea* (Poplar Box) and *Callitris glaucophylla* (White Cypress Pine) and contained less *P. ciliare* than the cleared/grazed areas.

The majority of the regrowth vegetation consisted *E. populnea*, *Eremophila mitchellii* (False Sandalwood), and *Acacia* species (*Acacia decora* [Pretty Wattle], *Acacia excelsa* [Ironwood]). The ground cover was dominated by *P.ciliare* in most parts and a high prevalence of other weed species was recorded.

No species of conservation significance (ie EVNT species) protected under the provisions of the NC Act and/or EPBC Act were recorded within or directly adjacent to the proposed development area. Furthermore, no species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during field investigations.

## Habitat values

Fourteen (14) incidental fauna species within the realignment section as listed in Table 24 below.

**Table 24** Incidental fauna species recorded within the proposed development area

Common	Species
Apostlebird	<i>Struthidea cinerea</i>
Australian Magpie	<i>Cracticus tibicen</i>
Crested Pigeons	<i>Ocyphaps lophotes</i>
Dollarbird	<i>Eurystomus orientalis</i>
Grey-crowned Babbler	<i>Pomatostomus temporalis</i>
Magpie-lark	<i>Grallina cyanoleuca</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pale-headed Rosella	<i>Platycercus adscitus</i>
Pied Butcherbird	<i>Cracticus nigrogularis</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Torresian Crow	<i>Corvus orru</i>
Wedge-tailed Eagle	<i>Aquila audax</i>
Weebill	<i>Smicromnis brevirostris</i>
Eastern Grey Kangaroo	<i>Macropus giganteus</i>

No conservation significant fauna species (ie EVNT species listed under the provisions of the EPBC Act and/or the NC Act) were recorded during field investigations.

The proposed development area contains some mature vegetation, although large areas have been extensively disturbed as a result of previous vegetation clearing for agricultural purposes. Habitat features present within realignment area include dense groundcover vegetation (ie grassy tussocks), woody debris (ie fallen/felled timber), canopy cover suitable for shelter, foraging and perching. As a result, the habitat value of the proposed development area is considered low to moderate overall.

Accordingly, the species utilising resources in the proposed realignment area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances (ie

House mouse [*Mus musculus*], common macropods). Common birds of prey (eg Nankeen Kestrel [*Falco cenchroides*], Black Kite [*Milvus migrans*]) and grassland species are also expected to utilise this area and the surrounding areas for foraging purposes.

### 3.24 Additional Land Access Section X

#### General

This additional land access section X is located within the proposed FV-04 Contractor Laydown Yard on Lot 8 on AB200, and is located adjacent to the existing Fairview 240 Access.

The area is currently mapped as non-remnant vegetation on the DERM certified RE Mapping, and this was confirmed during field investigations. The site has been previously cleared, and the vegetation within this area is low, woody regrowth with a limited number of canopy trees present.

No mapped ESAs occur within the area, with the nearest ESA (Category C 'of concern remnant') located approximately 65 m to the north of the site (refer to Figure 3.24).

There are no mapped watercourses located within the area, with the nearest located approximately 130 m to the north.

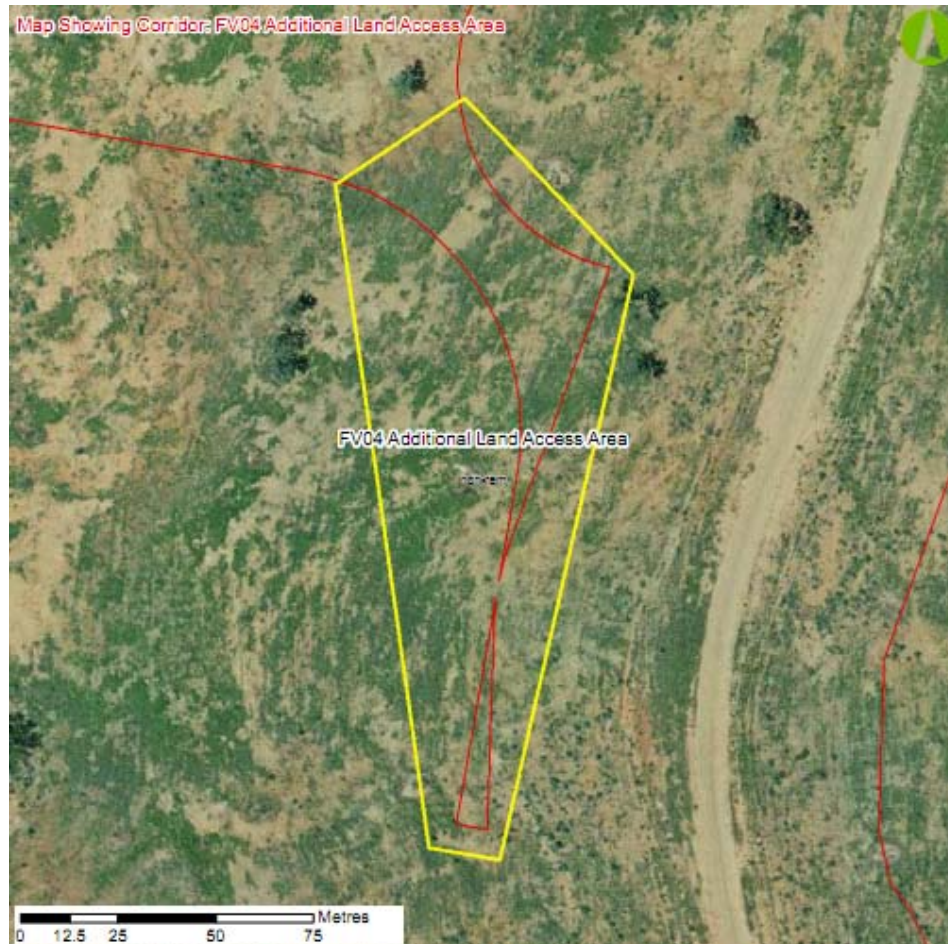


Figure 3.24 Aerial photograph and RE mapping of the Additional Land Access Area X



## Floristics

This area has been previously cleared for agricultural purposes (eg stock grazing), and only scattered canopy trees remain. *Eucalyptus melanophloia* (Silver-leaved Ironbark) was the only species recorded within the canopy layer (height range 20-22 m, less than 5% cover of the total area assessed).

The shrub layer within the area was sparse (approximately 10-15% cover of the total area), and was dominated by *E. melanophloia*, with other species recorded including *Acacia decora* (Pretty Wattle), *Dodonaea viscosa* (Sticky Hopbush) and *Eremophila mitchellii* (False Sandalwood).

The ground cover formed a dense cover of the area (approximately 90% cover of the total area), with *Pennisetum ciliare* (Buffel Grass) recorded as the dominant species. A range of native and exotic grasses and forbs are present within the ground layer stratus, including *Eragrostis* species (*E. brownii* [Brown's Lovegrass], *E. sororia* [Woodland Lovegrass]), *Verbena* species (*V. tenuisecta* [Mayne's Curse], *V. officinalis* [Common Verbena]), *Sclerolaena birchii* (Galvanised Burr), and *Panicum decompositum* (Native Millet).

No species of conservation significance (ie EVNT species) protected under the provisions of the NC Act and/or EPBC Act were recorded within or directly adjacent to the proposed development area. Furthermore, no species of harvestable importance (ie Type A restricted plants protected under the provisions of the NC Act) were recorded during field investigations.

## Habitat values

One (1) incidental fauna species was recorded within the area during field investigations, as listed in Table 25 below.

Table 25 Incidental fauna species recorded within the proposed development area

Common	Species
Black-shouldered Kite	<i>Elanus axillaris</i>

No conservation significant fauna species (ie endangered, vulnerable or near threatened species listed under the provisions of the EPBC Act and/or the NC Act) were recorded during field investigations.

The proposed development area contains limited woody vegetation and has been extensively disturbed as a result of previous vegetation clearing. Habitat features present within the area area limited to dense groundcover vegetation (ie grassy tussocks), and limited canopy cover suitable for shelter, foraging and perching. As a result, the habitat value of the proposed development area is considered low overall.

Accordingly, the species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances (ie House mouse [*Mus musculus*], common macropods). Common birds of prey (eg Nankeen Kestrel [*Falco cenchroides*], Black Kite [*Milvus migrans*]) and grassland species are also expected to utilise this area and the surrounding areas for foraging purposes.



## 4 Conclusion

The post site-scout realignments are located within both previously disturbed areas and within remnant vegetation communities. The majority of DERM certified RE mapping was confirmed during surveys, however a small number of sections differed from RE mapping.

Multiple Type A restricted plant species were observed within the proposed development areas.

Several species protected under the provisions of the EPBC Act were observed within the proposed development areas during these investigations namely *Acacia harpophylla* (Brigalow) and *Geophaps scripta* (Squatter Pigeons).

Several realignment corridors contained mapped watercourses, the location of which can be seen in the accompanying figures.

A number of corridors (Section E, H, K and U) contained areas of DERM classified referable wetlands within the realignment footprint. These areas can be seen in the relevant figures.



# 5 References

Eddie, C (2007) Field Guide to Trees and Shrubs of Eastern Queensland Oil and Gas Fields, First Edition, Santos Ltd, Adelaide.

Regional Ecosystem Mapping, Version 6.0, Queensland Government Department of Environment and Resource Management (DERM).

# Appendix A Flora Species List



## Flora species list

Scientific Name	Common Name	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
<i>Abutilon leucopetalum</i>	Abutilon						X																		
<i>Acacia deanii</i>	Dean's Wattle																	X							
<i>Acacia decora</i>	Pretty Wattle	X	X	X	X	X		X	X	X		X	X	X	X	X		X	X					X	X
<i>Acacia everistii</i>	Wattle							X	X	X															
<i>Acacia excelsa</i>	Iron wood	X					X				X	X	X	X	X	X								X	X
<i>Acacia harpophylla</i>	Brigalow				X	X	X	X	X	X			X	X	X	X		X	X					X	
<i>Acacia leiocalyx</i>	Black Wattle	X		X			X	X	X	X	X	X	X		X			X							
<i>Acacia leiocalyx subsp. leiocalyx</i>	Grey Wattle					X																			
<i>Acacia longispicata</i>	Slender Flowered Wattle		X			X		X	X	X	X	X						X	X						
<i>Acacia salicina</i>	Sally Wattle		X				X						X		X										
<i>Acacia shirleyi</i>	Lancewood																							X	
<i>Achyranthes aspera</i>	Two Spine Burr		X			X																			
<i>Aeschynomene paniculata</i>	Pannicle Joint Vetch																							X	
<i>Ajuga australis</i>	Austral Bugle																								X
<i>Alectryon diversifolius</i>	Scrub Boonaree						X						X	X	X	X									
<i>Alectryon oleifolius</i>	Boonaree					X																			
<i>Alphitonia excelsa</i>	Red Ash	X	X			X					X		X	X	X	X		X							
<i>Alstonia constricta</i>	Bitter Bark												X		X				X						
<i>Alternanthera dentata</i>	Joy Weed	X										X													
<i>Alysicarpus rugosa</i>	Chain pea																							X	

<i>Anagallis arvensis</i>	Scarlet Pimpernel																					X	
<i>Angophora floribunda</i>	Rough-barked Apple					X		X	X	X													
<i>Apophyllum anomalum</i>	Warrior bush												X	X	X	X							X
<i>Argemone ochroleuca</i>	Mexican Poppy					X																	
<i>Aristida caput-medusae</i>	Curly Head Wire Grass	X	X	X		X		X	X	X	X												
<i>Aristida contorta</i>	Curly Wire-grass												X										
<i>Aristida holathera</i>	Tall Wire Grass										X												
<i>Aristida jerichoensis</i>	Jericho wire grass						X																
<i>Aristida queenslandica var. dissimilis</i>	Wire Grass																						X
<i>Atalaya hemiglauca</i>	Whitewood	X	X					X	X	X		X	X		X								
<i>Austrostipa verticillata</i>	Slender Bamboo Grass												X		X								
<i>Babingtonia densifolia</i>	Babingtonia	X				X																	
<i>Bidens pilosa</i>	Cobblers Pegs					X	X						X	X	X	X							
<i>Bothriochloa bladhii</i>	Forest Blue Grass		X		X			X	X	X													X
<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>	Forest Blue Grass					X																	X
<i>Brachychiton populneus</i>	Kurrajong	X		X	X			X	X	X		X											
<i>Brachychiton rupestris</i>	Narrow Leaved Bottle Tree						X	X	X	X							X	X				X	X
<i>Brachyscome dentata</i>	Lobe-seed Daisy							X	X	X													X
<i>Bracteantha bracteata</i>	Everlasting Daisy		X	X		X											X						
<i>Breynia oblongifolia</i>	Breynia																	X					
<i>Bulbine bulbosa</i>	Buttercup																						X
<i>Bulbostylis sp</i>	Bulbostylis																						X
<i>Bursaria incana</i>	-							X	X	X							X	X					
<i>Bursaria spinosa</i>	Prickly Pine	X	X					X	X	X		X	X		X								

<i>Callitris glaucophylla</i>	White Cypress Pine	X	X		X	X	X	X	X	X	X	X	X	X		X	X						
<i>Calocephalus platycephalus</i>	Billy Buttons			X		X																	
<i>Calotis cuneifolia</i>	Purple Burr Daisy										X		X	X	X	X						X	X
<i>Calotis lappulacea</i>	Yellow Burr Daisy	X	X	X		X	X							X	X		X						
<i>Capillipedium spicigerum</i>	Scented-top grass																						X
<i>Capparis lasiantha</i>	Native Orange												X		X	X		X					
<i>Capparis loranthifolia</i>	Nipan, Wait a while			X										X	X	X	X						
<i>Capparis mitchellii</i>	Bumble fruit	X				X								X	X								
<i>Capparis spinosa</i>	Capparis midsize			X		X																	
<i>Carissa ovata</i>	Currant Bush					X	X						X	X	X	X		X					
<i>Cassinia laevis</i>	Cough Bush	X					X	X	X	X													
<i>Casuarina cristata</i>	Belah					X								X	X								
<i>Casuarina cunninghamiana</i>	River She-oak					X																	
<i>Cenchrus setiger</i>	Birdwood Grass																						X
<i>Centaurea maculosa</i>	Knap Weed			X																			
<i>Centipeda minima</i>	Spreading sneeze weed																						X
<i>Cheilanthes sieberi</i>	Mulga Fern		X			X							X										X
<i>Chenopodium auricomum</i>	Queensland Bluebush																						X
<i>Chenopodium desertorum</i>	Desert Goosefoot																						X
<i>Chloris gayana</i>	Rhodes Grass						X																
<i>Chloris inflata</i>	Purple Top Rhodes																						X
<i>Chloris pectinata</i>	Comb Chloris		X			X																	
<i>Chloris ventricosa</i>	Tall Chloris											X	X										
<i>Chrysocephalum apiculatum</i>	Yellow Buttons		X	X																			







<i>Dianella caerulea</i>	Blue Flax-lily													X	X	X	X																					
<i>Dianella longifolia</i>	Dianella												X																									
<i>Dianella revoluta</i>	Blue Flax-lily					X																																
<i>Dichanthium sericeum</i>	Queensland Blue Grass												X																									
<i>Dichondra repens</i>	Kidney Weed		X						X	X	X				X		X																			X		
<i>Digitaria ammophila</i>	Digitaria																																					
<i>Digitaria brownii</i>	Tall Digitaria						X					X	X																									
<i>Diospyros humilis</i>	Scrub Ebony		X				X	X	X	X				X		X												X										
<i>Dodonaea filifolia</i>	Hopbush							X	X	X																												
<i>Dodonaea lanceolata</i>	Hopbush																										X											
<i>Dodonaea viscosa</i>	Sticky Hopbush	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								X											
<i>Echinochloa colona</i>	Awnless Barnyard Grass																																				X	
<i>Einadia hastans</i>	Saltbush																																			X	X	
<i>Enneapogon avenaceus</i>	Bottle Washer					X																															X	
<i>Enteropogon ramosus</i>	Twirly Windmill Grass																																				X	
<i>Entolasia stricta</i>	Wirry Panic					X						X																							X	X	X	
<i>Eragrostis brownii</i>	Browns Lovegrass					X						X	X																									
<i>Eragrostis cilianensis</i>	Stinkgrass																																					
<i>Eragrostis fallax</i>	Tall Lovegrass																																				X	
<i>Eragrostis sororia</i>	Blue eragrostis											X	X																									
<i>Eremochloa bimaculata</i>	Poverty Grass																																			X	X	X
<i>Eremophila debilis</i>	Winter Apple					X																																
<i>Eremophila deserti</i>	Turkey Bush																											X										
<i>Eremophila longifolia</i>	Creek Wilga					X																														X	X	



<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush							X									X	X								
<i>Goodenia glabra</i>	Smooth Goodenia		X					X	X	X		X														
<i>Goodenia grandiflora</i>	Goodenia																									
<i>Goodenia rotundifolia</i>	Goodenia						X																			
<i>Grevillea striata</i>	Beefwood	X	X		X		X	X	X	X	X							X								
<i>Grewia latifolia</i>	Dysentery Plant						X																		X	
<i>Hakea lorea</i>	Bootlace Oak						X																			
<i>Heteropogon contortus</i>	Black Spear Grass	X	X			X	X					X														
<i>Hibiscus sturtii</i>	Hill Hibiscus																								X	
<i>Hovea planifolia</i>	Hovea					X												X								
<i>Hydrocotyle laxiflora</i>	Pennywort		X			X	X	X	X	X																
<i>Hyptis capitata</i>	Knob Weed																								X	
<i>Hyptis spicigera</i>	Bush mint																									X
<i>Imperata cylindrica</i>	Blady Grass					X																				
<i>Indigofera colutea</i>	Rusty indigo													X	X	X	X									
<i>Ipomoea longifolia</i>	Cow Vine																								X	
<i>Jasminum didymum subsp. racemosum</i>	Native Jasmine						X								X		X								X	
<i>Juncus usitatus</i>	Juncus					X																				
<i>Keraudrenia collina</i>	Keraudrenia																	X							X	X
<i>Ichnagrostis filiformis</i>	Common Blown Grass													X	X	X	X									
<i>Laxmannia gracilis</i>	Slender Wire Lilly																								X	X
<i>Lepidium africanus</i>	Pepper Cress	X	X				X																			
<i>Lepidium sagittulatum</i>	Pepper Cress			X		X																				
<i>Leptochloa digitata</i>	Cane Grass					X																				

<i>Lomandra filiformis</i>	Wattle Mat-rush												X	X	X	X												
<i>Lomandra hystrix</i>	Creek Mat Rush					X							X		X													
<i>Lomandra longifolia</i>	Lomandra					X	X	X	X	X		X	X	X	X											X		
<i>Lomandra multiflora</i>	Lomandra		X			X	X	X	X			X	X	X	X													
<i>Lotus australis</i>	Lotus, Birdsfoot Trefoil	X																										
<i>Maireana microphylla</i>	Small-leaf Bluebush		X	X								X																
<i>Maireana villosa</i>	Silky Bluebush																											
<i>Marsilea drummondii</i>	Nardoo					X																						
<i>Maytenus disperma</i>	-																								X	X		
<i>Medicago polymorpha</i>	Burr Medic																									X		
<i>Megathurus maximus var. trichoglume</i>	Green Panic																										X	
<i>Melaleuca thymifolia</i>	-																									X	X	
<i>Melaleuca viminalis</i>	Weeping bottlebrush					X																					X	
<i>Melia azedarach</i>	White Cedar																	X									X	
<i>Melinis repens</i>	Red Natal			X		X																						
<i>Monachather paradoxa</i>	Mulga oats																									X		
<i>Ocimum tenuifolium</i>	Native thyme		X																							X	X	X
<i>Onopordum acanthium</i>	Scotch Thistle							X	X	X			X	X	X	X												
<i>Opuntia tomentosa</i>	Velvety Tree Pear	X			X			X	X	X	X	X	X	X	X			X										
<i>Owenia acidula</i>	Emu Apple					X	X	X	X																			
<i>Oxalis stricta</i>	Yellow Wood Sorrel												X		X													
<i>Pandorea pandorana</i>	Wonga Vine							X	X	X			X		X													
<i>Panicum effusum</i>	Inquisitive Grass							X	X	X	X	X																
<i>Panicum similie</i>	Two-coloured Panic												X	X	X	X												





<i>Stylidium debile</i>	Frail Trigger Plant																X										X	
<i>Stylidium sp.</i>	Trigger Plant																								X	X	X	
<i>Tagetes minuta</i>	Stinking Rodger																									X		
<i>Themeda avenacea</i>	Wild Oats Grass					X	X					X	X	X	X	X		X										
<i>Themeda triandra</i>	Kangaroo Grass		X	X		X	X	X	X	X		X	X	X	X	X		X										
<i>Tribulus terrestris</i>	Goat head Burr																										X	
<i>Trichodesma zeylanicum</i>	Camel Bush																										X	
<i>Tridax procumbens</i>	Tridax Daisy																										X	
<i>Triodia mitchellii</i>	Buck Spinifex																									X	X	
<i>Triodia pungens</i>	Spinifex																										X	
<i>Triodia shinzii</i>	Feathertop Spinifex																										X	
<i>Verbena bonariensis</i>	Bunchy Verbena					X	X					X						X										
<i>Verbena officinalis</i>	Common Verbena	X				X		X	X	X		X	X	X	X	X		X										
<i>Verbena tenuisecta</i>	Mayne's Curse	X	X	X	X	X	X	X	X	X		X	X	X	X	X												
<i>Vigna lanceolata</i>	Vigna												X		X													
<i>Wahlenbergia communis</i>	Large Bluebells	X				X		X	X	X		X							X									
<i>Wahlenbergia gracilis</i>	Sprawling Bluebell	X	X	X		X						X	X		X				X									
<i>Wahlenbergia sp</i>	Bluebells	X												X		X												
<i>Xanthium occidentale</i>	Noogoora Burr												X		X													



**Aurecon Australia Pty Ltd**

ABN 54 005 139 873

Level 14, 32 Turbot Street  
Brisbane QLD 4000

Locked Bag 331  
Brisbane QLD 4001  
Australia

**T** +61 7 3173 8000

**F** +61 7 3173 8001

**E** [brisbane@aurecongroup.com](mailto:brisbane@aurecongroup.com)

**W** [aurecongroup.com](http://aurecongroup.com)

Aurecon offices are located in:

Angola, Australia, Bahrain, Botswana,  
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