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ATLAS Stage 3 – ATLAS Pre-clearance Survey Report

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Senex

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Table of contents

Glossar	ry of Terms	3
1 Ir	ntroduction	4
1	1 Project background	4
1		
2 N	Methodology	5
2		
2		
2		
2.4		
2		
3 R	Results	g
3	1 Regional Ecosystems and Threatened Ecological Communities	<i>g</i>
3		
3		
3.4	- //	
3	5 Ground-truthed koala dispersal trees	11
7 D	Discussion	29
Append	dix A – Fauna records	31
Table 3		11
Figur	res	
Figure 2	2-1 The Glenhaven property – Overview Map	8
	3-1 Non remnant pasture grass paddocks	
	3-2 Scattered paddock trees	
Figure 3	3-3 Brigalow patch to be under-bored to avoid impact to constraints map	ped area9
	3-4 Patch of dead trees, likely pelleted	
	3-5 Log piles	
Figure 3	3-6 Glenhaven – Koala Tree Map 1	16
	3-7 Glenhaven - Koala Tree Map 2	
	3-8 Glenhaven - Koala Tree Map 3	
	3-9 Glenhaven - Koala Tree Map 4	
Figure 3	3-10 Glenhaven - Koala Tree Map 5	20
	3-11 Glenhaven - Koala Tree Map 6	
Figure :	3-12 Glenhaven - Koala Tree Map 7	22
	3-13 Glenhaven - Protected Plant Search Map 1	
	3-14 Glenhaven – Protected Plant Search Map 2	
	3-15 Glenhaven – Protected Plant Search Map 3	
	3-16 Glenhaven – Protected Plant Search Map 4	
	3-17 Glenhaven – Protected Plant Search Map 5	
	7-1 Examples of adjacent vegetation avoided by disturbance footprint	
_	7-2 Vegetation to be under-bored	
_	7-4 Third entrance off Weldons Road	
_		



Glossary of Terms

Acronym	Description
ATP	Authority to Prospect
ECPPFD	Environmental Constraints Protocol for Planning and Field Development
ESA	Environmentally sensitive areas
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
ha	Hectares
m	Metres
MSES	Matter of State Environmental Significance
MNES	Matter of National 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 Authority to Prospect (ATP) 2059, Petroleum Lease (PL) 445, the northern portion of PL209 and parts of PL1037 in the central part of the Surat Basin, Queensland (Senex, 2024). This report is provided to ensure compliance with the following 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.

This report is also provided to help ensure compliance with Conditions F2-13 of Environmental Authority (P-EA-100511614).

This report provides the results of pre-clearance survey on wells and gathering Infrastructure (well pads, gas and water gathering lines and access tracks) (the footprint) and a 30 m buffer within the Glenhaven property: Lot 2 Plan RP123884.

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 (ECPPFD) document (Senex, 2024). The ECPPFD provides a framework for identifying, assessing and managing potential impacts to Matters of National Environmental Significance (MNES) and Matter of State Environmental Significance (MNES) associated with development of the Atlas Stage 3 Gas Project. Data collected during the pre-clearance surveys will be used by Senex to ensure:

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

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



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

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 ECPPFD.

2 Methodology

An Ausecology principal ecologist (Suitably qualified) and ecologist conducted field surveys on foot on the 7th of July 2024 and 24th August 2024 with the Senex team to determine any further impacts not already identified to be avoided by re-aligning gas gathering, access tracks and well pads. The area surveyed and mapped in this report include the Glenhaven property as shown in Figure 2-1.

2.1 Regional Ecosystem assessment and Threatened Ecological Communities

2.1.1 Desktop assessments

Baseline assessments of the vegetation communities, including ground-truthed regional ecosystem (GTRE) mapping and threatened ecological community surveys were conducted to an acceptable level of detail and covered the relevant sections of the Field Development Area (ECPPFD). These assessments have been reviewed as part of the desktop assessment prior to the preclearance surveys. Given the level of detail in these reports, no further desktop analysis has been conducted.

2.1.2 Regional Ecosystem assessment

During preclearance 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 ground-truthed regional ecosystem 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 method and if a species is encountered, a population survey would be 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.

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ATLAS Stage 3 – ATLAS Pre-clearance Survey Report August 2025



Potentially occurring threatened species in the area as per the ECPPFD are Belson's panic (*Homopholis belsonii*), red soil woolly wrinklewort (*Rutidosis lanata*) and winged nightshade (*Solanum stenopterum*). Random meanders walked in the constraint areas are shown in Figure 3-13 to Figure 3-18.

2.3 Fauna habitat assessment

Senex has committed to not clearing any areas confirmed as habitat for threatened species (ECPPFD), apart from Koala dispersal habitat and Echidna 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 a 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 preclearance surveys) to refine mapped habitat areas and survey and record micro-habitat features and breeding sites in the mapped constraint habitat to facilitate avoidance and minimisation of impacts to potentially utilised micro-habitat features and breeding sites. Recorded micro-habitat features, where present, included:

- 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 decorticating 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 (apart from Koala dispersal habitat and Echidna habitat) and therefore the area required to be surveyed is 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 proposed disturbance 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.

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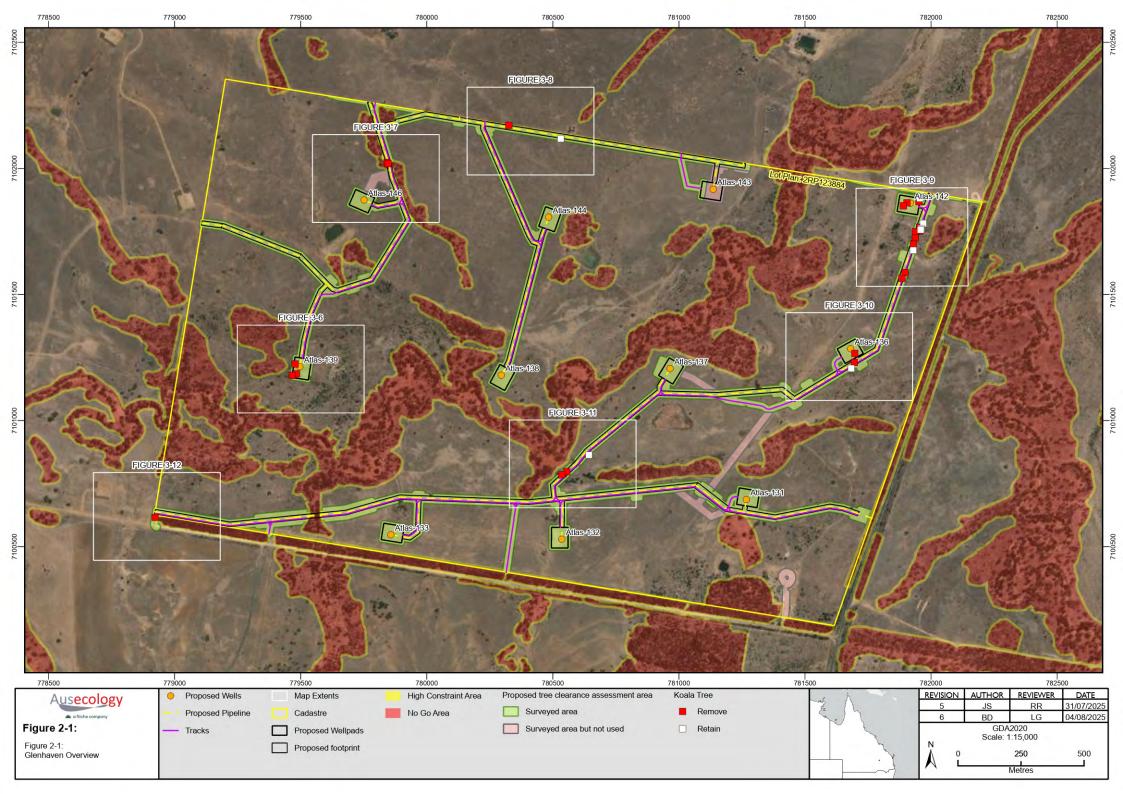
Invasive active searches were not undertaken in the 30m buffer of the disturbance footprint within mapped constraint areas, given no impact is expected and active searches outside of the footprint would be detrimental to the fauna species habitat. Instead of invasive searches in the 30 m buffer, surveys 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, analyse 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 (Figure 3-6 to Figure 3-11) and Table 3-1 identifying each species in the results.

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





3 Results

The Glenhaven property has been historically cleared for cattle grazing and is dominated by cleared pasture lands with some native species but mainly introduced pasture grasses, with scattered small patches of remnant and regrowth woodlands. A corridor of remnant vegetation consists along Wandoan Creek that runs throughout the property consisting of poplar box (Eucalyptus populnea), forest red gum (Eucalyptus tereticornis) and some patches of Brigalow (Acacia harpophylla). Individual and small patches of paddock trees of various ages and species were also scattered across cleared pastures along with areas where some vegetation have been pelleted (Figure 3-1 to Figure 3-4).





Figure 3-1 Non remnant pasture grass paddocks

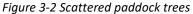






Figure 3-3 Brigalow patch to be under-bored to avoid Figure 3-4 Patch of dead trees, likely pelleted impact to constraints mapped area

3.1 **Regional Ecosystems and Threatened Ecological Communities**

Where mapped constraint areas occurred within the disturbance footprint or 30 m buffer, these were assessed in the field to ensure they aligned with the mapping. A patch of vegetation near the 30 m buffer was reassessed to RE11.9.5 from 11.3.1. There are not enough alluvial influences at this patch as it is a drainage line through landzone 9. This does not have any implications for the project since any impacts have been avoided through re-alignment of the gathering lines. The survey also confirmed that the proposed disturbance areas do not impact on any listed TECs.



3.2 Targeted threatened flora surveys

No Belson's panic (Homopholis belsonii), red soil woolly wrinklewort (Rutidosis lanata) and winged nightshade (Solanum stenopterum) were identified within the areas mapped as constraints for these species during targeted threatened flora surveys. The disturbance footprint is impacted by grazing and hence these threatened species are not expected to be present within the footprint. Some areas outside of the footprint but within the 30m buffer meet the remnant status and are in better condition than the surrounding non-remnant areas, but these areas also did not contain any of the listed threatened flora species.

3.3 Opportunistic weed records

Weeds species observed on the property were recorded opportunistically during the surveys. Species identified included:

- Harrisia cactus (Harrisia martini)
- Mexican poppy (Agremone ochroleuca)
- Prickly pears (Opuntia spp)

3.4 Opportunistic fauna surveys and habitat assessment

Active searches were not required within the disturbance footprint as no searchable fauna habitat was present (either mapped as constraints or identified during the survey). Two habitat features (other than the koala dispersal trees) was recorded during the surveys, log piles located at -26.185139, 149.806963 and -26.186937, 149.790889, however no fauna were detected (Figure 3-5).

No threatened fauna species were observed in suitable potential habitat within 30 m of a proposed disturbance footprint. One patch of brigalow is located within 30 m of the disturbance footprint, however, impacts to the patch have been avoided. Invasive searches were not undertaken in this patch since none of the coarse woody debris, trees with loose bark or areas with leaf litter will be impacted by the disturbance footprint. If invasive active searches had been undertaken on habitat features in this patch, fauna would be disturbed, and some habitat may be unnecessarily destroyed.

Opportunistic sightings were recorded across the disturbance footprint and 30 m buffer. Forty-one species of fauna were recorded during the surveys (Appendix A).





Figure 3-5 Log piles



3.5 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) they have been marked up as "retain" and will be avoided during construction. Any trees unable to be avoided had their canopy cover assessed and calculated under disturbance limits. Mapping of each location (Desktop ID) are shown in Figure 3-6 to Figure 3-12.

Table 3-1 Dispersal habitat trees

Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
RR34	38.9	Acacia harpophylla (x2)	15	6.6	Remove	
RR36	162.3	Owenia acidula	52	7.8	Remove	
RR37	107.2	Casuarina cristata	24	8.5	Retain	
RR42	73.2	Eucalyptus populnea	49	9.4	Remove	
RR43	15.8	Acacia excelsa	19	4.6	Remove	



Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
RR44	108.4	Eucalyptus populnea	36	9.2	Remove	
RR45	45.5	Eucalyptus populnea	35	10	Retain	
RR46	18.7	Corymbia tessellaris	16	6.8	Retain	
RR47	6.9	Corymbia tessellaris	18	7.8	Remove	
RR48	6.6	Corymbia tessellaris	16.5	5.2	Retain	
RR49	23.7	Eucalyptus populnea	14	1.2	Retain	
RR50	54.7	Acacia salicina (x2)	25.5	7.6	Remove	



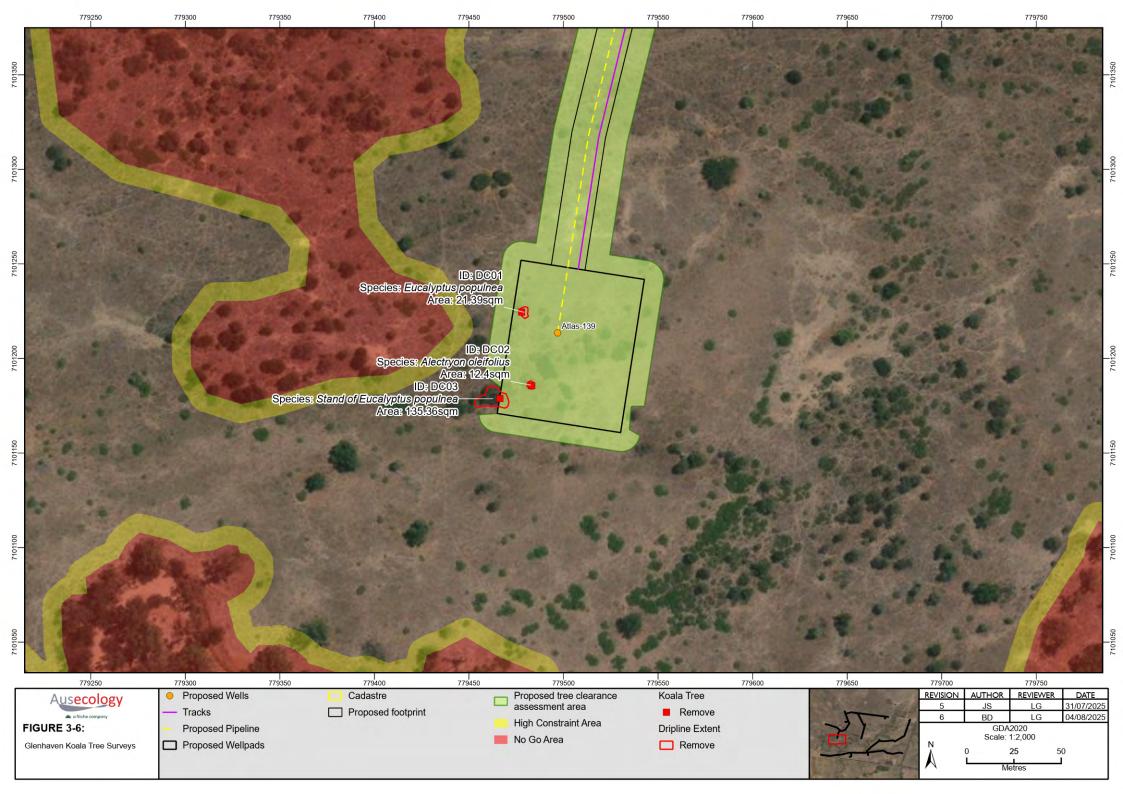
Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
RR51	106	Eucalyptus populnea (x14)	16	6	Remove	
RR52	127.1	Eucalyptus populnea 4x, Acacia salicina 1x, Grevillea striata 1x	28	6.6	Remove	
RR53	23.8	Eucalyptus populnea	23	7	Remove	
RR54	22.3	Corymbia tessellaris	35	12	Retain	
RR55	50.8	Acacia salicina	20	5	Remove	
RR56	32.1	Acacia excelsa	17	5.6	Remove	
RR57	72.3	Acacia salicina	42.5	7	Remove	

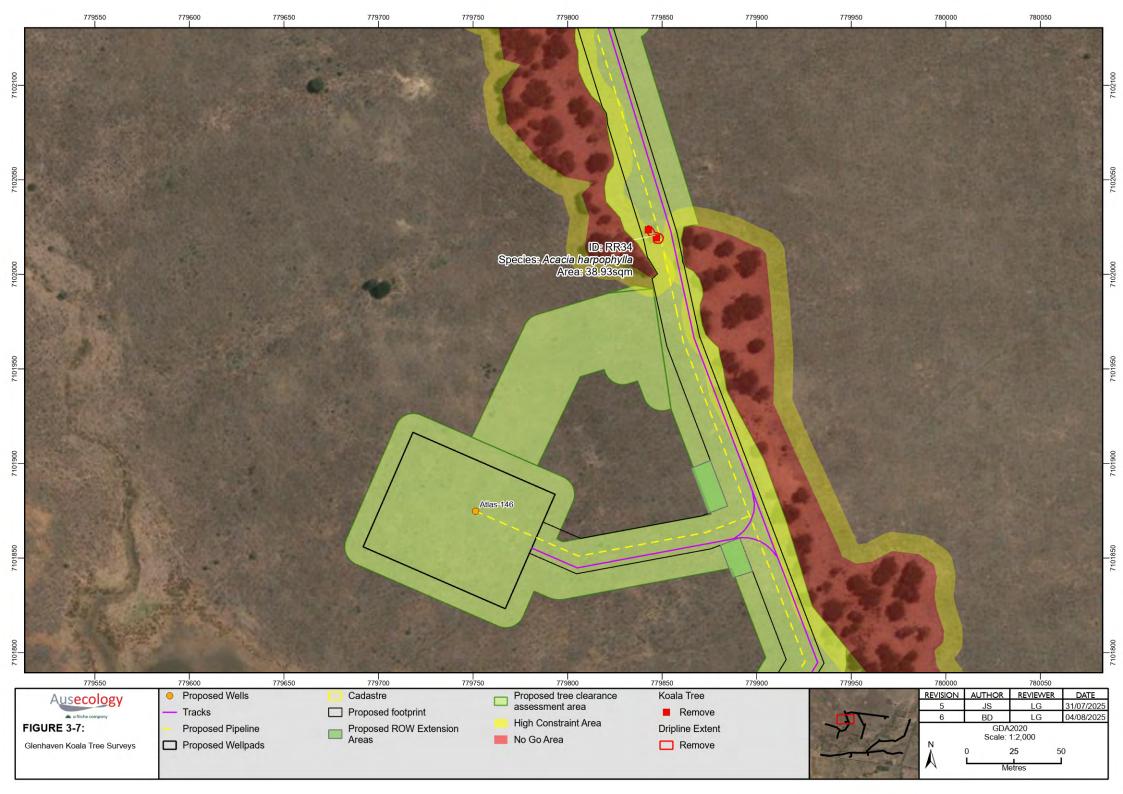


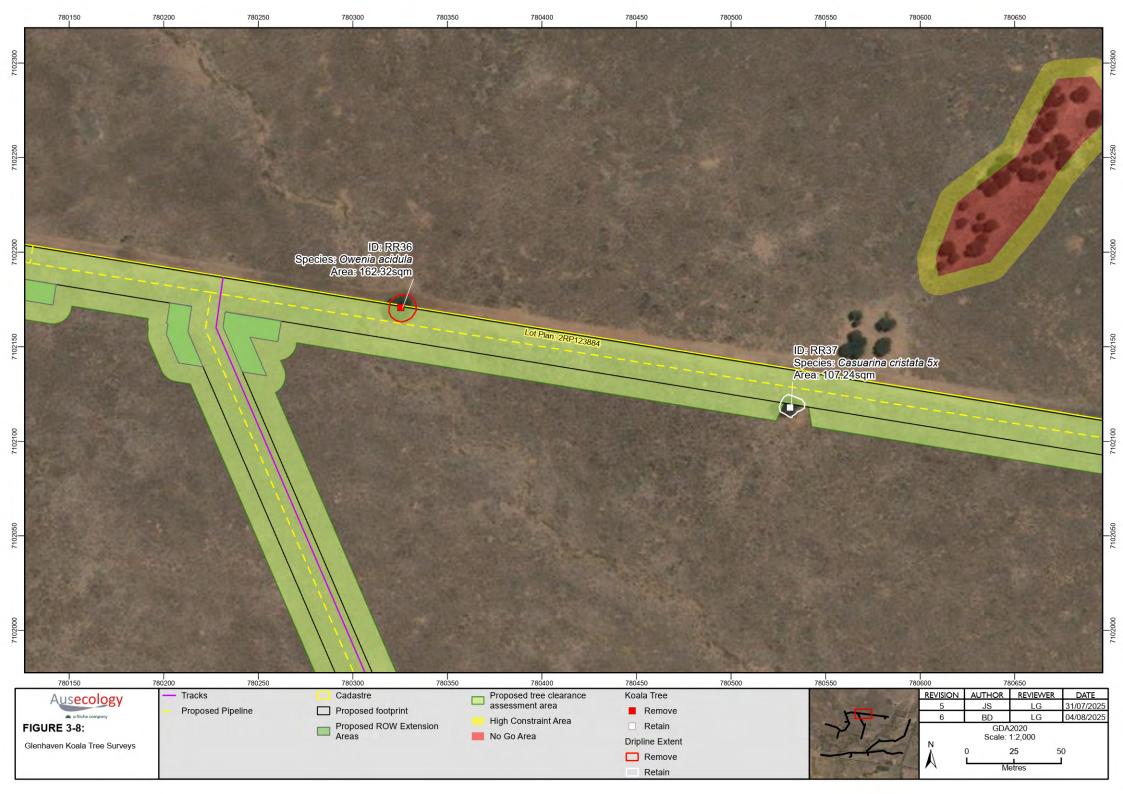
Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
RR58	78.8	Eucalyptus populnea (x2)	47	12.2	Remove	
RR59	78.4	Acacia salicina	32.5	7.2	Retain	
RR60	252.7	Brachychiton populneus	96	17	Retain	
RR61	23.28	Eucalyptus populnea	19	9.2	Remove	
RR62	17.8	Casuarina cristata	15	4.4	Remove	
DC01	21.4	Eucalyptus populnea	15.5	8.2	Remove	
DC02	12.4	Alectryon oleifolius	18	6.2	Remove	

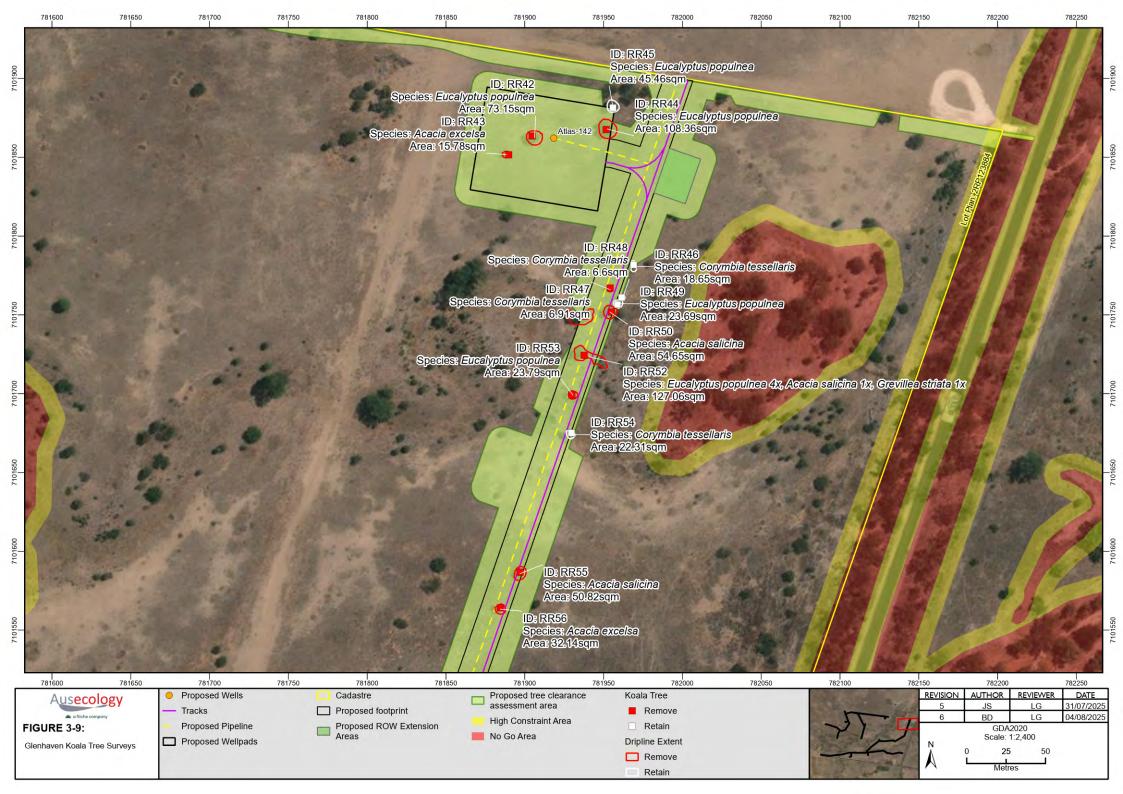


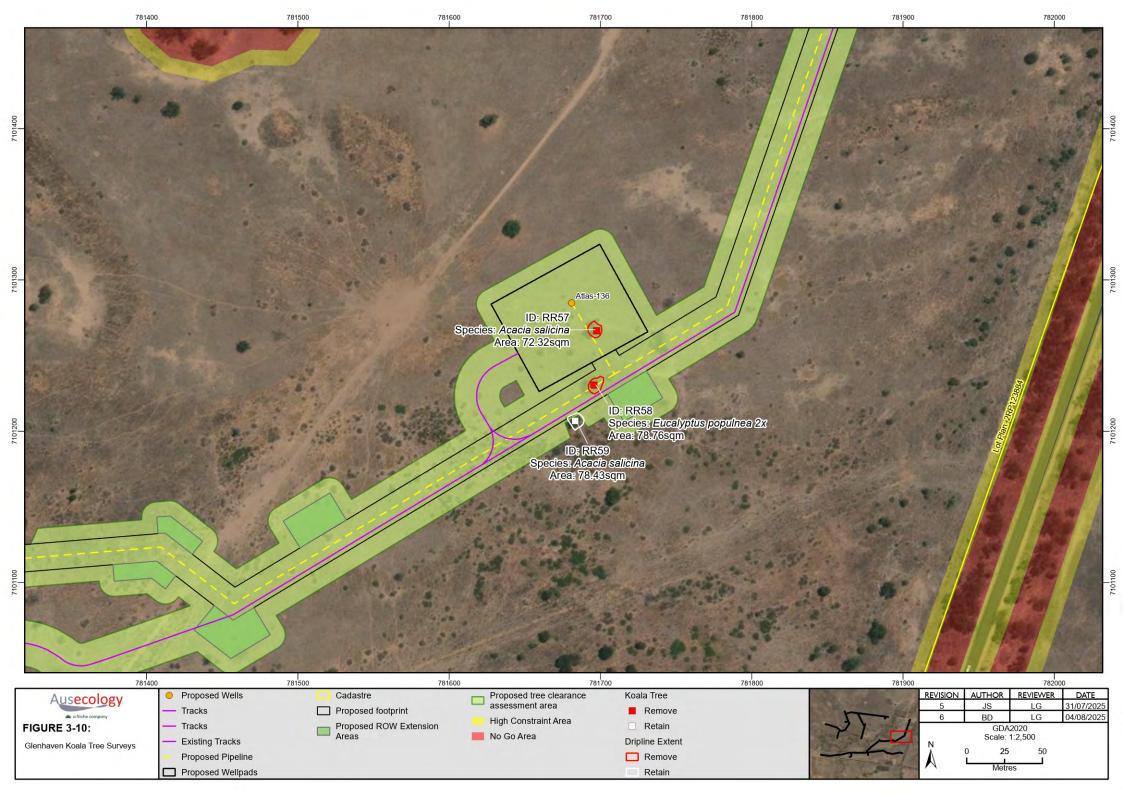
Location (Desktop ID)	Area (sqm)	Spe	Species		Height (m)	Action	Photo	
DC03	135.4	Euc	Eucalyptus populnea		8.9	Remove		
Glen001	7.5	Aca	Acacia harpophylla		4.4	Remove		
Domeye	Total sqm 1168.8 m ²							
Remove	Total ha		0.117 ha					
Retain	Total sqm		555.1m ²					
Ketain	Total ha		0.06 ha					

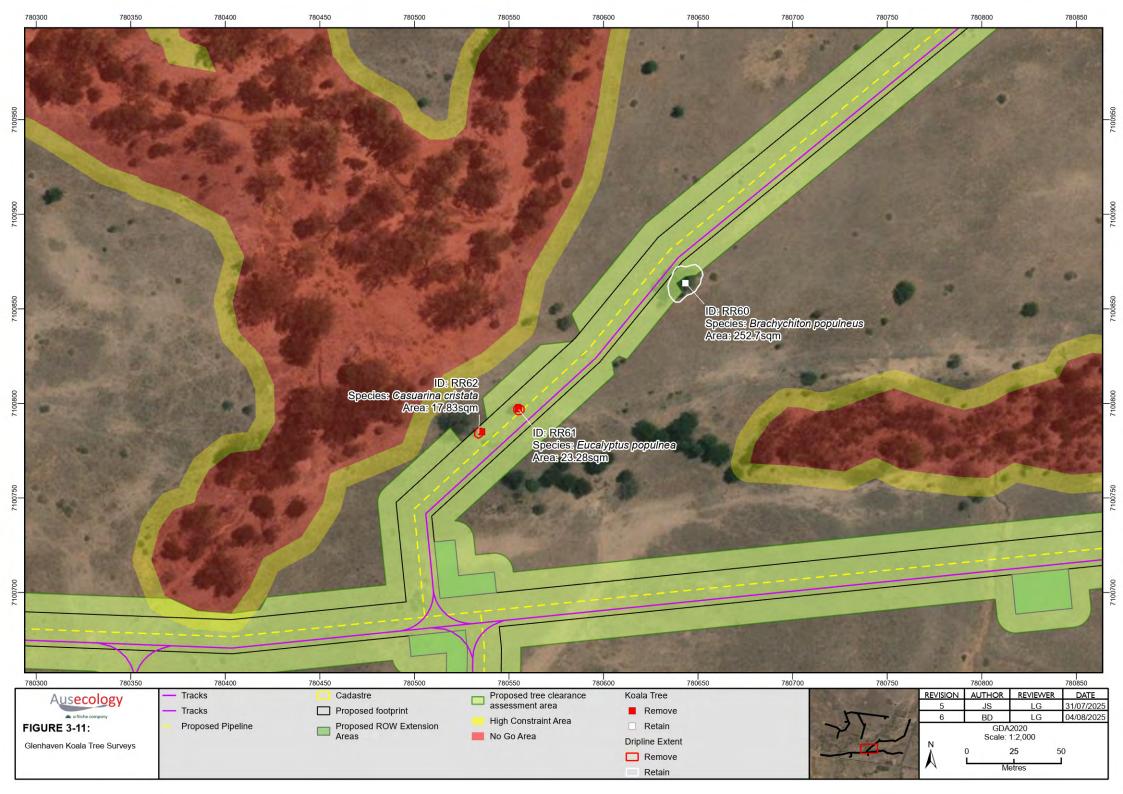


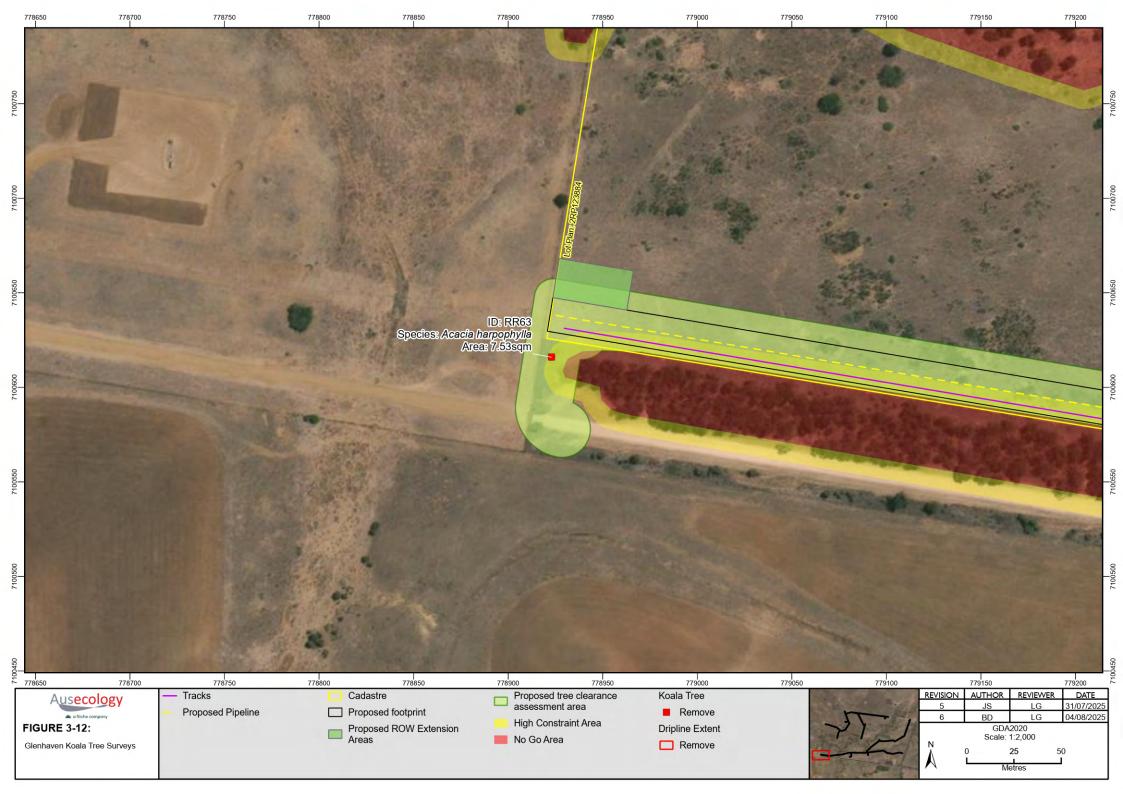


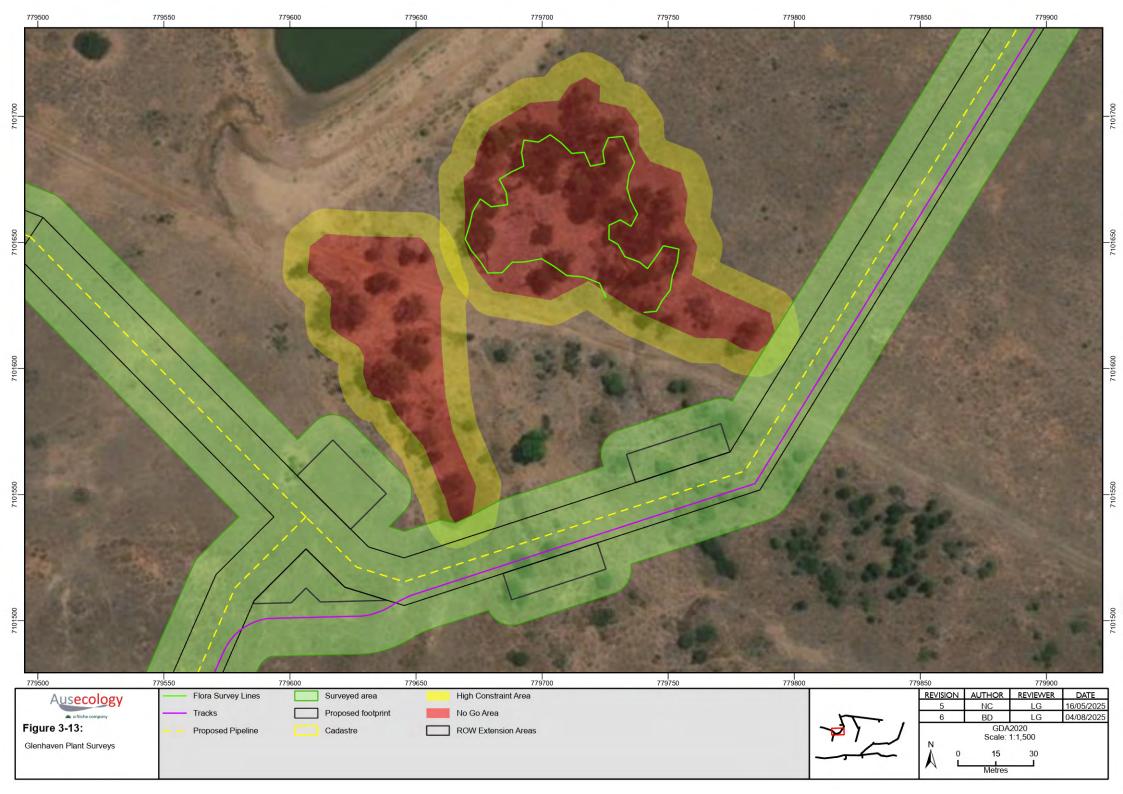


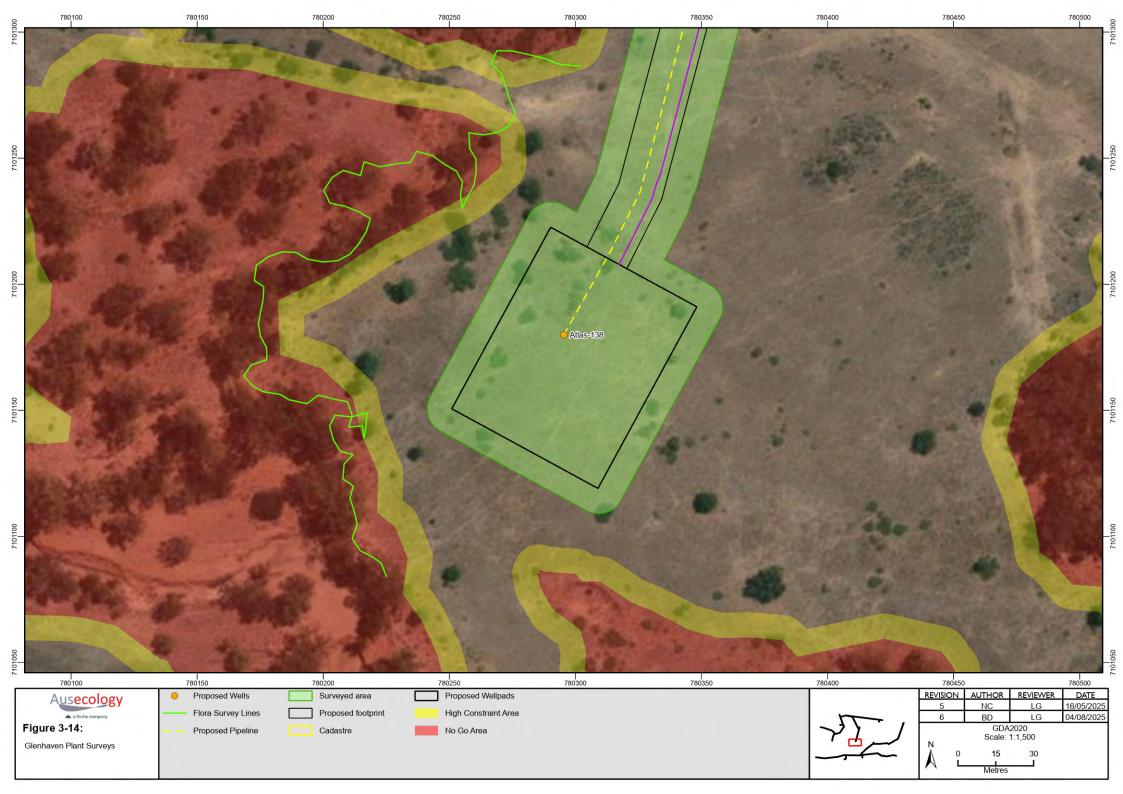


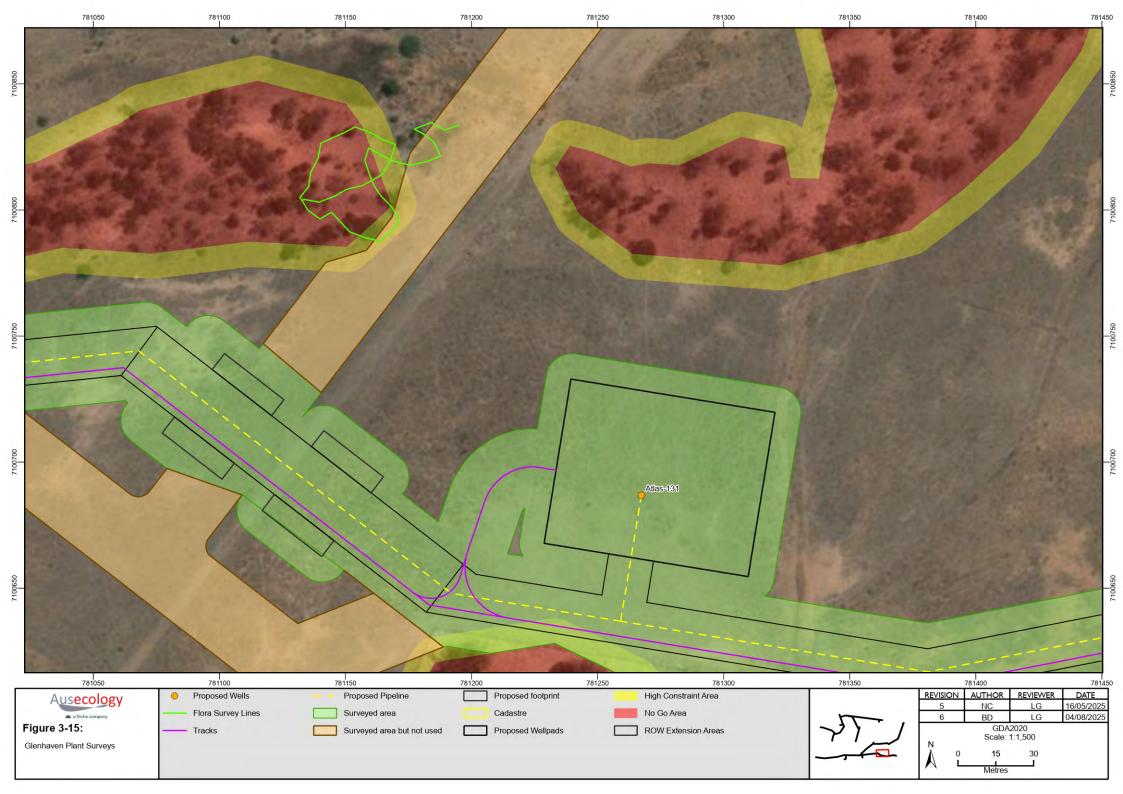


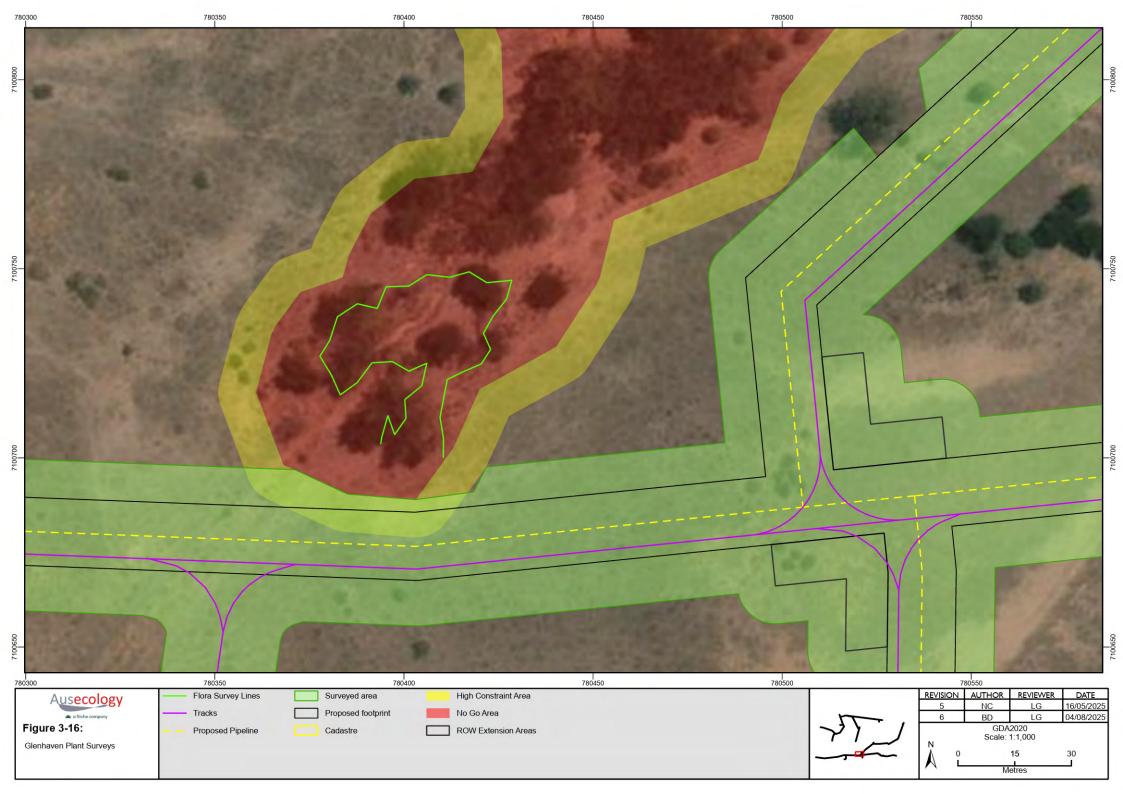




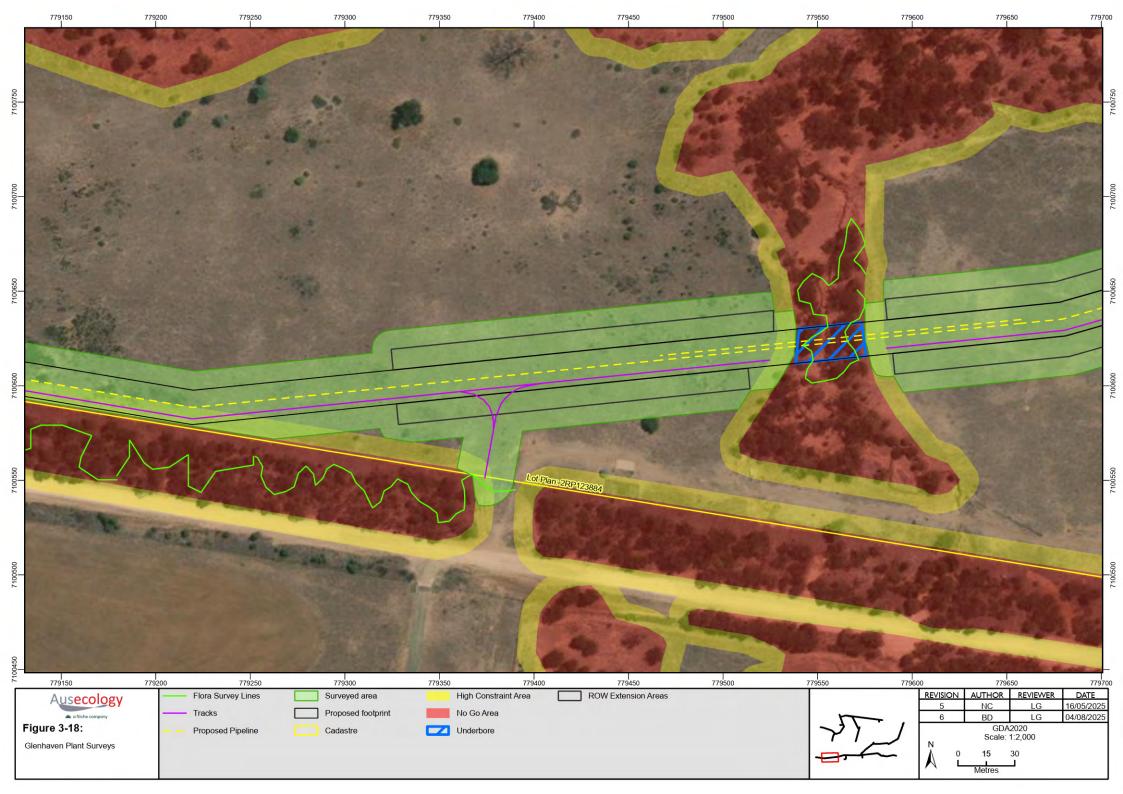














7 Discussion

The surveys on the "Glenhaven" property found that the project impacts to koala dispersal habitat would be minimal, with a total of 0.071 ha (708.56 m²) to be potentially cleared. Most of the impact footprint is located within predominantly cleared agricultural areas and Senex has actively avoided patches of remnant and regrowth vegetation, as well as individual paddock trees, resulting in retaining 0.06 ha (or 555.09 m²) of koala dispersal habitat. In all cases, trees are retained within proximity to those that are unable to be avoided and the clearing of 0.071 ha is unlikely to have a significant effect on the ecological function of dispersal habitat on the property for koalas. Adjacent areas of dispersal habitat avoided are shown in Figure 7-1.

Threatened flora searches found no threatened species within or in proximity to the impact footprint. No threatened flora were encountered during the survey and no TECs are present within the disturbance footprint or within 30m of the disturbance footprint. During surveys weed species were found on the property including Harrisia cactus (*Harrisia martini*), Mexican poppy (*Agremone ochroleuca*) and *Opuntia spp*. No remnant or HVR regulated vegetation, potential threatened fauna habitat or environmentally sensitive areas (ESAs) are present within the disturbance footprint, other than where an under-bore will be carried out shown in Figure 7-2. Access from Weldons Road shows minimal impact to surrounding vegetation on road reserves as per Figure 7-3. An additional assessment was undertaken in June 2025 along Weldons Road for a third entrance which was also determined to have minimal impact apart from one koala dispersal tree (Glen001), and the nearby vegetation boundary was re-verified but does not require changing (Figure 7-4).

The area is known echidna and 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 undertake a preclearance survey across the disturbance footprint to identify habitat features prior to clearing. The spotter catcher should be present during clearing works to check habitat features and relocate fauna, and where possible habitat features to minimise impacts to fauna.





Figure 7-1 Examples of adjacent vegetation avoided by disturbance footprint







Figure 7-2 Vegetation to be under-bored





Figure 7-3 Entrances from Weldons Road



Figure 7-4 Third entrance off Weldons Road



Appendix A – Fauna records

Results of the fauna observed during the surveys are included in the table below.

Scientific name	Common name	Non-native (*)
Acanthiza chrysorrhoa	Yellow-rumped Thornbill	
Anthus novaeseelandiae	Australasian Pipit	
Aprosmictus erythropterus	Red-winged Parrot	
Aquila audax	Wedge-tailed Eagle	
Cacatua galerita	Sulphur-crested Cockatoo	
Cisticola exilis	Golden-headed Cisticola	
Coracina novaehollandiae	Black-faced Cuckoo-shrike	
Corvus orru	Torresian Crow	
Coturnix ypsilophora	Brown Quail	
Cracticus nigrogularis	Pied Butcherbird	
Cracticus tibicen	Australian Magpie	
Cryptoblepharus metallicus	Metallic Snake-eyed Skink	
Cryptoblepharus pulcher	Elegant Snake-eyed Skink	
Dacelo novaeguineae	Laughing Kookaburra	
Dicaeum hirundinaceum	Mistletoebird	
Elanus axillaris	Black-shouldered Kite	
Eolophus roseicapillus	Galah	
Falco berigora	Brown Falcon	
Falco cenchroides	Nankeen Kestrel	
Geopelia striata	Peaceful Dove	
Gerygone albogularis	White-throated Gerygone	
Haliastur sphenurus	Whistling Kite	
Macropus giganteus	Eastern Grey Kangaroo	
Macropus rufogriseus	Red-necked Wallaby	
Malurus leucopterus	White-winged Fairy-wren	
Malurus melanocephalus	Red-backed Fairy-wren	
Manorina melanocephala	Noisy Miner	
Merops ornatus	Rainbow Bee-eater	
Morethia boulengeri	South-eastern Morethia Skink	
Morethia taeniopleura	Fire-tailed Skink	
Ocyphaps lophotes	Crested Pigeon	
Oriolus sagittatus	Olive-backed Oriole	
Pardalotus striatus	Striated Pardalote	
Philemon citreogularis	Little Friarbird	
Platalea regia	Royal Spoonbill	
Platycercus adscitus	Pale-headed Rosella	
Plectorhyncha lanceolata	Striped Honeyeater	
Rhinella marina	Cane Toad	*
Rhipidura leucophrys	Willie Wagtail	
Taeniopygia bichenovii	Double-barred Finch	
Trichoglossus haematodus	Rainbow Lorikeet	