



ATLAS Stage 3 –Pre-clearance Survey Report – Sundown Trunkline

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Senex

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AUSECOLOGY PTY LTD

ABN 15 155 304 751

PO Box 594, Morningside, QLD 4170

w www.ausecology.com

e info@ausecology.com

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Glossary of Terms

Acronym	Description
ATP	Authority to Prospect
GTRE	Ground-truthed regional ecosystem
DBH	Diameter at breast height
EA	Environmental Authority
ECPPFD	<i>Environmental Constraints Protocol for Planning and Field Development</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
<i>EP Regulation</i>	<i>Environmental Protection Regulation 2008</i>
ESA	Environmentally Sensitive Areas
ha	Hectares
m	Metres
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
PL	Petroleum Lease
RE	Regional Ecosystem
sp.	Species (singular)
spp.	Species (plural)
sqm	Square metres
SQP	Suitably qualified person
TEC	Threatened Ecological Community

1 Introduction

The pre-clearance survey methodology applied within this package of works is deemed appropriate to confirm the on-the-ground biodiversity values present.

1.1 Project background

The Atlas Stage 3 Gas Project (EPBC Act referral 2022/09410) involves developing, operating, decommissioning and rehabilitating up to 151 coal seam gas wells; gas and water gathering systems for the producing wells; access tracks; brine and produced water storages; borrow pits; and ancillary supporting facilities on Petroleum Lease (PL) 1127, PL1037, PL445 and PL209 in the central part of the Surat Basin, Queensland (Senex, 2024).

This report provides the results of pre-clearance survey on a 24 m wide trunkline (known hereafter as ‘The Footprint’) and a 30 m buffer within the Sundown property: 19FT60.

1.2 Scope

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

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

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

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

This survey also involved targeted threatened flora surveys, active threatened fauna surveys (where suitable habitat was identified) and fauna habitat identification (where encountered) as per the ECPFD.

1.3 EPBC conditions

This report will validate compliance with the following EPBC approval conditions:

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

PRE-CLEARANCE SURVEYS

6. *Prior to commencing clearing, the approval holder must:*
 - a) *undertake at least one pre-clearance survey of the proposed area of clearing, and*

- b) publish on the website the pre-clearance survey findings, including:
- i) the location and extent of trees to be cleared, including maps, and
 - ii) a discussion of how removal of trees will not change the ability of Koalas to disperse across the landscape.

2 Methodology

An Ausecology senior ecologist (suitably qualified) and ecologist conducted field surveys on foot on the 5th of January 2025 to determine impacts from the planned gas trunkline on the Sundown property. The area surveyed and mapped in this report include the trunkline planned on the Sundown property as shown in Figure 2-1.

2.1 Regional Ecosystem assessment and Threatened Ecological Communities

2.1.1 Desktop assessments

Desktop assessment and baseline ecological assessments have previously been undertaken (Boobook, 2023), including ground-truthed regional ecosystem (GTRE) mapping and threatened ecological community surveys. This report has been reviewed as part of this desktop assessment prior to the preclearance surveys and were deemed to have been conducted to an acceptable level of detail. Given the level of detail in prior reports, no further detailed desktop analysis has been conducted.

2.1.2 Regional Ecosystem assessment

During pre-clearance surveys, quaternary site assessments to verify regional ecosystems were undertaken where necessary (i.e., where vegetation and ecological communities have been determined to vary from the mapped GTRE at the time of the pre-clearance surveys). These assessments were conducted in accordance with the ECPPFD.

2.1.3 Threatened Ecological Communities

Where necessary Threatened Ecological Community (TEC) assessments were undertaken to confirm the presence and condition of TECs identified as known or potential in The Footprint if these were determined to vary from the mapped TEC areas identified in the constraints mapping.

2.2 Targeted threatened flora surveys

These surveys were conducted by a suitably qualified person (SQP). Targeted flora surveys of all known, likely or potential threatened flora species were conducted within The Footprint and 30 m buffer, where mapped constraint areas were present and/or suitable habitat was identified by the SQP, in accordance with the ECPPFD.

These surveys were conducted using the random meander methodology and if a species was encountered, a population survey was undertaken to determine the extent and density of the population. Threatened flora species and the locations of all individuals were recorded and specimens collected of any unknown individual requiring confirmation by the Queensland Herbarium.

Potentially occurring threatened species in the area as per the ECPPFD include Belson's panic (*Homopholis belsonii*), red soil woolly wrinklewort (*Rutidosis lanata*) and winged nightshade (*Solanum stenopterum*).

2.3 Fauna habitat assessment

Senex has committed to not clearing any areas confirmed as habitat for threatened species (ECPPFD), with the exception of koala (*Phascolarctos cinereus*) dispersal habitat and short-beaked echidna (*Tachyglossus aculeatus*) habitat. Fauna habitat baseline assessments have been conducted to an adequate level of detail to enable

known, likely and potentially present species to be identified and comprehensive Project impact assessment and constraints mapping has been completed (ECPPFD).

The pre-clearance surveys will reassess the habitat present (as mapped in the constraints mapping (ECPPFD)) or otherwise identified by the SQP during the pre-clearance surveys) in order to refine mapped habitat areas. They will also identify and record micro-habitat features and breeding sites to facilitate avoidance and minimisation of impacts to potentially utilised micro-habitat features and breeding sites. Recorded micro-habitat features, where present include:

- Hollow-bearing trees;
- Dead standing trees;
- Hollow logs;
- Termite mounds;
- Woody debris;
- Surface rocks;
- Gilgais;
- Soil cracks / cracking clay;
- Rocky outcrops, crevices, overhangs and caves;
- Mistletoes;
- Nests;
- Animal burrows;
- Watercourses, wetlands and dams (including proximity); and
- Any other significant habitat features, or values present, such as dense leaf litter, heavily decorticated bark, dense grass/shrub shelter, seeding grass cover, fruiting plants, nectar and pollen producing plants and koala food trees.

2.4 Threatened fauna surveys

As areas confirmed as habitat for threatened species have been effectively avoided by The Footprint (with the exception of koala dispersal habitat and echidna habitat), the area required to be surveyed was minimal.

Active fauna surveys of all known, likely or potential threatened fauna species are to be undertaken where suitable potential habitat is mapped or found to be present within The Footprint (refer to the constraints mapping and the habitat features listed in Appendix A of the ECPPFD). Active fauna searches as per Table 1, Appendix A of the ECPPFD include scanning trees, the ground and habitat features; overturning rocks, logs and other woody debris; searching under peeling bark; raking leaf litter and soil at the base of trees; and flushing birds from dense shrubs and groundcover.

Invasive active searches were not undertaken in the 30 m buffer of The Footprint within mapped constraint areas, given no impact is expected and active searches outside of The Footprint would be detrimental to the fauna species habitat. Instead of invasive searches in the 30 m buffer, surveys included incidental observations and scat and sign searches.

2.5 Koala dispersal habitat

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

Areas identified were highlighted on GIS mapping for further identification and field verification. Additional points were collected in the field where applicable. All tree ID numbers have been provided in individual maps of the area surveyed and further details provided in the results.

Canopy cover was measured by walking the dripline of trees located in koala dispersal areas using a sub-10 cm accuracy handheld Trimble GPS unit. The diameter at breast height (DBH) of each of the abovementioned trees was measured and height data was collected. Where denser regrowth was present and canopy cover of individual trees could not be distinguished, the canopy cover of the clump of trees was walked at the outer dripline and average height assessed. Thorny tree species which are not able to be climbed by koala (i.e. desert lime (*Citrus glauca*)) were noted in the field but excluded from the final koala tree canopy cover calculations.

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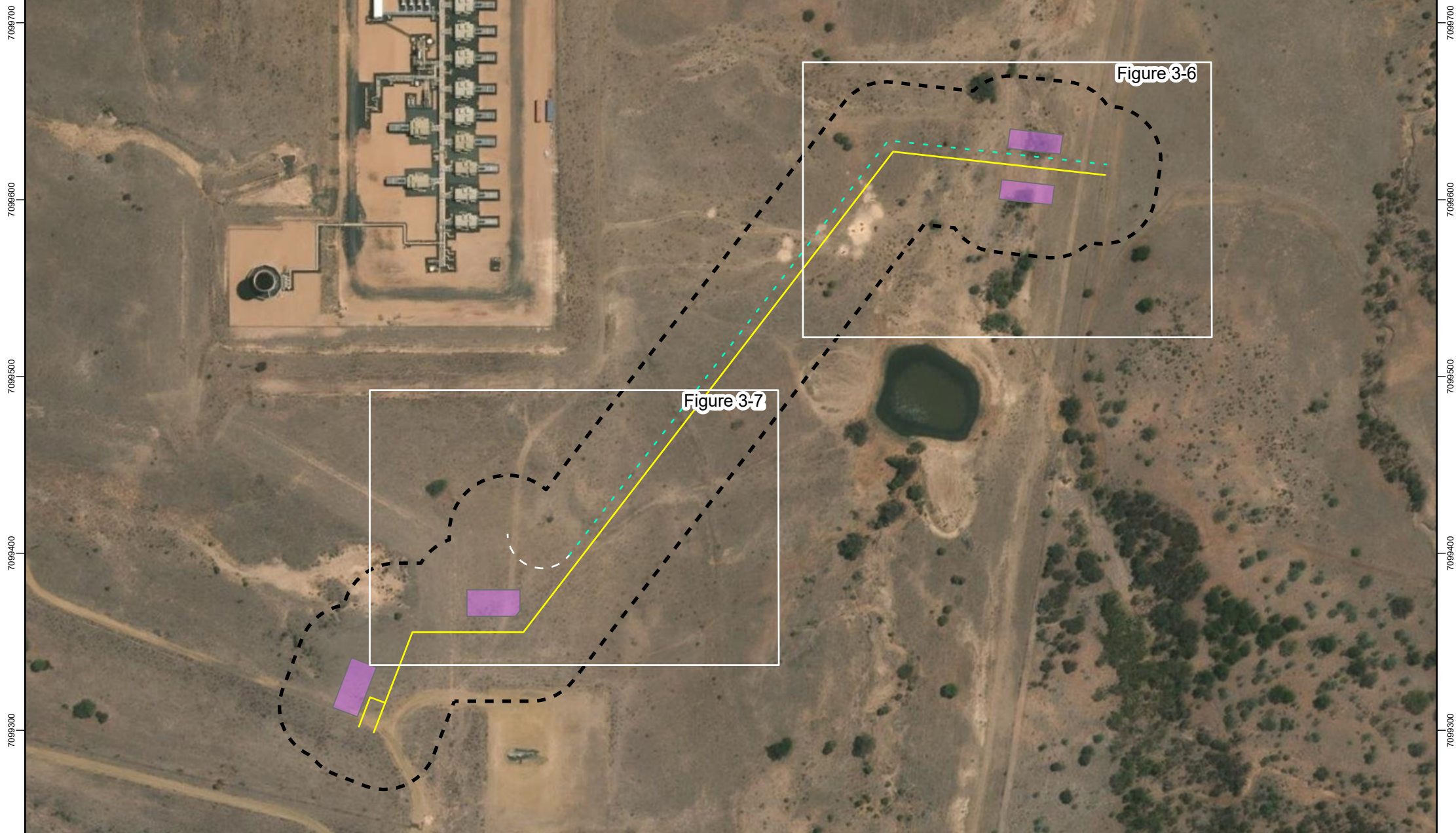


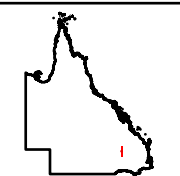
Figure 3-6

Figure 3-7

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Figure 2-1
 Sundown Overview

- Proposed ROW Extension Area
- Ecological Survey Area
- Proposed RoW Access Track
- Proposed Gas Pipeline
- Proposed Access Track
- Tree Verification Map Areas



REVISION	AUTHOR	REVIEWER	DATE
0	JS	BO	12/02/2025

GDA2020 MGA Zone 55
 Scale: 1:2,800

N

0 50 100
Metres

3 Results

The Sundown property has been historically cleared for cattle grazing and is dominated by cleared pasture lands of introduced pasture grasses, with scattered patches of regrowth brigalow trees (*Acacia harpophylla*) as well as remnant and regrowth poplar box (*Eucalyptus populnea*). Individual and small patches of paddock trees of various ages and species were scattered across the cleared pasture (Figure 3-1). A small farm dam was present to the south-east of The Footprint.

A small patch of young regrowth *Acacia harpophylla* was observed to the west of The Footprint however this will not be impacted by the works (Figure 3-2).



Figure 3-1 Cleared paddock



Figure 3-2 Young *Acacia harpophylla* regrowth adjacent to The Footprint

3.1 Regional Ecosystems and Threatened Ecological Communities

No mapped constraints areas occurred within the disturbance footprint or 30 m buffer, and no additional areas were identified in the field.

3.2 Targeted threatened flora surveys

No constraints areas for Belson's panic (*Homopholis belsonii*), red soil woolly wrinklewort (*Rutidosis lanata*) and winged nightshade (*Solanum stenopterum*) were located in proximity (100 m) to The Footprint.

3.3 Opportunistic fauna surveys and habitat assessment

Active searches were not required within The Footprint as no searchable fauna habitat was present (either mapped as constraints or identified during the survey). Several habitat features were recorded during the surveys, including tree hollows and log piles (Figure 3-3). A full list of features identified is shown in Appendix B.



Figure 3-3 Examples of habitat features including hollows and log piles

No threatened fauna species were observed in suitable potential habitat within 30 m of The Footprint. Invasive searches were not undertaken in this area as it is recommended a fauna spotter be brought in to preclear and spot the clearing of habitat features. If invasive active searches had been undertaken on habitat features in this patch, fauna would be disturbed, and habitat may be unnecessarily destroyed.

Opportunistic sightings were recorded across The Footprint and 30 m buffer. Seven species of fauna (all birds) were recorded during the surveys (Appendix A).

3.4 Weeds

Restricted invasive species under the Biosecurity Act 2014 present within The Footprint included scattered *Opuntia stricta* and *Opuntia tomentosa*. An additional seven weed species were also noted, see Appendix C for a list of weeds identified in The Footprint.

3.5 Erosion

Minor erosion was noted along to the north as well as sections the slope in the middle section of The Footprint, some leading into the nearby farm dam. These should be mitigated and monitored during construction and operation of infrastructure.

- Erosion scald area to west of The Footprint, approximately 130 m long by 40 m wide (-26.198136, 149.790344) (Figure 3-4)
- Minor rill erosion 1, approximately 40 m long by 0.5 m wide (-26.197763, 149.791498) (Figure 3-5)
- Minor rill erosion 2, several small rill erosions breaking through contour bank (-26.196956, 149.791889)



Figure 3-4 Scald erosion along The Footprint

















Figure 3-5 Minor erosion rills along The Footprint




3.6 Ground-truthed koala dispersal trees

Table 3-1 provides the results including canopy cover, height and DBH of the trees assessed in the field in koala dispersal areas. All trees were assessed and, where determined they could be avoided (through underground boring or realignment), have been marked up as “retain” and will be avoided during construction. Trees unable to be avoided have had their canopy cover assessed and calculated under disturbance limits. Mapping of each location (Desktop ID) are shown in Figure 3-6 to Figure 3-7.

Table 3-1 Dispersal habitat trees

Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
FebSD01	21.52	<i>Acacia harpophylla</i>	13	5	Retain	
FebSD02	11.93	<i>Acacia harpophylla</i>	15	5	Retain	
FebSD03	72.64	<i>Acacia excelsa</i>	15	6	Retain	
FebSD04	214.11	<i>Eucalyptus populnea</i>	45	15	Retain	
FebSD05	10.62	<i>Acacia excelsa</i>	17	7	Remove	
FebSD06	214.98	<i>Eucalyptus populnea</i>	55	17	Remove	
FebSD07	171.36	<i>Eucalyptus populnea</i>	55	17	Remove	

Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
FebSD08	127.64	<i>Eucalyptus populnea</i>	50	17	Retain	
FebSD09	9.67	<i>Eucalyptus populnea</i>	20	7	Retain	
FebSD10	12.96	<i>Eucalyptus populnea</i>	15	8	Retain	
FebSD11	26.96	<i>Atalaya hemiglauca</i>	30	8	Retain	
FebSD12	8.10	<i>Atalaya hemiglauca</i>	20	6.5	Retain	
FebSD13	20.29	<i>Acacia sp.</i>	15	5	Retain	
FebSD14	11.27	<i>Acacia excelsa</i>	10	4	Retain	

Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
FebSD15	20.09	<i>Acacia excelsa</i>	15	7	Retain	
FebSD16	17.40	<i>Acacia excelsa</i>	18	8	Retain	
FebSD17	17.75	<i>Acacia sp.</i>	30	9	Retain	
Remove area:	Total (sqm)	396.95				
	Total (ha)	0.04				
Retain area:	Total (sqm)	592.32				
	Total (ha)	0.06				

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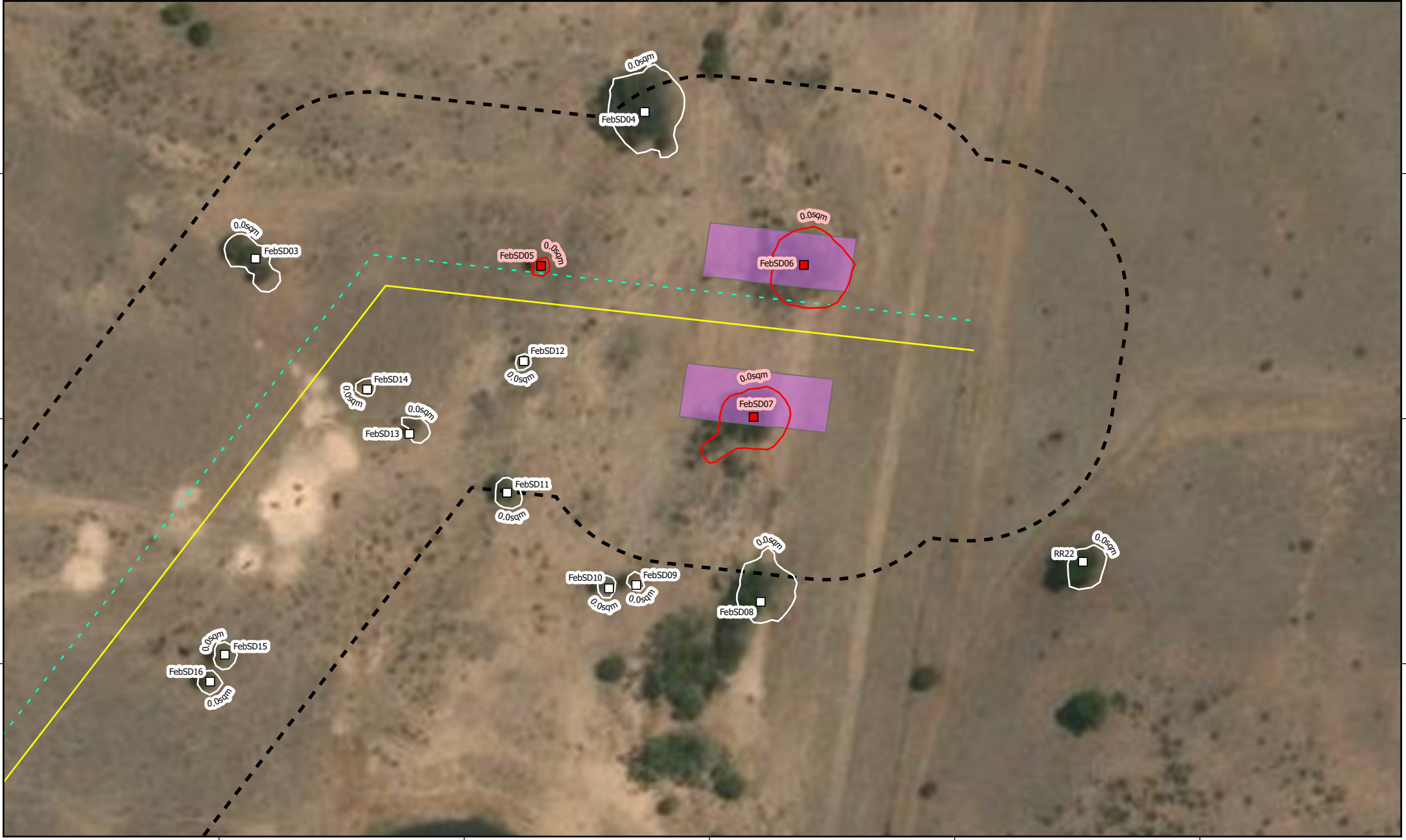
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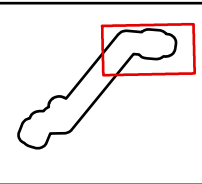
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Figure 3-6
 Ground-Truthed Tree Extents

	Ecological Survey Area		Remove		Remove
	Proposed ROW Extension Area		Retain		Retain
	Proposed RoW Access Track				
	Proposed Gas Pipeline				



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0	JS	BO	13/02/25

GDA2020 MGA Zone 55
 Scale: 1:1,000

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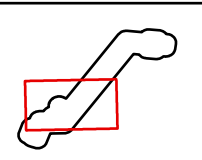
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Figure 3-7
 Ground-Truthed Tree Extents

	Ecological Survey Area		Proposed ROW Extension Area		Ground-Truthed Tree Centrepoint		Retain		Dripline Extent		Retain
	Proposed Access Track		Proposed Gas Pipeline		Retain		Retain		Proposed RoW Access Track		



REVISION	AUTHOR	REVIEWER	DATE
0	JS	BO	13/02/25

GDA2020 MGA Zone 55
 Scale: 1:1,000

4 Discussion

The surveys on the Sundown property found that the projects' impacts to koala habitat or dispersal habitat would be minimal with a total of 0.04 ha to be potentially cleared. The majority of The Footprint is located within predominantly cleared agricultural areas and has actively avoided major remaining fragments of habitat and potential dispersal trees. In all cases, trees are retained within close proximity to those that are unable to be avoided and the clearing of 0.04 ha is unlikely to have a significant effect on the ecological function of dispersal habitat on the property for koalas. Retained trees in proximity to The Footprint total 0.06 ha, showing that avoidance has been implemented as far as possible.

No threatened flora were encountered during the survey and no TECs were present within the disturbance footprint. No remnant or HVR regulated vegetation, potential threatened fauna habitat or environmentally sensitive areas (ESAs) are present within the disturbance footprint.






Precautions should be taken to avoid exacerbating erosion noted in proximity to the footprint.


The area is known echidna and potential koala dispersal area and other least concern species were observed in the area during the surveys. It is recommended that a qualified fauna spotter catcher should undertake a pre-clearance survey across the disturbance footprint to identify habitat features prior to clearing and be present during clearing works to check habitat features and relocate fauna, and where possible habitat features in order to minimise impacts to fauna.

Appendix A – Fauna records

Common Name	Scientific Name
Australasian grebe	<i>Tachybaptus novaehollandiae</i>
Australian wood duck	<i>Chenonetta jubata</i>
Grey teal	<i>Anas gracilis</i>
Little pied cormorant	<i>Microcarbo melanoleucos</i>
Plumed whistling-duck	<i>Dendrocygna eytoni</i>
White-winged fairy-wren	<i>Malurus leucopterus</i>
Willie wagtail	<i>Rhipidura leucophrys</i>

Appendix B – Habitat features

Habitat feature	Latitude and Longitude	Photo
Decorticating bark	-26.197847, 149.791267	
Log pile	-26.196007, 149.793405	
Log pile	-26.195728, 149.793539	
Log pile	-26.195812, 149.793840	
Small hollows	-26.196027, 149.793898	

Habitat feature	Latitude and Longitude	Photo
Small hollows	-26.196368, 149.793907	

Appendix C – Weeds recorded

Scientific name	Common Name	Status	Abundance
<i>Bidens pilosa</i>	Cobbler's Pegs	*	Rare
<i>Chloris gayana</i>	Rhodes grass	*	Occasional
<i>Cirsium vulgare</i>	Spear thistle	*	Rare
<i>Eragrostis trichophora</i>	Hairyflower Lovegrass	*	Frequent
<i>Erigeron bonariensis</i>	Flaxleaf fleabane	*	Occasional
<i>Opuntia stricta</i>	Common prickly pear	Restricted - Category 3	Rare
<i>Opuntia tomentosa</i>	Velvety tree pear	Restricted - Category 3	Rare
<i>Urochloa mosambicensis</i>	Sabi grass	*	Occasional
<i>Vachellia farnesiana</i>	Mimosa bush	*	Rare