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## **Document control**

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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 Roma gas fields.

The Roma gas fields are located near the township of Roma and are characterised by undulating terrain with small elevated areas including the Thomby and Grafton Range. The dominant vegetation types within the Roma gas fields include Eucalypt and/or Brigalow woodlands, Blue grass or Mitchell grass downs, and smaller areas of White Cypress Pine and Mulga (Eddie 2007). The Roma gas fields are located within the Balonne River catchment.

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

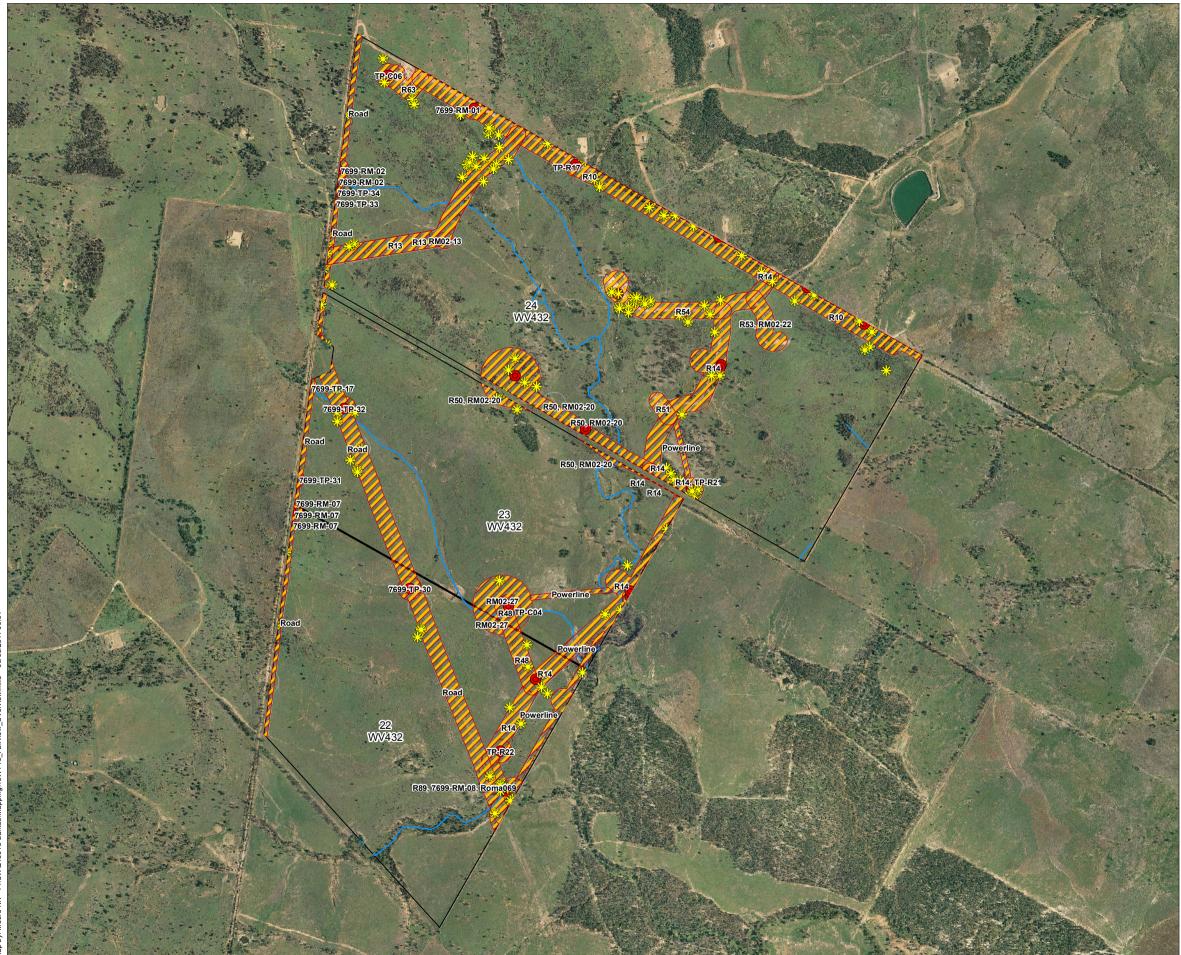
This report is specific to the proposed development areas listed below and shown in Figure 1.1:

- Pipeline corridors R10, R13, R14, R48, R50, R51, R53 R54, R63,
- · Geotechnical survey locations situated within the above corridors
- Powerline easement on Lots 22, 23 and 24
- Road corridor on Lots 22 and 23
- Road corridor traversing Lots 22, 23 and 24

These areas are collectively referred to as the 'proposed development area', and are located entirely within Lots 22, 23 and 24 on WV432. Note that the subject of this report is solely related to these lots. 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 Lots 22, 23 and 24 on WV432 (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.



A3 scale: 1:22,500

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# Legend

* Notable Species
Geotech Borehole Locations
LOT 22, 23 & 24WV432 Ground Truthed Areas
— Drainage (100K)
ESA Category A
ESA Category B
ESA Category C
Regional Ecosystem Mapping
Non-remnant / regrowth
Endangered - Sub-dominant
Endangered - Dominant
Of Concern - Sub-dominant
Of Concern - Dominant
Not Of Concern
Plantation forest
Water

	Notes:	
	Date: 08/06/2011	Version: 1
Santos Lo	ot 22, 23 and 24 or	ז WV432

# 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 Areas (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 Vanessa Boettcher on 11-16 May 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 corridors were 100 m wide and of varying lengths, and the circular well pad areas had a radius of 175 m. Well pads located at the end of some corridors were circular with a 400 m diameter. Geotechnical survey locations were also assessed as part of the survey areas (a 50 m buffer zone around each survey location was assessed).

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 Corridor R10

The proposed pipeline corridor R10 is located on Lot 24 WV432 (Figure 3-1). The proposed development area is situated on gently undulating land with a range of overlying geologies including black soils, silty-clays, and silty-sand soils. Three (3) geotechnical survey locations were assessed as part of this corridor, namely TP-R18, TP-R17 and 7699-RM-01.

The proposed development area has been previously disturbed due to heavy stock grazing, and clearing of vegetation for property boundary fences, access roads and existing well pads. Although the area has been largely cleared of vegetation, a narrow corridor of mature trees persists between the road reserve and the boundary fences, extending for almost the full length of the proposed corridor.

The proposed development area is currently mapped as non-remnant on the DERM RE mapping, and does not occur within any areas identified as ESA's (the nearest ESA is located approximately 1.8 km to the south of the corridor).

The proposed development area traverses three (3) mapped watercourses – two (2) in the south-west section (both stream order 1), and one (1) in the north-western section (stream order 2). Only slow-flowing water was observed in the watercourse with stream order 2.

#### **Floristics**

The proposed development area is largely cleared or disturbed and is characterised by a dense ground layer dominated by *Pennisetum ciliare* (Buffel Grass), non-native pasture species and associated native grasses. The shrub layer is generally mid-dense (approximately 25% cover over the total area on this Lot) to 2 m in height, and is dominated by *Eremophila mitchellii* (False sandalwood), with other species including *Carissa ovata* (Currant bush), *Alstonia constricta* (Bitter Bark), Acacia species and juvenile Eucalypts.

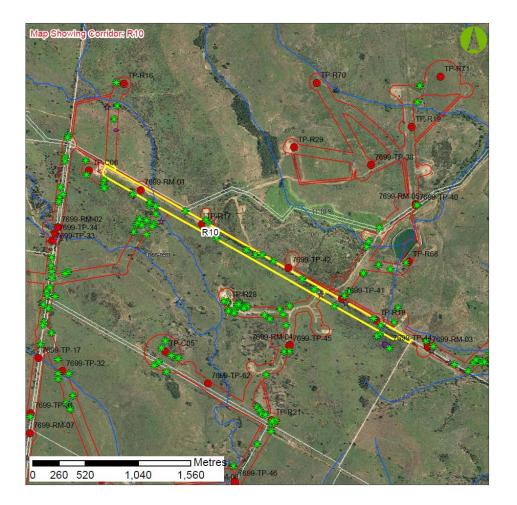
*Eucalyptus populnea* (Poplar box) and *E. mitchellii* are the co-dominant species in the sparse subcanopy layer (height range of 2.5-8 m), and the very sparse canopy layer (height range 8-20 m) includes *Acacia harpophylla* (Brigalow), Eucalyptus species (*Eucalyptus orgadophila*, *E. orgadophila x populnea*, *E. populnea*, *E. camaldulensis*) Bull oak (*Allocasuarina luehmannii*) and Brachychiton species.

The narrow corridor of vegetation between the road reserve and the boundary fence on Lot 87 WV763 contained similar dominant species to those mentioned above; however the structure of the vegetation community differed compared to the cleared/disturbed areas. The ground layer and shrub layers were typically not as dense, and the sub-canopy and canopy layer ranged from mid-dense to very dense (canopies touching – canopies overlap), and were typically. The species diversity within this vegetation corridor was also far greater than that of the disturbed areas.

A total of 14 Type A restricted plant species (under the NC Act) were recorded within the proposed development area - the location of these species is provided in Table 3.1

No species protected under the provisions of the EPBC Act were observed within the proposed corridor.

A list of flora species observed within the proposed development area is provided in Appendix A.



### Figure 3.1 Aerial photograph of proposed corridor R10

\* - denotes the location of Type A species

## Table 3.1 Species of conservation significance for Corridor R10

Species	Easting	Northing
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)
Brachychiton populneus (2 individuals)	704018	7082935
Brachychiton populneus	703945	7082999
Cymbidium canaliculatum	703674	7083153
Cymbidium canaliculatum	703426	7083236
Brachychiton populneus	703362	7083287
Brachychiton populneus	703244	7083389
Brachychiton populneus	702956	7083564
Brachychiton rupestris	702848	7083626
Brachychiton populneus	702781	7083628
Brachychiton rupestris	702692	7083673
Brachychiton populneus	702397	7083798

Species	Easting	Northing
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)
Brachychiton populneus	702364	7083842
Brachychiton populneus	702089	7084057

#### **Habitat values**

Thirteen (13) incidental fauna species were recorded within the proposed disturbance area, namely Willy wagtail (*Rhipidura leucophrys*), Torresian crow (*Corvus orru*), Magpie lark (*Grallina cyanoleuca*), Noisy miner (*Manorina melanocephala*), Pretty-face wallaby (*Macropus parryi*), Apostlebird (*Struthidea cinerea*), Wedge-tailed eagle (*Aquila audax*), Crested pigeon (*Ocyphaps lophotes*), Pale-headed rosella (*Platycercus adscitus*), Striated pardalote (*Pardalotus striatus*), Red-backed fairy-wren (*Malurus melanocephalus*), Golden-headed Cisticola (*Cisticola exilis*) and Pied butcherbird (*Gymnorhina tibicen*).

All of these species are listed as least concern under the provisions of the NC Act and EPBC Act.

Habitat features associated with the proposed disturbance 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)
- Watercourse habitat (including banks)

The habitat values of the proposed development area are low to moderate overall. The area contains limited woody vegetation and has been extensively disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species. The narrow corridor of vegetation that persists between the road reserve and property boundary is likely to provide habitat for a range of native avian fauna.

# 3.2 Corridor R13

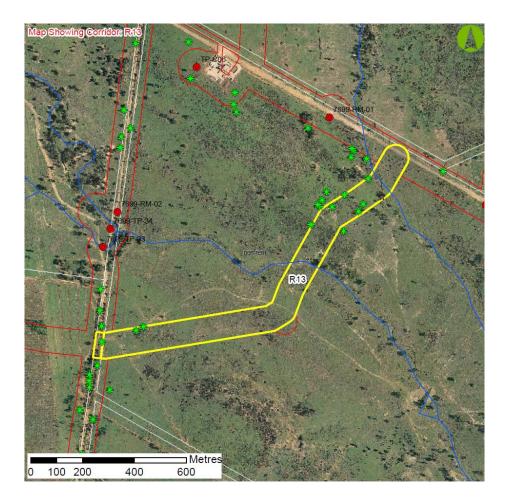
#### General

The proposed pipeline corridor R13 is located on Lot 24 WV432 (Note: section of corridor R13 on Lot 2 WV432 was not assessed due to land access restrictions). The proposed development area is located on gently undulating land with silty-sand soils. The area has been extensively disturbed previously as a result of heavy grazing by stock. There is one (1) existing cleared well pad (Hermitage 15), and an existing access road within the corridor. No geotechnical survey locations are proposed within this corridor at the time of assessment.

The proposed development area is currently mapped as non remnant on the DERM RE mapping. The area does not occur within any areas identified as ESA's, with the nearest ESA approximately 3 km to the west of the area.

Two (2) watercourses bisect the north-eastern section of the corridor and are mapped as stream order 2 and a stream order 3 (Figure 3.2). Neither watercourse was recorded as in flow at the time of the survey, however the northern-most watercourse contained a series of disconnected pools.

A cleared strip of approximately 20 m width occurs along the majority of the proposed corridor length, which appears to have been recently cleared/maintained which may be associated within an existing water pipeline however this was unable to be confirmed on site.



#### Figure 3.2 Aerial photograph of proposed corridor R13

- denotes the location of Type A species

#### **Floristics**

The vegetation within the proposed corridor has been previously cleared, and a cleared strip within the north-eastern section of the corridor (approximately 20 m wide) appears to have been recently cleared/maintained. The woody vegetation within the corridor is characterised by a mid-dense regrowth layer, with only small patches of mature/canopy trees associated with the watercourses.

The regrowth layer is dominated by *E. mitchellii* and *Grevillea striata* (Beefwood) (up to 3 m tall). The site has a dense ground layer which is dominated by *P. ciliare* with *Themeda triandra* (Kangaroo grass) (sub-dominant) and a range of other native grasses and herbs covering approximately 90% of the total corridor area.

The canopy layer within the site is very sparse, (less than 5% of the total corridor area) and is associated with the riparian areas associated with the two watercourses. Species present include *A. harpophylla*, *E. populnea* and *Eucalyptus melanophloia* (Silver-leaved ironbark), with a height range of 7-14 m.

A total of eight (8) Brachychiton species and one (1) *Cymbidium canaliculatum* (Black orchid) were recorded within the corridor – the locations of these species are outlined in Table 3-2 and in Figure 3-2. All of the species in 2 are Type A restricted plants under the NC Act. No species protected under the provisions of the EPBC Act were observed within the proposed corridor.

A list of flora species observed within corridor R13 is presented in Appendix A.

Species	Easting	Northing	
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)	
Brachychiton populneus	700933	7083458	
Brachychiton populneus	700933	7083458	
<i>Brachychiton populneus</i> ( 2 specimens)	700905	7083443	
Brachychiton populneus	701781	7083931	
Brachychiton populneus	701764	7083904	
Cymbidium canaliculatum	701853	7083960	
Brachychiton populneus	701800	7084030	
Brachychiton populneus	701709	7083967	

Table 3.2	Species of conservation significance for Corridor R13
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#### **Habitat values**

10 incidental fauna species were recorded within the proposed disturbance area, namely Willy wagtail, Torresian crow, Magpie lark, Noisy miner, Pretty-face wallaby, Common kestrel (*Falco tinnunculus*), Black-faced cuckoo-shrike, Apostlebird, Australian magpie (*Gymnorhina tibicen*), and Pied butcherbird. All of these species are listed as 'Least concern' under the provisions of the NC Act and EPBC Act.

Habitat features associated with the proposed disturbance area include:

- · Limited 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)
- Ephemeral watercourse habitat (including banks)

The habitat value of corridor R13 is low to moderate overall, as it contains limited woody vegetation and has been disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species.

Although the watercourses that bisect the corridor have been largely cleared of mature woody vegetation and are highly disturbed, the remaining riparian habitat provides structural elements (ie mature riparian vegetation, stags and bank habitat) which may be utilised by a range of native fauna, particularly avian fauna. These watercourses may also provide habitat for riparian-dependent species (eg amphibian species), although are unlikely to support significant populations due to their small patch size, limited connectivity and ephemeral nature.

# 3.3 Corridor R14

#### General

Corridor R14 is approximately 4.2 km in length and occurs entirely in non-remnant vegetation on the RE mapping. The corridor extends over Lots 22, 23 and 24 on WV432. It should be noted that due to access issues, the parts of R14 which occur on Lot 25 SP214993 have not yet been ground truthed. However, due to the majority of the corridor being verified, it has been included in this report. Figure 3-3 shows the entire corridor R14 and the hatched areas are those which have been ground truthed.

The corridor occurs across three (3) mapped watercourses, one of which is quite significant with a high flow channel approximately 80 m across. Two of the watercourses are of stream order 2 and one watercourse is of stream order 1.

The nearest ESA to the proposed corridor is located approximately 220 m away and is a 'Category C' ESA due to the presence of 'Of concern' remnant vegetation.

Corridor R14 includes geotechnical locations 7699-TP-45, 7699-RM-04, TP-R21, 7699-TP-46, 7699-RM-06, 7699-TP-47, TP-R22 and 7699-RM-08.

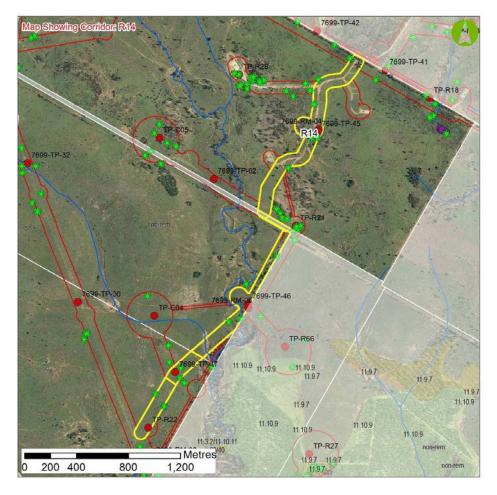
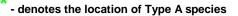


Figure 3.3 Aerial photograph of proposed corridor R14



#### **Floristics**

The pipeline corridor occurs in non-remnant vegetation and the majority of the corridor is dominated by pasture grasses of both exotic and native origin. There are scattered mature trees along the corridor however the only area of dense mature tree cover is the drainage line at the southern end of the corridor. At this drainage line the predominant species is *E. populnea* with associated *Eucalyptus tenuipes* (Narrow-leaved mahogany) and *Callitris glaucophylla* (White cypress) and occasional *Brachychiton populneus* (Kurrajong).

The corridor contains multiple Type A restricted plants of the species *Brachychiton rupestris* (Bottle tree) and *B. populneus*. All plants of the genus Brachychiton are Type A restricted species under the provisions of the NC Act. The location of each individual Brachychiton within the ground truthed corridor and immediately adjacent has been provided in Table 3.3 and is illustrated in Figure 3.3.

No other species of conservation significance under the EPBC Act or the NC Act were observed within the ground-truthed corridor.

#### Table 3.3 Notable species observed in Corridor R14

Species	Easting	Northing
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)
Brachychiton populneus	703119	7083123
Brachychiton populneus	703084	7082932
Brachychiton populneus	703112	7082676
Brachychiton populneus	703063	7082673
Brachychiton populneus	702794	7082118
Brachychiton populneus	702837	7082081
Brachychiton populneus	702830	7082077
Brachychiton populneus	702840	7082047
Brachychiton rupestris	702876	7082053
Brachychiton populneus	702979	7082003
Brachychiton populneus	702947	7081985
Brachychiton sp. (juv)	702953	7081961
Brachychiton populneus	702942	7081956
Brachychiton populneus	702934	7081884
Brachychiton populneus	702805	7081755
Brachychiton populneus	702429	7081254
Brachychiton populneus	702060	7080898
Brachychiton populneus	702050	7080821
Brachychiton populneus	701929	7080604
Brachychiton populneus	701750	7080290
Brachychiton populneus	701810	7080244
Brachychiton populneus	701794	7080232
Brachychiton populneus	701808	7080204
Brachychiton populneus	701847	7080214
Brachychiton populneus	701871	7080157
Brachychiton populneus	701773	7080072

#### **Habitat values**

The habitat values of corridor R14 are limited overall due to the lack of mature vegetation, the extent of previous disturbance and the high prevalence of exotic species. One area does have a slightly higher habitat value (low-moderate) and this is the riparian vegetation along the creek at the southern end of the corridor (refer Figure 3.3). This area provides additional cover and is likely to be utilised by avian fauna.

Many bird calls were heard in the vicinity of the creek however only Galahs (*Eolophus roseicapilla*) and Noisy miners were observed in the area. Other fauna observed along the corridor were Eastern grey kangaroos (*Macropus giganteus*), Pretty-face wallabies, Australian magpies, Wedge-tailed eagles (*Aquila audax*) (fly over only) and Brown quails (*Coturnix ypsilophora*).

No EVNT fauna species under the NC Act or the EPBC Act were observed along the corridor.

# 3.4 Corridor R48

#### General

Corridor R48 is approximately 635 m in length and occurs entirely in mapped non-remnant vegetation over Lots 22 and 23 on WV432 (refer Figure 3.4). The area is not located in or within 500 m of any areas mapped as ESA's. The nearest ESA to the development area is approximately 600m to the south and is an area of 'Of concern' remnant vegetation which is a 'Category C' ESA. This corridor includes a geotechnical test pit TP-C04.

The development area for corridor R48 occurs over a mapped stream order 1 watercourse. The watercourse was evident during the field inspection however was not fringed by any significant riparian vegetation.

The area is currently used for grazing domestic livestock and has been cleared and stick raked.

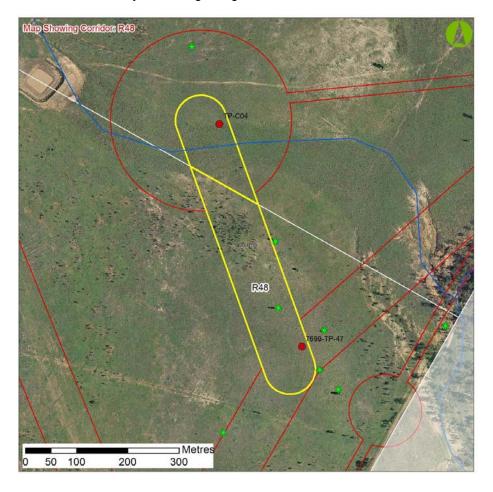


Figure 3.4 Aerial photograph of proposed corridor R48

\* - denotes the location of Type A species

#### Floristics

The proposed corridor R48 is located in an area which is not mapped as remnant vegetation. Ground truthing of the area verified this. The area has been cleared and is mainly vegetated with native and exotic grass species, dominated by *Melinis repens* (Red natal) and *T. triandra*. A patch of scattered regrowth *C. glaucophylla* and *Eucalyptus orgadophila* (Mountain coolabah) is present within the corridor but very little woody vegetation occurs elsewhere other than isolated trees.

One (1) isolated mature *B. populneus* and one (1) isolated juvenile *B. populneus* occur within the corridor. An additional *B. populneus* occurs approximately 6 m outside the corridor footprint. All species in the genus Brachychiton are Type A restricted plants under the provisions of the NC Act. The location of these plants is outlined in the table below.

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
Brachychiton populneus	701970	7080942
Brachychiton populneus	701801	7081453
Brachychiton populneus	701960	7081078

#### Table 3.4 Notable species within/adjacent to Corridor R48

No other species of conservation significance under the NC Act or the EPBC Act were observed within the corridor.

### Habitat values

The habitat value of corridor R48 is low. The area is nearly devoid of any mature woody vegetation and is predominantly pasture land. As the area has been stick raked, there was also very little woody debris on the ground. The ground is currently grazing domestic livestock and would be subject significant livestock movement due to the location of a farm dam adjacent to the corridor well pad. The area is unlikely to be used as a primary foraging or breeding habitat. No fauna were observed while traversing the corridor except for livestock.

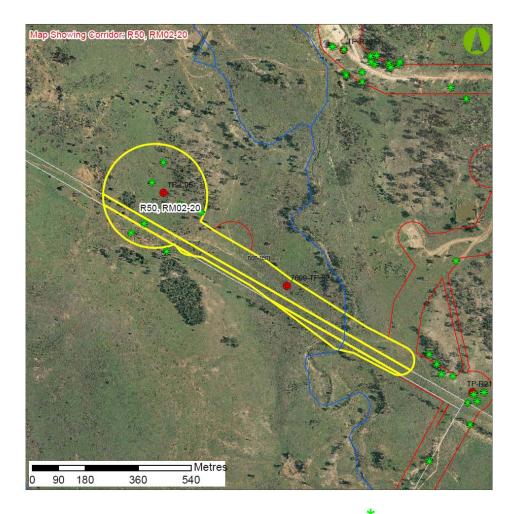
## 3.5 Corridor R50

#### General

Proposed corridor R50 is approximately 1.1 km in length and is located entirely in non-remnant vegetation on the RE mapping. The corridor is not located in or within 1 km or any ESA's. The nearest mapped ESA is located approximately 1.2 km to the south and is an area of remnant 'Of concern' vegetation which is a 'Category C' ESA (refer Figure 3.5). This corridor includes geotechnical locations 7699-TP-62 and TP-C05.

The corridor occurs across a mapped watercourse with a stream order of 3 which was evident during the field inspection.

The area is currently used for grazing domestic livestock and contained an existing access track.



#### Figure 3.5 Aerial photograph of proposed corridor R50

- denotes the location of Type A species

#### **Floristics**

Corridor R50 is located on Lots 23 and 24 on WV432 in an area which is not mapped as remnant vegetation. Ground truthing of the area verified that the vegetation is not remnant. The corridor contained very little woody vegetation except in the well pad area at the northern end. The majority of the corridor was dominated by both exotic and native pasture grasses with only scattered, isolated trees. The well pad area located at the end of the corridor contained more significant vegetation including a patch of un-mapped (too small) remnant *Corymbia tessellaris* (Moreton Bay ash) woodland. The area also contained a high density of regrowth *C. glaucophylla* and scattered *B. populneus*.

All plants of the genus Brachychiton are Type A restricted plants under the provisions of the NC Act. Corridor R48 contains multiple Brachychiton plants and their locations are outlined in the table below and illustrated in Figure 3.5.

Species	Easting	Northing
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)
Brachychiton populneus	701897	7082776
Brachychiton populneus	701856	7082710
Brachychiton populneus	701957	7082634

#### Table 3.5 Notable species within corridor R50

Species	Easting	Northing
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)
Brachychiton populneus	702022	7082610
Brachychiton populneus	701829	7082570
Brachychiton populneus	701791	7082542

No other species of conservation significance under the NC Act or the EPBC Act were observed within the proposed corridor.

#### **Habitat Values**

The habitat values of corridor R50 are limited along the pipeline corridor section but are low-moderate within the *C. tessellaris* woodland area in the well pad. The majority of the pipeline corridor lacks any significant mature vegetation, has been heavily disturbed, is currently grazing cattle and has a high prevalence of exotic species. Macropod scats were observed along the corridor but no macropod species were observed.

The area of the *C. tessellaris* woodland in the well pad has a higher habitat value (low-moderate) due to the density and age of the woody vegetation present. This area is likely to be suitable habitat for native avian fauna and many bird calls were heard in this location during the inspection.

Immediately in front of the woodland area is a small patch of scattered shrubby regrowth *C*. *glaucophylla* which was being used by Pretty-face wallabies as a resting location. At least three (3) individuals were present during the time of inspection.

## 3.6 Corridor R51

Corridor R51 is located on Lot 24 WV432 and is an existing well pad clearance of approximately 100 m in width and 115 m in length and lies adjacent to Corridor R14 on the western side of the corridor (refer Figure 3.6). Corridor R51 is almost devoid of vegetation except for native and exotic pasture grasses. There are no geotechnical investigation sites proposed within this corridor nor are there any watercourse crossings within this corridor.

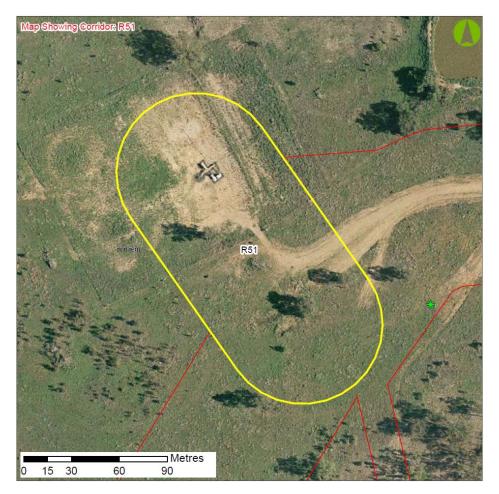


Figure 3-6 Aerial photograph of proposed corridor R51

#### **Floristics**

Corridor R51 is cleared land dominated by pasture grasses and only three (3) trees. There are no EVNT species or Type A species within this area.

#### Habitat Value

Given the fact this area is so small, is predominantly cleared of vegetation and consists of pasture grasses, the habitat value for this area is considered to be very low. No fauna species were observed within this area.

### 3.7 Corridor R53

#### General

The proposed pipeline corridor R53 is located on Lot 24 WV432 (Figure 3-7). The proposed corridor is situated on gently undulating land with red clay soils. The area has been extensively disturbed due to heavy grazing by stock and for the development of a well pad (Hermitage 7). An existing access road and above-ground water pipeline also traverse the corridor. No geotechnical survey locations were assessed as part of this corridor.

The proposed development area is currently mapped as non remnant on the DERM RE mapping. The area does not occur within any areas identified as ESA's, with the nearest mapped ESA located more than 1.8 km to the south of the corridor.

The corridor does not intersect any watercourses, with the nearest watercourse located approximately 500 m to the east.



Figure 3-7 Aerial photograph of proposed corridor R53

#### **Floristics**

The proposed development area has been extensively cleared for stock grazing purposes, the existing well pad for Hermitage 7 and an access road that runs the length of the corridor. As a result, the corridor is heavily invaded by *P. ciliare*, and contains only a sparse regrowth/shrub layer (less than 15% cover of the total corridor area) with no canopy layer present.

*C. ovata* was the dominant species within shrub layer, with other species including *A. constricta*, *E. mitchellii* and *A. harpophylla*.

No species of conservation significance under the provisions of the NC Act and/or the EPBC Act were observed within the proposed development.

#### **Habitat values**

Two (2) incidental fauna species were recorded within the proposed disturbance area, Australian magpie and Richard's pipit (*Anthus novaeseelandiae*). Both of these species are listed as 'Least concern' under the provisions of the NC Act and EPBC Act.

Habitat features associated with the proposed disturbance area include:

• Dense groundcover vegetation (ie grassy tussocks)

• Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)

The habitat value of corridor R53 is very low overall due to the high level of disturbance and previous clearing (associated with stock grazing, the existing well pad and the access road). The corridor is dominated by *P. ciliare* and other exotic pasture species. There are no mature trees within the corridor, and the majority of the woody vegetation on site is less than 3 m in height. A limited amount of woody debris was observed which further limits the potential habitat value.

Species utilising resources within this area are likely to be limited to commonly occurring, generalist species that can tolerate/adapt to significant habitat disturbances.

# 3.8 Corridor R54

#### General

Corridor R54 is approximately 130 m in length and is located entirely in non-remnant vegetation on the RE mapping (refer Figure 3.8). The development area is not located in or within 1 km of any mapped ESA's. The nearest ESA to the corridor is approximately 2 km to the south and is an area of remnant 'Of concern' vegetation which is a 'Category C' ESA. Corridor R54 includes geotechnical location TP-R28.

A stream order 1 watercourse is mapped as occurring approximately 45 m from the proposed corridor and is not affected by Corridor R54.

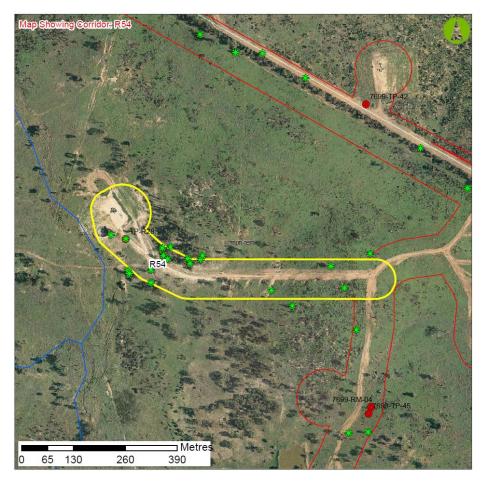


Figure 3-8 Aerial photograph of proposed corridor R54

- denotes the location of Type A species

#### **Floristics**

The proposed corridor R54 is cleared land which is currently dominated by pasture grasses and regrowth. The eastern half of the corridor which is more elevated is dominated by *P. ciliare* and other exotic species with dense thickets of *C. ovata* scattered throughout. As the corridor descends to the watercourse at the western end of the corridor a greater number of native species, especially *Heteropogon contortus* (Black spear grass), become more prevalent and *P. ciliare* is not as dominant. The woody regrowth vegetation which occurs along the length of corridor is mainly comprised of *A. harpophylla*, *E. populnea*, and *E. melanophloia*.

Scattered mature trees occur along the corridor, including Brachychiton species. All Brachychiton species are Type A restricted plants under the provisions of the NC Act. The locations of all Type A species within the corridor and immediately adjacent are identified in Table 3-8 below.

No other species of conservation significance under the EPBC Act or the NC Act were observed in the proposed corridor.

Species	Easting	Northing			
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)			
Brachychiton populneus	703054	7083037			
Brachychiton rupestris	703019	7083091			
Brachychiton populneus	702922	7082993			
Brachychiton sp. (juv)	702870	7083031			
Brachychiton populneus	702698	7083118			
Brachychiton populneus	702693	7083108			
Brachychiton sp. (juv)	702667	7083099			
Brachychiton rupestris	702661	7083111			
Brachychiton populneus	702610	7083110			
Brachychiton populneus	702599	7083118			
Brachychiton populneus	702618	7083140			
Brachychiton populneus	702597	7083138			
Brachychiton populneus	702569	7083082			
Brachychiton populneus	702569	7083051			
Brachychiton sp. (juv)	702514	7083074			
Brachychiton populneus	702512	7083080			
Brachychiton sp. (juv)	702506				
Brachychiton sp. (juv)	702468	7083169			

#### Table 3.8 Notable species within Corridor R54

#### **Habitat Value**

The habitat value of corridor R54 is low due to the lack of significant mature vegetation cover, the prevalence of exotic species and its location along a major access track through the area and existing well pad. The scattered mature vegetation along the western half of the corridor does provide some habitat for avian fauna however it is not likely to be a primary nesting or foraging habitat.

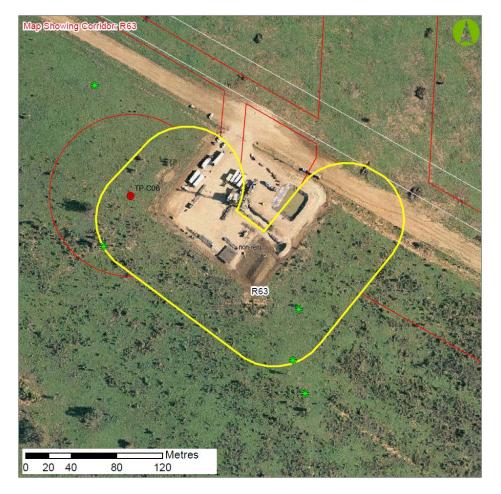
# 3.9 Corridor R63

#### General

The proposed pipeline corridor R63 is located on Lot 24 WV432 on a gently sloping rise with red siltyclay soils (Figure 3.9). The area has been previously cleared for the development of a well pad (Hermitage 14). The proposed development area has also been heavily impacted as a result of stock grazing. One (1) geotechnical survey location was assessed as part of this corridor, TP-C06.

The proposed area of disturbance is currently mapped as non remnant on the DERM RE mapping. The area does not occur within any areas identified as ESA's and the nearest ESA is located more than 2.7 km to the west of the proposed corridor.

No watercourses are mapped within the proposed corridor footprint, with the nearest watercourse located approximately 400 m to the east.



#### Figure 3-9 Aerial photograph of proposed corridor R63

- denotes the location of Type A species

#### **Floristics**

The proposed development area has been previously disturbed for the construction of the adjacent well pad (Hermitage 14) and for agricultural purposes (stock grazing). The vegetation community is dominated by exotic pasture species and a low, sparse native shrub layer.

The ground layer is dense (approximately 80% cover of the total development area), with the dominant species being *P. ciliare*. The sparse shrub layer (approximately 20% cover of the total

development area) largely consists of native species (*G. striata, Acacia spp., E. mitchellii, A. constricta* and juvenile Eucalyptus species).

The canopy stratum is low (height range of 3-8 m) and very sparse (less than 5% cover of the total area). Species recorded within the canopy layer include *B. populneus*, *B. rupestris*, *E. populnea*, *G. striata* and *Owenia acidula* (Emu apple).

A total of five (5) Brachychiton species were recorded within or directly adjacent to the corridor – the locations of these species are outlined in Table 3.9. All of the species in Table 3.9 are Type A restricted plants under the NC Act.

No species protected under the provisions of the EPBC Act were observed within the proposed corridor.

Species	Easting	Northing
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)
Brachychiton populneus	701287	7084361
Brachychiton rupestris	701281	7084316
Brachychiton populneus	701115	7084416

 Table 3.9
 Species of conservation significance for Corridor R63

#### **Habitat values**

No incidental fauna species were recorded within the proposed corridor R63 disturbance area. Habitat features associated with the proposed disturbance area include:

- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Limited canopy cover suitable for shelter, foraging and perching

The habitat values of corridor R63 are low overall. The area has been previously cleared for stock grazing and the development of the adjacent well pad (Hermitage 14). The site has low structural diversity and is dominated by non-native pasture species (including *P. ciliare*) and a mid-dense shrub layer (up to 3 m tall) of mostly native species. The corridor contains a limited number of mature trees (to 8 m tall) which may provide habitat for native avian fauna (eg foraging, roosting, perching).

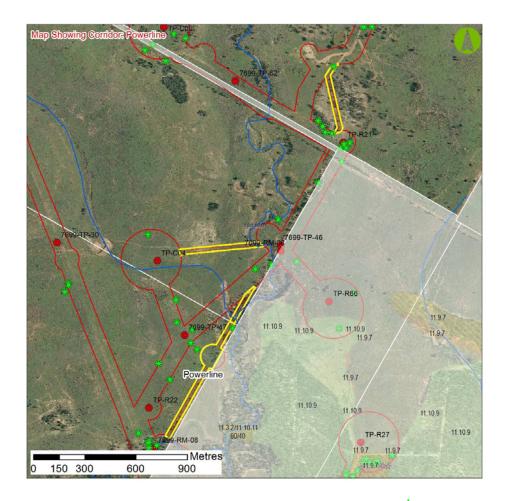
The corridor generally lacks important habitat features such as fissured bark, hollow-bearing trees and logs, and leaf litter. Species utilising resources in this area are most likely to be limited to commonly occurring, generalist species that are able to adapt to significant habitat disturbances.

## 3.10 Powerline

#### General

There are three (3) powerline corridors within this development area, with one traversing Lot 22 and 23 on WV432, one solely on Lot 23 and another on Lot 24 (refer Figure 3.10). All three corridors are generally heavily disturbed areas, occurring largely in paddocks affected by grazing. None of the three corridors are associated with any geotechnical survey locations. The powerline corridor that traverses Lots 22 and 23 does intercept a watercourse with a stream order of 1 towards the north of the corridor.

The proposed area of disturbance is currently mapped as non remnant on the DERM RE mapping. The area does not occur within any areas identified as ESA's however there is an area mapped as 'Of concern' RE approximately 300 m to the east of the most southern powerline.



# Figure 3-10 Aerial photograph of proposed powerline corridors species

\* - denotes the location of Type A

#### **Floristics**

All three corridors are predominantly cleared, heavily disturbed paddocks dominated by *P. ciliare* and *C. glaucophylla* regrowth. The southern corridor contained some canopy trees, namely *E. populnea, E. melanophloia* and *E. tereticornis* which are associated mainly with the watercourse crossing toward the northern extent and form the edge of a large patch of mapped remnant vegetation to the east of Lots 22 and 23. The shrub layer is dominated by *Geijera parviflora* (Wilga), *Opuntia tomestra* (Pear tree), *E. mitchellii, G. striata,* and juvenile *C. glaucophylla.* 

Two (2) Type A restricted species under the NC Act were recorded from within the powerline corridors within this development area. These are listed in Table 3.10 below.

No species protected under the provisions of the EPBC Act were observed within the proposed corridor.

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
Brachychiton populneus	702297	7080906
Brachychiton sp. (juv.)	702887	7082441

 Table 3.10
 Species of conservation significance for Powerline corridors

#### Habitat values

The habitat value of these corridors is considered low. The canopy cover is generally minimal (less than 5 % and the ground cover is dominated by *P. ciliare.* There is limited woody debris such as hollow logs and fallen timber and leaf litter. The poor quality of the watercourse provides limited value, however this area provides the most habitat complexity within all of the corridors.

No fauna species were observed within these corridors during the field investigations.

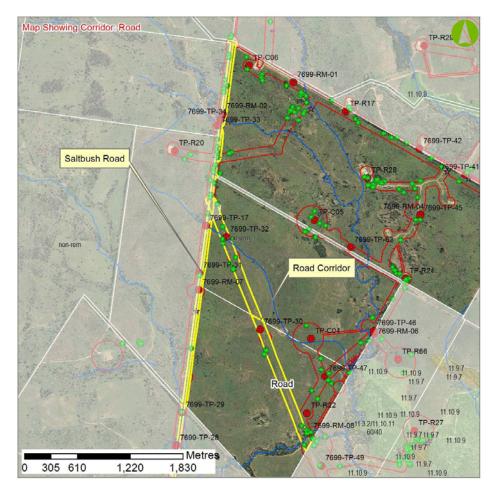
## 3.11 Road

#### General

The road corridor within this development area traverses Lots 22 and 23 on WV432, this corridor also encompasses Corridor R89 (refer Figure 3.11). This corridor has been heavily cleared and as such is a highly disturbed corridor with limited ecological value. There are three (3) geotechnical survey locations within this corridor, 7699-RM-08, 7699-TP-30 and 7699-TP-32.

The road corridor crosses two (2) watercourses, one (in the northern section of the corridor) with a stream order of 1 and the other (part of R89) a stream order of 2. The watercourse in the northern section of the corridor is highly disturbed with no riparian zone remaining. The southern watercourse is also highly disturbed however the riparian zone is still relatively intact, despite the disturbed nature due to cattle access and the presence of exotic grass species.

The proposed area of disturbance is currently mapped as non remnant on the DERM RE mapping. The area does not occur within any areas identified as ESA's, with the closest ESA, 'Of concern' RE occurring approximately 400 m to the east of R89.



#### Figure 3.11 Aerial photograph of proposed road corridor

#### - denotes the location of Type A species

#### **Floristics**

This corridor is a heavily disturbed paddock dominated by *P. ciliare*, and *C. glaucophylla* regrowth in the north and *P. ciliare*, *Capillipedium parviflorum* (Scented-top grass) and *E. populnea*, *E. melanophloia*, and *C. tesselaris* in the south.

The riparian zone in the south of the corridor is disturbed and dominated by *C. glaucophylla, E. populnea* in the canopy and *P. ciliare, Heteropogon contortus* (Black spear grass) and *Lomandra longifolia* (Spiny-head mat-rush) in the ground layer.

Several Type A restricted species under the NC Act were recorded from within the powerline corridors within this development area. These are listed in Table 3.11 below.

No species protected under the provisions of the EPBC Act were observed within the proposed corridor.

Species	Easting	Northing
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)
Brachychiton populneus	702862	7080145
Brachychiton populneus	701732	7080291
Brachychiton rupestris	701309	708119
Brachychiton rupestris	701330	7081169
Brachychiton rupestris	701333	7081162
Brachychiton populneus	701855	7080220
Brachychiton populneus	701806	708206
Brachychiton populneus	701794	7080234
Brachychiton populneus	701802	708235
Brachychiton populneus	700954	7082101
Brachychiton populneus	700952	7082112
Brachychiton populneus	700913	7082170
Brachychiton rupestris	700981	7082239
Brachychiton populneus	700835	7082401
Brachychiton populneus	700940	7082454
Brachychiton populneus	700832	7082454
Brachychiton populneus	700831	7082593
Brachychiton populneus	700770	7082856

#### Table 3.11 Species of conservation significance for road corridor

#### **Habitat values**

The habitat value of this corridor is low given the highly disturbed nature of the area and high level of exotic species. The canopy cover and ground cover is limited (less than 5%) and other habitat features such as habitat trees and woody debris is scarce. The disturbed riparian zone within the

southern aspect of the corridor provides the highest value with the greatest percentage of canopy cover.

Fauna species observed during the field investigation includes Willy wagtail, Magpie lark, Brown quail, Noisy miner, and Wedge-tailed eagle.

## 3.12 Saltbush Road

#### General

This section of the Saltbush Road corridor traverses the western extent of Lots 22, 23 and 24 on WV432 and is approximately 4.2 km in length (refer Figure 3-11). The length of the corridor is mapped as non-remnant and does not impact on any ESAs nor is it within 1 km of any mapped ESA. There are no geotechnical survey locations within this road corridor.

There are two (2) watercourse crossings within this corridor, both with a stream order of 1.

#### **Floristics**

The road corridor is highly disturbed with occasional individuals of *E. populnea*, and an understorey dominated by *P. ciliare*. Several Type A species were recorded in this corridor as highlighted below in Table 3.12.

Species	Easting	Northing
	(GDA 94, Zone 55J)	(GDA 94, Zone 55J)
Brachychiton rupestris	700468	7081187
Cymbidium canaliculatum	700529	7081624
Brachychiton populneus	700694	7082965
Brachychiton populneus	700738	7083098
Brachychiton populneus	700804	7083213
Brachychiton populneus	700755	7083306
Brachychiton rupestris	700773	7083398
Brachychiton populneus	700882	7084224

#### Table 3.12 Species of conservation significance for Saltbush Road

#### **Habitat values**

The habitat value of the proposed road corridor is moderate. Mature trees bearing hollows occur sporadically along its length, and large woody debris with hollows and fissured, flaky bark is also present in limited quantities. However, as the corridor is narrow and occurs within a highly fragmented landscape, its value to ground-dwelling and arboreal mammals would be marginal. Tree hollows were observed to provide shelter for nesting birds in other parts of the road corridor on adjoining lots, and this is likely to be of greatest habitat value to local fauna species.

No fauna species of conservation significance were observed during the field investigations.

# 4. Conclusion

The pipeline corridors occur across a variety of landscape and vegetation types. While most the corridors occur in previously disturbed areas, species of conservation significance occur in multiple corridors (ie Type A restricted plants).

The proposed development does not traverse any areas mapped as RE nor does it impact on any ESAs.

Multiple watercourses occur within, or in close proximity to, development areas. The watercourses within the proposed development areas have limited fringing riparian vegetation, and subsequently have low to moderate ecological and habitat value.

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

No species protected under the provisions of the EPBC Act were observed within the proposed development areas during these investigations.

# 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

Species name	Common name	R10	R13	R14	R48	<b>R50</b>	R51	R53	R54	<b>R63</b>	Power line	Road	Saltbush Road
Abutilon leucopetalum	Abutilon												
Abutilon malviflorum	Flowering maple												
Abutilon oxycarpum	Chinese lantern												
Abutilon sp	Abutilon												
Acacia complanata	Velvet wattle												
Acacia deanei	Dean's wattle												
Acacia decora	Pretty wattle												
Acacia excelsa	Iron wood												
Acacia farnesiana	Needle bush												
Acacia harpophylla	Brigalow												
Acacia leiocalyx	Black wattle												
Acacia macradenia	Zigzag wattle												
Acacia nilotica	Prickly acacia												
Acacia salicina	Sally wattle												
Acalypha sp.	Turkey bush												
Alectryon diversifolius	Scrub boonaree												
Allocasuarina luehmannii	Bull oak												
Allocasuarina torilosa	Forest she-oak												
Alloteropsis semialata	Cockatoo grass												
Alphitonia excelsa	Red ash												
Alstonia constricta	Bitter bark												
Alternanthera dentata	Joy weed												
Alternanthera pungens	Kaki burr												
Angophora floribunda	Rough-barked apple												
Angophora leiocarpa	Smooth-barked apple												
Apophyllum anomalum	Warrior bush												
Aristida holathera	Tall wire grass												
Aristida ingrata	Purple aristida											1	
Aristida jerichoensis	Jericho wire grass												
Aristida queenslandicus	White spear grass												

Species name	Common name	R10	R13	R14	R48	R50	R51	R53	R54	R63	Power line	Road	Saltbush Road
Aristida queenslandicus car. dissimilis	Wire grass												
Aristida caput-medusa	Curly head wire grass												
Aristida personata	Spear grass												
Aristida ramosa	Wire grass												
Astrotricha cordata	Hare plant												
Atalaya hemiglauca	Whitewood												
Atalaya salicifolia	Scrub whitewood												
Austrostipa verticillata	Slender bamboo grass												
Backhousia angustifolia	Grey myrtle												
Bidens bipinnata	Giant cobblers pegs												
Bidens pilosa	Cobblers pegs												
Bothriochloa bladhii	Forest blue grass												
Bothriochloa decipiens var. decipiens	Pitted blue grass												
Bothriochloa ewartiana	Desert blue grass												
Brachychiton populneus	Kurrajong												
Brachychiton rupestris	Narrow leaved bottle tree												
Brachycome dentata	Lobe-seed Daisy												
Bracteantha bracteata	Everlasting daisy												
Breynia oblongifolia	Breynia												
Bursaria incana	Prickly pine												
Bursaria spinosa	Prickly pine												
Callitris endlicheri	Black cypress pine												
Callitris glaucophylla	White cypress pine												
Calotis cuneifolia	Purple burr daisy												
Calotis hispidula	Bogan flea												
Calotis lappulacea	Yellow burr daisy												
Calotis multicaulis	Woolly head burr daisy												
Canthium oleifolium	Hat stand												
Capparis lasiantha	Nipan												

Species name	Common name	R10	R13	R14	R48	<b>R50</b>	R51	R53	R54	R63	Power line	Road	Saltbush Road
Capparis mitchellii	Bumble fruit												
Capparis sepiaria	Wild caper bush												
Capparis spinosa	Capparis midsize												
Capillipedium spicigerum	Scented-top grass												
Carex inversa	Nut sedge												
Carissa lanceolata	Currant bush												
Carissa ovata	Currant bush												
Cassinia laevis	Cough bush												
Casuarina cristata	Belah												
Chamaesyce drummondii	Caustic weed												
Cheilanthes sieberi	Mulga fern												
Chenopodium album	Fat hen												
Chenopodium carinatum	Keeled goosefoot												
Chenopodium desertorum	Desert goosefoot												
Chloris divaricata	Chloris												
Chloris gayana	Rhodes grass												
Chloris inflata	Purple top rhodes												
Chloris purpurata	Purple chloris												
Chloris truncata	Windmill chloris												
Chloris ventricosa	Tall chloris												
Chloris virgata	Silky topped rhodes grass												
Chrysocephalum apiculatum	Yellow buttons												
Cirsium vulgare	Spear thistle												
Cissus opaca	Native grape												
Citrus glauca	Lime bush												
Clerodendron parviflora	Lolly bush												
Conyza bonariensis	Fleabane												
Conyza canadensis	Canadian fleabane												
Conyza canadensis var. pusilla	Fleabane												
Corymbia clarksoniana	Clarkson's bloodwood												

Species name	Common name	R10	R13	R14	R48	R50	R51	R53	R54	R63	Power line	Road	Saltbush Road
Corymbia hendersonii	Henderson's bloodwood												
Corymbia tessellaris	Moreton bay ash												
Crinum pedunculatum	Spider lily												
Crotalaria dissitiflora	Grey rattlepod												
Crotalaria mitchellii	Hairy rattlepod												
Crotalaria novae-hollandiae	New holland rattlepod												
Crotalaria sp.	Rattlepod												
Cucumis myriocarpus	Paddy melon												
Cymbidium canaliculatum	Black orchid												
Cymbopogon obtectus	Golden beard grass												
Cymbopogon refractus	Barbwire grass												
Cynodon dactylon	Green couch												
Cyperus bifax	Star sedge												
Cyperus difformis	Dirty dora												
Cyperus dymnocaulos	Sedge with nuts												
Cyperus polystachyos	Bunchy sedge												
Cyperus rotundus	Nut grass												
Dactyloctenium radulans	Button grass												
Desmodium brachypodum													
Desmodium varians	Tree foil												
Dianella caerula	Blue flax-lily												
Dianella longifolia	Dianella												
Dichanthium sericeum	Queensland blue grass												
Digitaria ammophila	Digitaria												
Dodonaea viscosa	Sticky hopbush												
Dodonea viscosa subsp. Lanceolata	Sticky hopbush												
Echinochloa colona	Awnless barnyard grass												
Einadia nutans	Spade chenopod												
Enneapogon avenaceus	Bottle washer											1	

Species name	Common name	R10	R13	R14	R48	R50	R51	R53	R54	<b>R63</b>	Power line	Road	Saltbush Road
Enteropogon acicularis	Curly windmill grass												
Enteropogon ramosus	Twirly windmill grass												
Eragrostis basedowii	Neat love grass												
Eragrostis brownii	Brown's love grass												
Eragrostis fallax	Tall love grass												
Eragrostis lacunaria	Tall love grass												
Eragrostis leptocarpa	Drooping lovegrass												
Eragrostis leptostachya	Lovegrass												
Eragrostis sororia	Blue eragrostis												
Eremophila debilis	Winter apple												
Eremophila mitchellii	False sandalwood												
Erythroxylum australe	Cocaine tree												
eucalyptus camaldulensis	River red gum												
Eucalyptus chloroclada	Dirty gum												
Eucalyptus crebra	Narrow-leaved ironbark												
Eucalyptus decorticans	Gum-topped ironbark												
Eucalyptus melanophloia	Silver leaved ironbark												
Eucalyptus orgadophila	Mountain coolibah												
Eucalyptus orgadophila X E populnea	Boettcher's box												
Eucalyptus populnea	Poplar box												
Eucalyptus tenuipes	Narrow leaved white mahogany												
Eucalyptus tereticornis	Blue gum												
Eulalia aurea	Silky brown top grass												
Euphorbia drummondii	Caustic weed												
Euphorbia peplus	Petty spurge												
Eustrephus latifolia	Wombat berry												
Evolvulus alsinoides	Speed well												
Fimbristylis dichotoma	Fimbristylis												
Fimbristylus nutans	Star sedge												

Species name	Common name	R10	R13	R14	R48	R50	R51	R53	R54	R63	Power line	Road	Saltbush Road
Gahnia aspera	Gahnia												
Geijera parviflora	Wilga												
Geranium solanderi	Native geranium												
Glycine clandestina	Twining glycine												
Glycine tomentalla	Hairy glycine												
Glycine tubacina	Native soybean												
Gomphocarpus physocarpus	Balloon cotton bush												
Gomphrena celosioides	Gomphrena weed												
Gonocarpus micranthus subsp. ramosissimus	Gonocarpus												
Goodenia fascicularis	Goodenia												
Goodenia glabra	Smooth goodenia												
Goodenia grandiflora	Goodenia												
Grevillea striata	Beefwood												
Grewia latifolia	Dysentery plant												
Hakea chordophylla	Prickly oak												
Hakea lorea	Bootlace oak												
Heliotropium amplexicaule	Blue heliotrope												
Heteropogon contortus	Black spear grass												
Hibiscus brachysiphonius	Bush hibiscus												
Hovea lorata	Hovea												
Hovea planiflora	Hovea												
Hydrocotyle sp.	Pennywort												
Hyptis capitata	Knob weed												
Indigofera australis	Australian indigo												
Ipomoea longifolia	Cow vine												
Jasminum didyum subsp. racemosa	Native jasmine												
Jasminum simplicifolium	Native jasmine												
Juncus usitatus	Juncus												
Keraudrenia collina	Keraudrenia												

Species name	Common name	R10	R13	R14	R48	<b>R50</b>	R51	R53	R54	R63	Power line	Road	Saltbush Road
Keraudrenia hookeriana	Keraudrenia												
Keraudrenia nephrosperma	Keraudrenia												
Lepidium sagittulatum	Pepper cress												
Leptochloa digitata	Cane grass												
Lomandra cephaloides	Lomandra												
Lomandra longifolia	Spiny-headed mat rush												
Lomandra multiflora	Lomandra												
Lomandra nultiflora subsp. multiflora													
Lomandra spicata	Lomandra												
Lophostemon sauveolens	Swamp mahogany												
Lotus corniculatus	Lotus, Birdsfoot trefoil												
Lysicarpus angustifolius	Bedgeroo												
Macroptilium lathyroides	Phasey bean												
Maireana microphylla	Small-leaf bluebush												
Malvastrum americanum	Spiny malvastrum												
Marsednia australis	Marsdenia												
Marsdenia longifolia	Marsdenia												
Marsdenia viridiflora	Marsdenia												
Maytenus cunninghamii	Yellow berry bush												
Medicago polymorpha	Burr medic												
Melaleuca irbyana	Western swamp tea-tree												
Melinis repens	Red natal												
Microlaena stipoides	Weeping grass												
Myoporum acuminatum	Boobialla												
Neptunia gracilis	Native sensitive weed												
Neptunia monosperma	Neptunia												
Opuntia stricta	Prickly pear												
Opuntia tomentosa	Velvety tree pear												
Otocarpum acropterum	Coral salt bush												

Species name	Common name	R10	R13	R14	R48	<b>R50</b>	R51	R53	R54	<b>R63</b>	Power line	Road	Saltbush Road
Owenia acidula	Emu apple												
Oxalis stricta	Yellow wood sorrel												
Pandorea pandorana	Wonga vine												
Panicum antidotale	Giant panic grass												
Panicum decompositum	Hairy panic												
Panicum effusum	Inquisitive grass												
Panicum maximum var. trichoglume	Green panic												
Panicum similie	Two-coloured panic												
Parsonsia lanceolata	Monkey rope												
Paspalidium caespitosum	Brigalow grass												
Paspalidium distans	Paspalidium												
Paspalum dilatatum	Paspalum												
Paspalum distichum	Water couch												
Pennisetum ciliare	Buffel grass												
Perotis rara	Comet grass												
Persoonia falcata	Geebung												
Petalostigma pubescens	Quinine												
Phyllanthus gunnii	Phyllanthus												
Phyllanthus similis	Phyllanthus												
Pimelea microcephala	Pussy tail												
Pittosporum angustifolium	Native apricot												
Pittosporum phylliriodes	Wild apricot												
Pittosporum spinescens	Wallaby apple												
Pittosporum undulatum	Pittosporum												
Plectranthus sp.													
Podolepis jaceoides	Showy copper wire daisy												
Portulaca oleracea	Pigweed												
Portulaca pilosa	Hairy pigweed												
Pseuderanthemum variabile	Love flower												

Species name	Common name	R10	R13	R14	R48	<b>R50</b>	R51	R53	R54	R63	Power line	Road	Saltbush Road
Psydrax odorata	Shiny-leaved canthium												
Psydrax odorata subsp. australiana	Canthium												
Psydrax odorata subsp. buxifolius	Round leaf psydrax												
Psydrax oleifolia	Canthium												
Psydrax oleifolia forma australiensis	Canthium												
Pterocaulon sphacelatum	Apple bush												
Ptilotus polystachyus	Pussy tails												
Ranunculus pentandrus													
Rhynchosia minima	Rhynchosia												
Rumex brownii	Swamp dock												
Salsola kali	Roly poly												
Santalum lanceolatum	Sandalwood												
Scaevola parvibarbata	Purple flower scavevola												
Sclerolaena birchii	Galvanised burr												
Senecio lautus	Fire weed												
Senecio queenslandicus	Queensland daisy												
Senna artemisioides	Senna												
Senna artemisioides subsp artemisioides	Silver cassia												
Setaria australiensis	Pigeon grass												
Setaria surgens	Pigeon grass												
Sida cordifolia	Flannel weed												
Sida fibulifera	Creeping sida												
Sida platycalyx	Sida												
Sida rhombifolia	Paddy's lucerne												
Sida rohlenae	Shrub sida												
Sida spinosa	Spiny sida												
Sida subspicata	Queensland hemp												
Sida trichopoda	Sida												

Species name	Common name	R10	R13	R14	R48	R50	R51	R53	R54	R63	Power line	Road	Saltbush Road
Solanum brownii	Violet nightshade												
Solanum ellipticum	Potato bush												
Salanum esuriale	Brown potato bush												
Solanum nigrum	Blackberry nightshade												
Sorghum alum	Silk sorghum												
Sorghum halepense	Johnson grass												
Spartothamnella puberula	Spiky bush												
Sporobolus actinocladus	Ray grass												
Sporobolus australasicus	Drop seed grass												
Sporobolus caroli	Desert sporobolus												
Sporobolus creber	Western rats tail grass												
Stylosanthes scabra cv. seca	Fine stem stylo											1	1
Stylosanthes scabra cv. seca	Seca stylo												
Swainsona galegifolia	Swainsona												
Swainsona greyana	Swainsona pea											1	
Tagetes minuta	Stinking rodger												
Tephrosia supina	Tephrosia											1	
Themeda avenacea	Wild oats grass												
Themeda quadrivalvis	Grader grass												
Themeda triandra	Kangaroo grass												
Thysanotus tuberosus	Fringed lily												
Tragus australianus	Burr grass												
Trianthema portulacastrum	Black pigweed												
Trianthema triquetra	Red spinach												
Tridex procumbens	Tridax daisy												
Trifolium repens	White clover												
Urochloa mosambicensis	Mozambique grass												
Urochloa panicoides	Liverseed grass												
Ventilago viminalis	Vine tree												
Verbenaaristigera	Fine leaf verbena												

Species name	Common name	R10	R13	R14	R48	<b>R50</b>	<b>R51</b>	R53	<b>R54</b>	<b>R63</b>	Power	Road	Saltbush
											line		Road
Verbena bonariensis	Bunchy verbena												
Verbena litoralis	Tall verbena												
Verbena officinalis	Common verbena												
Verbena tenuisecta	Mayne's curse												
Verbesina enceliodes	Crownbeard												
Vigna lanceolata	Vigna												
Viola hederacea	Native viola												
Wahlenbergia communis	Large bluebells												
Wahlenbergia gracilis	Sprawling bluebell												
Xanthium occidentale	Noogoora burr												
Xanthium spinosum	Bathurst Burr												
Zinnia multiflora	Zinnia												1