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UCMPL Brokenback Area 1 Conservation Area Monitoring Report 2025

Ulan Coal Mines Pty Ltd

Document Tracking

Project Name:	UCMPL Brokenback Area 1 Conservation Area Monitoring Report 2025
Project Number:	24MUD10093
Project Manager:	Project Manager Name

Version	Prepared by	Reviewed by	Approved by	Status	Date
V1	Claire Peacock	Rebeccas Croake	Kalya Abbey	Final	12/12/2025
V2	Claire Peacock	Rebeccas Croake	Kalya Abbey	Final	18/12/2025

This report should be cited as 'Eco Logical Australia Click or tap to enter a date, UCMPL Brokenback Area 1 Conservation Area Monitoring Report 2025, Prepared for Ulan Coal Mines Pty Ltd.'

Acknowledgements

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Abbreviations

Abbreviation	Description
BC Act	NSW <i>Biodiversity Conservation Act 2016</i>
CTRSWMP	Central Tablelands Regional Strategic Weed Management Plan
DPIE	Department of Planning, Industry and the Environment
Ha	Hectare
HBT	Hollow bearing tree
ELA	Eco Logical Australia
EPBC Act	Commonwealth <i>Environment Protection Biodiversity Conservation Act 1999</i>
LLS	Local Land Services
LWD	Large woody debris
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NSW	New South Wales
PCT	Plant Community Type
pf _c	Projected foliage cover
UCMPL	Ulan Coal Mines Pty Ltd
Abbreviation	Description
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Abbreviation	Description

Executive Summary

Eco Logical Australia (ELA) was engaged by Ulan Coal Mines Pty Ltd (UCMPL) to undertake monitoring of the Brokenback Conservation Area – Area 1 (the Conservation Area). The Conservation Area, located in part Lot 41 and part Lot 42 of Deposited Plan (DP) 750735, and part Lot 7301 DP 1148421, was established to satisfy commitments to secure biodiversity offsets relating to NSW Project Approval 08_0184 and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approval EPBC No. 2009/5252. The Conservation Area is to be managed to restore and protect the conservation values of the Conservation Area. The Conservation Area is comprised of 27.7 hectares (ha) of remnant vegetation.

A Conservation Agreement was established between the NSW Department of Planning, Industry and the Environment (DPIE) administering the NSW *National Parks and Wildlife Act 1974* (NPW Act) and UCMPL, under Part 4 Division 12 of the NPW Act (executed on 6 December 2019 as a Crown Land Reservation). Outlined in the Brokenback Conservation Area – Area 1 Conservation Agreement (the Conservation Agreement) is a monitoring program (Annexure D) which must be undertaken for a minimum 10-year period, which includes full floristic assessments within five designated quadrats, establishment of photo monitoring points and a walk-through assessment to record opportunistic sightings of management issues and threatened species. This report outlines the results of the seventh monitoring program undertaken since the establishment of sites in 2017.

Quadrat monitoring, photo point monitoring and walk-through assessments undertaken within the Conservation Area indicates that the Conservation Area remains intact with no damage or disturbance recorded, except for some observed areas of feral pig (*Sus scrofa*) diggings.

The trend shows a general increase in canopy cover for some sites, while other sites exhibit a plateauing trend over the entire monitoring period. Native species richness and ground cover components (grasses, shrubs and others) changed by various degrees across all sites in 2025. However, most of the results fell within the historically observed range, and therefore, these are most likely linked to seasonal variation and survey timing. Exotic ground cover remains negligible across the Conservation Area.

Overall, the Conservation Area is ecologically stable with the condition of vegetation within the Conservation Area remaining consistent with previous monitoring and consistent with the Plant Community Type (PCT) descriptions provided in the Conservation Agreement (UCMPL 2019).

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1. Introduction

The Brokenback Conservation Area – Area 1 (the Conservation Area) is located approximately 13 km northwest of the village of Ulan, located in the Mid-Western Regional Council Local Government Area in the geographical region of the Central Tablelands, NSW as shown in Figure 1 below.

The Conservation Area is approximately 21.9 ha in size and contains three plant community types (PCTs) as shown in Table 1 and Figure 2 (UCMPL 2019).

Table 1: PCTs within the Brokenback Conservation Area – Area 1

PCT Number	PCT Name	Condition	Area (ha)
PCT 478	Red Ironbark – Black Cypress Pine – stringybark +/- Narrow-leaved Wattle shrubby open forest on sandstone in the Gulgong – Mendooran region, southern Brigalow Belt South Bioregion	Intact	0.69
PCT 479	Narrow-leaved Ironbark – Black Cypress Pine – stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest in sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion	Intact	2.25
PCT 481	Rough-barked Apple – Blakely's Red Gum – Narrow-leaved Stringybark +/- Grey Gum sandstone riparian grass fern open forest in the southern Brigalow Belt South Bioregion and Upper Hunter region	Intact	18.91
		Total	21.85

The Conservation Area contains habitat for 30 vulnerable and three endangered species listed under the *Biodiversity Conservation Act 2016* (BC Act) and nine species listed as either vulnerable, endangered, or critically endangered under the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act). These species are listed in Table 2 Annexure B of the Conservation Agreement. Aboriginal artefacts have also been found within the Conservation Area (refer to Table 3 Annexure B) (UCMPL 2019).

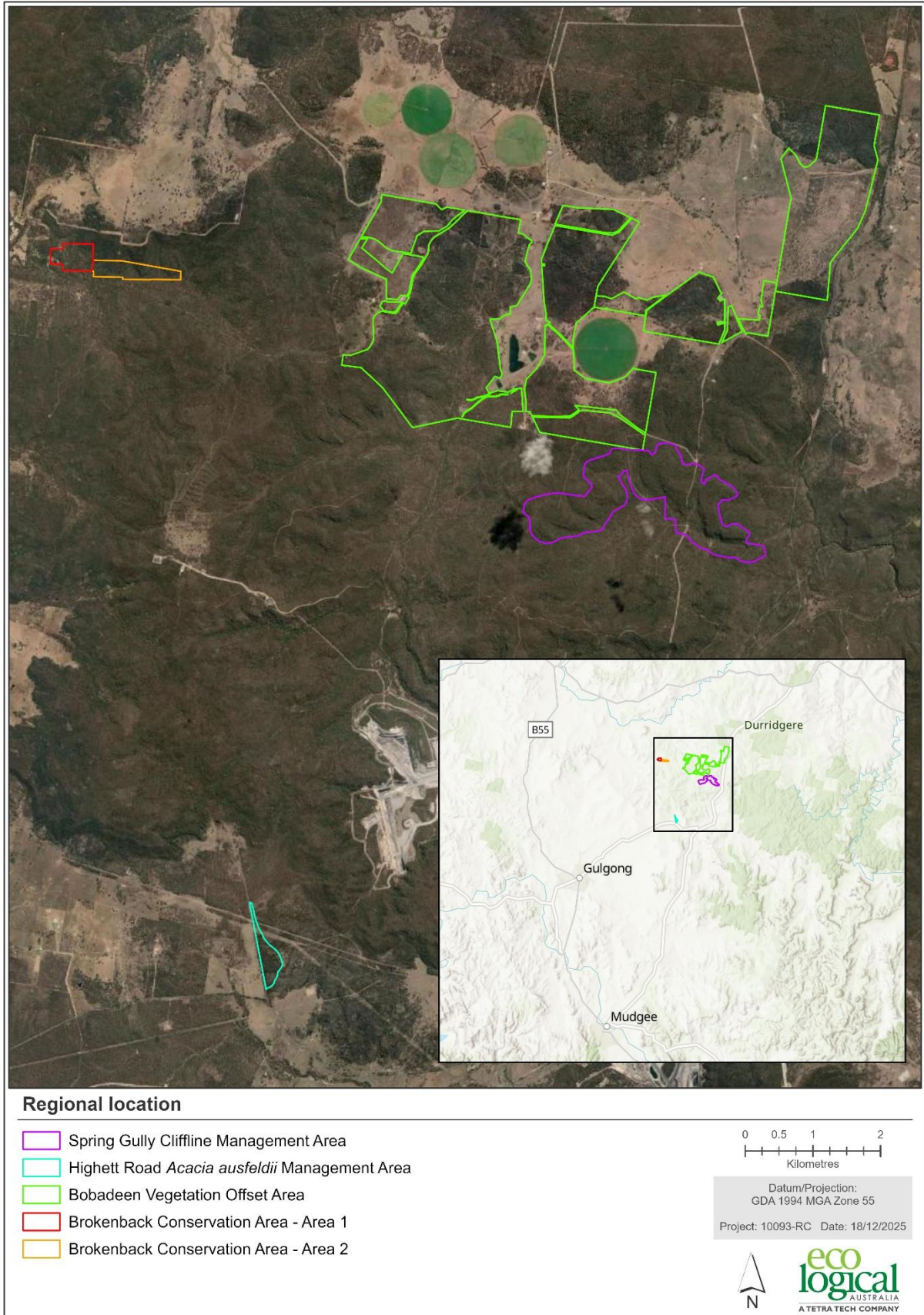


Figure 1: Regional location

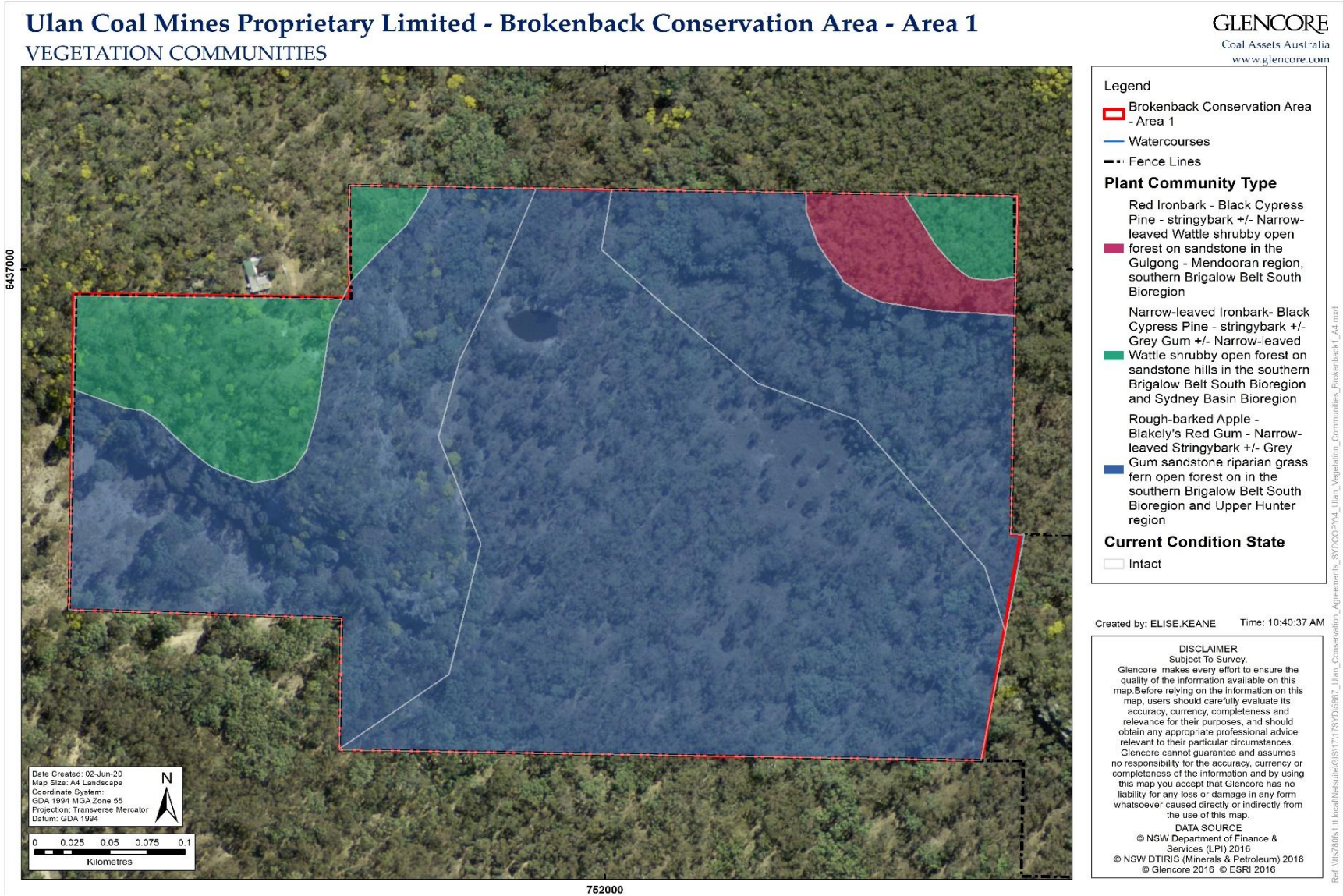


Figure 2: Vegetation communities

2. Methodology

Monitoring, including floristic quadrat monitoring, photo point monitoring and a walk-through assessment of the Conservation Area was undertaken in accordance with the Section 7 and Annexure D of the Conservation Agreement (UCMPL 2019) and the BioBanking Assessment Methodology (OEH 2014) by ELA ecologists on the 29 May and 3-4 June 2025.

Monitoring in 2025 forms the sixth round of monitoring for the Conservation Area as per the Conservation Agreement; however, the 2025 monitoring is the seventh round of monitoring for these sites within Brokenback Conservation Area. As part of the establishment of the Conservation Agreement for the Conservation Area, sites were established and underwent monitoring in 2017 (baseline monitoring). As per Annexure D, Section c) iii) of the Conservation Agreement, the results of the 2025 monitoring were compared to results from 2017 to 2024 to determine changes from previous monitoring.

The UCMPL Biodiversity Management Plan (BMP, UCMPL 2024) also contains fauna monitoring requirements throughout the Conservation Area; however, there is no requirement for fauna survey within the Conservation Area in accordance with the Conservation Agreement (UCMPL 2019). Results of the fauna survey have also been summarised within this report, where relevant.

2.1. Quadrat and photo-point monitoring

Quadrat data was collected at five monitoring locations as shown in Figure 3. Data collected at each monitoring plot was undertaken in accordance with the BioBanking Assessment Methodology (OEH 2014) within a 20 x 20 m quadrat nested in a 20 x 50 m quadrat. This methodology is consistent with floristic monitoring undertaken across UCMPL biodiversity and vegetation offset areas as a part of the BMP (UCMPL 2024). The following attributes were recorded:

- Floristic cover and abundance within the nested 20 x 20 m quadrat
 - Cover estimates for each species were recorded from 1 - 5 % and thereafter in 5% increments.
 - Abundance estimates for each species were recorded using the intervals of 1 - 10, 20, 50, 100, 500, 1000 individuals.
- 50m biometric transect
 - At 1 m intervals recording vegetative ground cover including, native ground cover – grasses, native ground cover – shrubs (<1 m), native ground cover – other, exotic ground cover or non-vegetative ground cover (litter, bare soil, rock, cryptogram).
 - At 5m intervals recording native overstorey percent foliage cover (pfc) and midstorey pfc (>1 m).
- Proportion of canopy species naturally regenerating within the 20 x 50 m quadrat and the zone.
- Total length of large woody debris (LWD) and hollow bearing trees (HBTs) within the 20 x 50 m quadrat.
- The occurrence of weeds, feral animal disturbance and other observable impacts.

Total native cover, which is not prescribed by the BioBanking Assessment Methodology but by the Conservation Agreement (UCMPL 2019) was calculated from the total of native overstorey cover,

native midstorey cover, native ground cover – grasses, native ground cover – shrubs and native ground cover – other. More than 100% projected foliage cover (pfc) can be recorded using this method; however, covers for attributes are also presented singularly in this report.

Photographs were taken facing north, east, south and west from the transect / plot start point as per methodology outlined in Annexure D of the Conservation Agreement (UCMPL 2019).

As a part of the UCMPL BMP (UCMPL 2024), annual inspections are undertaken by UCMPL representatives within the Conservation Area.

2.2. Walk-through Assessment

A walk-through assessment was also undertaken within the Conservation Area to record opportunistic observations of issues such as fire events or impacts of fire management, weeds (involving compilation of a list of exotic species identified and recording the location and extent of new weed infestations), pest animal species and their locations, visitor impacts and vehicle access (including evidence of any recent usage, and the presence of any new tracks, rubbish dumping, natural regeneration of previously disturbed areas and sightings of any threatened species listed under the EPBC Act and / or the BC Act. Observations were recorded with a handheld Global Positioning System (GPS).

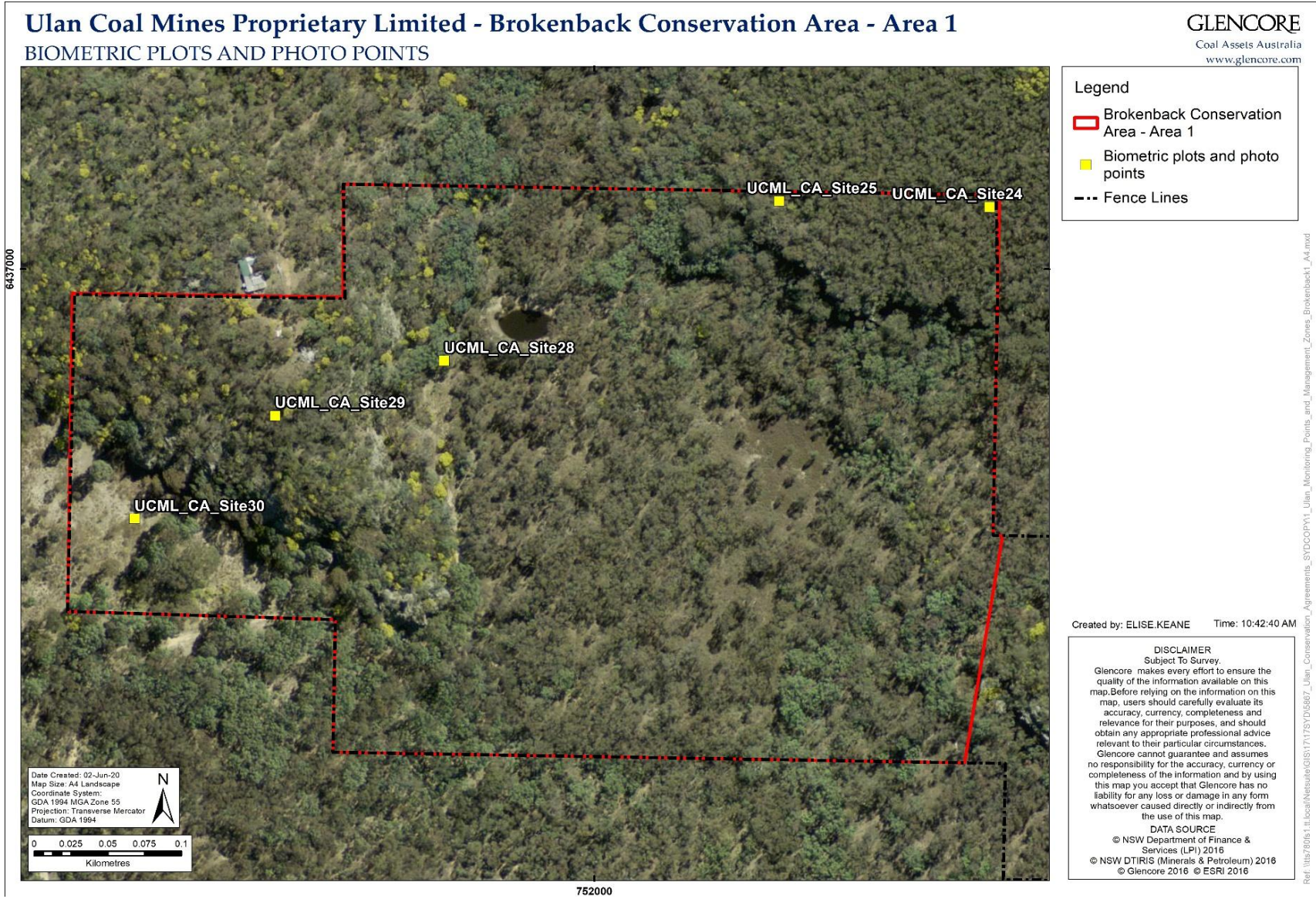


Figure 3: Plot locations

3. Results

3.1. Quadrat and photo-point monitoring

A summary of results is provided in Table 2. A full species list is provided in Appendix A. Monitoring data sheets and photos for each site are presented in Appendix B.


Table 2: Quadrat monitoring results summary 2025

Photo Point / Quadrat No	Native species richness	Overstorey cover %pfc	Midstorey cover %pfc	Ground cover – grasses %pfc	Ground cover – shrubs %pfc	Ground cover – other %pfc	Proportion overstorey regen. %	Exotic cover %pfc	Number of Trees with Hollows	Total length of fallen logs (m)
478 Red Ironbark - Black Cypress Pine - stringybark +/- Narrow-leaved Wattle shrubby open forest on sandstone in the Gulgong - Mendooran region, southern Brigalow Belt South Bioregion (HU707)										
Benchmark values	25	20	10	5	5	5	N/A	N/A	0.8	46
UCML_CA_Site25	34	10	22	0	8	8	100	0	3	61
479 Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion (HU702)										
Benchmark values	31	5	2	2	2	2	N/A	N/A	2	40
UCML_CA_Site24	41	17.5	22	0	20	4	100	0	5	21
UCML_CA_Site29	31	17	8.5	4	8	6	100	0	2	22
481 Rough-barked Apple - Blakely's Red Gum - Narrow-leaved Stringybark +/- Grey Gum sandstone riparian grass fern open forest on in the southern Brigalow Belt South Bioregion and Upper Hunter region (HU713)										
Benchmark values	31	10	5	0	10	5	N/A	N/A	1.5	10
UCML_CA_Site28	47	15	16.2	18	16	0	100	0	0	8
UCML_CA_Site30	38	43	0.4	10	0	18	67	0	0	2

3.2. Walk through assessment summary

Results from the walk-through assessment across the entire Conservation Area is provided in Table 3. A map depicting the location of the management issues described in Table 3 is provided in Appendix C.

Table 3: Walk-through assessment results summary 2025

Category	Comment
Fire events or impacts of fire management	No fire events or fire management occurred in the Conservation Area.
Weeds	<p><i>Opuntia stricta</i> (Common Prickly Pear) (Figure 4) which is listed as a state priority weed and Central Tablelands region priority weed under the Local Land Services (LLS) Central Tablelands Regional Strategic Weed Management Plan (CTRSWMP) 2023 – 2027 (LLS 2022) was identified throughout the Conservation Area (Figure 8).</p> <p>Other exotic species recorded within the Conservation Area include:</p> <ul style="list-style-type: none"> ● <i>Chondrilla juncea</i> (Skeleton Weed) ● <i>Conyza bonariensis</i> (Flaxleaf Fleabane) ● <i>Gamochaeta calviceps</i> (Cuweed) ● <i>Hypochaeris glabra</i> (Smooth Cat's Ear) ● <i>Rumex acetosella</i> (Sorrell) ● <i>Stellaria media</i> (Common Chickweed) ● <i>Taraxacum officinale</i> (Dandelion)
	
	<p>Figure 4: <i>Opuntia stricta</i> recorded within Conservation Area</p>
Pest animals	<p>Feral pig (<i>Sus scrofa</i>) diggings were recorded throughout the Conservation Area (Figure 8) on relatively bare ground with soft surface soils (Figure 5). These diggings occurred to a limited extent. Feral pigs were also directly observed.</p> <p>Evidence of feral goat (<i>Capra hircus</i>) presence was also recorded within the Conservation Area (Figure 8; Figure 6).</p>

Category	Comment
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Figure 5: Fresh feral pig diggings observed within the Conservation Area



Figure 6: Feral goat scats on rock outcrop within the Conservation Area

Visitor impact and vehicle access	No evidence of recent usage and no presence of new tracks.
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Rubbish dumping	Rubbish was identified within the Conservation Area located near to a derelict building located to the north of the Conservation Area (Figure 7). This rubbish is likely being blown into the Conservation Area.
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Category	Comment
	
Natural regeneration of disturbed areas	<p>Figure 7: Rubbish recorded within the Conservation Area</p> <p>Natural regeneration of canopy species was identified at all five plots monitored within the Conservation Area.</p> <p>The areas surrounding UCML_CA_Site28 and UCML_CA_Site30 have been historically cleared / thinned. Regeneration of three (3) and two (2) canopy species is ongoing adjacent to UCML_CA_Site28 and UCML_CA_Site30, respectively.</p>
Threatened species observations	<p>Little Lorikeet (<i>Parvipsitta pusilla</i>) was detected within the Conservation Area during 2025 (Figure 8). Barking Owl (<i>Ninox connivens</i>) was detected approximately 600 m west of the Conservation Area during 2025 (ELA 2025). Given the proximity of this detection to the Conservation Area, and the connectivity of remnant vegetation throughout the area, it is considered likely that this species is utilising habitat within the Conservation Area.</p>

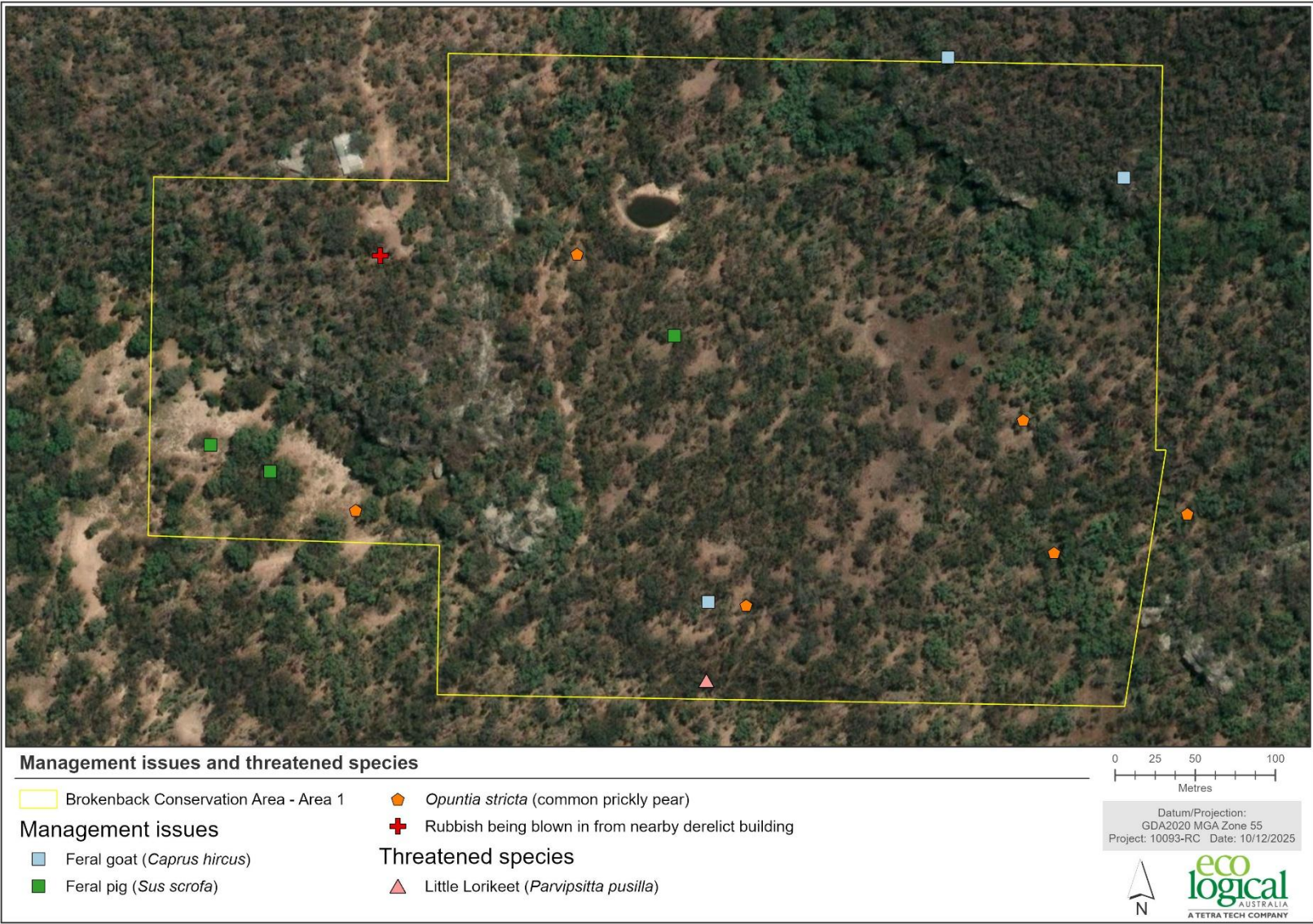


Figure 8: Management issues and threatened species

3.3. Management actions undertaken

3.3.1. Weed management

Toolijoa Environmental Restoration (2025) undertook an inspection around the derelict building to determine the presence of any invasive and / or ornamental species which have potential to expand into the nearby Conservation Area. The inspection identified an infestation of *Heliotropium amplexicaule* (Blue Heliotrope) near the derelict building, as well as several ornamental and fruit trees. It was noted that several feral pigs were feeding on fruit from fruit trees near the derelict building (Toolijoa Environmental Restoration 2025).

Low volume spot spraying of *Rubus fruticosus* spp. aggregate, and *Opuntia stricta* were also undertaken within the Conservation Area by Toolijoa Environmental Restoration (2025).

3.3.2. Pest animal management

Trail camera monitoring was also undertaken within the Conservation Area by UCMPL personnel. Grain, traps and labour were also provided to support feral animal control programs on agricultural areas within the UCMPL Project Boundary with the purpose of aiding in a wider control program across the region.

4. Discussion

4.1. Changes since previous monitoring

Results from 2017 to 2025 for each monitoring transect and comparison to benchmark values (UCMPL 2019) are provided in Table 4 below.

Discussion regarding changes or observed trends from the previous monitoring period on a site-by-site basis within each PCT is provided below. Several attributes including native species richness, ground cover grasses pfc, ground cover shrubs pfc and ground cover other pfc are sensitive to rainfall and survey timing, with all attributes subject to small variations year to year due to observer interpretation.

Overall, the Conservation Area remains ecologically stable with the condition of the vegetation monitored in 2025 remaining largely consistent with the results from previous monitoring and with PCT descriptions provided in the Conservation Agreement (UCMPL 2019).

Native species richness increased at all sites compared to the previous monitoring period.

There was a mixed trend for canopy cover and ground cover attributes. Exotic ground cover continued to be negligible across the Conservation Area. Only two sites recorded exotic species within the 20 x 20 m quadrat. When present, exotic cover was less than 0.4% within the quadrat.

Length of LWD fluctuated in 2025, however, the majority of sites (60%) displayed an increase in LWD length. Three sites are currently below the benchmark for LWD; however, the detectability of this debris may change across years, due to variations in litter accumulation and groundcover. HBTs remained consistent with previous monitoring, except for at UCML_Site_24 and UCML_Site_29 where the number of HBTs increased by one.

4.1.1. PCT 478 Red Ironbark - Black Cypress Pine - stringybark +/- Narrow-leaved Wattle shrubby open forest on sandstone

UCML_CA_Site25 recorded a small increase in native species richness compared to previous monitoring periods; however, remains relatively consistent with previous monitoring periods. Overall native groundcover pfc decreased compared to 2024. In 2023 and 2024, a decrease in overstorey and midstorey cover was recorded, which was likely attributed to the senescence of *Acacia doratoxylon*. This species recorded 6% pfc in 2023, and 2% pfc in 2024. In 2025, overstorey and midstorey cover increased, returning a 5% pfc for *Acacia doratoxylon*, 10% cover for overstorey overall and 22% cover for the midstorey. Monitoring identified considerable natural regeneration of all canopy species.

Exotic pfc remains absent from UCML_CA_Site25. Canopy species regeneration remains consistent with previous years. Number of HBTs increased by one and the length of LWD has decreased but remains above benchmark.

Table 4: Monitoring results 2017 to 2024 – PCT 478

Photo Point / Quadrat No		Native species richness	Overstorey cover %pfc	Midstorey cover %pfc	Ground cover – grasses %pfc	Ground cover – shrubs %pfc	Ground cover – other %pfc	Proportion overstorey	Exotic cover %pfc	Number of HBTs	Total length of fallen logs (m)
Benchmark values		25	20	10	5	5	5	N/A	N/A	0.8	46
UCML_CA_Site25	2017	27	7.9	7.2	0	4	0	100	2	1	66

Photo Point / Quadrat No		Native species richness	Overstorey cover %pfc	Midstorey cover %pfc	Ground cover – grasses %pfc	Ground cover – shrubs %pfc	Ground cover – other %pfc	Proportion overstorey	Exotic cover %pfc	Number of HBTs	Total length of fallen logs (m)
Remnant	2020	27	8.5	5.5	8	2	0	67	0	2	100
	2021	31	9	25	2	0	22	100	0	2	100
	2022	25	20.2	3.5	16	6	36	100	0	2	95
	2023	36	6.7	14	0	10	20	100	0	2	95
	2024	30	2.4	8.3	6	22	12	100	0	2	75
	2025	34	10	22	0	8	8	100	0	3	61

4.1.2. PCT 479 Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills

There are two sites located within this PCT, UCML_CA_Site24 and UCML_CA_Site29.

Native species richness increased at UCML_CA_Site24, recording the highest native species richness across all years. Both overstorey cover and midstorey cover have increased in recent years, with both metrics also recording the highest values across all years for this site. All other metrics achieved the benchmark at UCML_CA_Site24 except length of fallen logs, which remains below benchmark.

Overstorey and midstorey cover at UCML_CA_Site29 has fluctuated across years, with 2025 values within the long-term range for this site. All metrics achieved the benchmark during 2025, except for length of fallen logs, which remains below benchmark.

Exotic cover remains negligible at both sites, consistent with previous years.

Table 5: Monitoring results 2017 to 2025 – PCT 479

Site	Year	Native species richness	Overstorey pfc (%)	Midstorey pfc (%)	Ground cover – grasses pfc (%)	Ground cover – shrubs pfc (%)	Ground cover – other pfc (%)	Proportion overstorey regen.	Exotic cover (%)	Number of HBTs	Total length of fallen logs (m)
Benchmark values		31	5	2	2	2	2	N/A	N/A	2	40
UCML_CA_Site24	2017	30	10.5	6.4	0	0	8	100	0	4	24
Remnant	2020	24	8.7	13	4	0	2	50	0	4	50
	2021	25	12	3.6	10	0	22	100	0	4	50
	2022	28	12	5.5	10	0	40	100	0	4	95
	2023	37	4.8	3.6	4	20	22	100	0	4	30
	2024	32	14.2	7.9	2	24	16	100	0	4	20
	2025	41	17.5	22	0	20	4	100	0	4	21
UCML_CA_Site29	2017	19	13	8.5	2	6	8	100	0	1	47
Remnant	2020	28	12.6	0	20	0	4	33	0	1	100
	2021	27	11	0.6	22	0	28	100	0	1	100
	2022	28	20.1	3.6	32	10	8	0	0	1	100
	2023	33	3.6	2.8	30	16	4	100	0	1	43
	2024	28	7.6	5.0	6	16	12	100	0	1	43
	2025	31	17	8.5	4	8	6	100	0	1	22

4.1.3. PCT 481 Rough-barked Apple - Blakely's Red Gum - Narrow-leaved Stringybark +/- Grey Gum sandstone riparian grass fern open forest

There are two sites located within this PCT, UCML_CA_Site28 and UCML_CA_Site30.

Native species richness recorded at UCML_CA_Site28 during 2025 was the highest since monitoring commenced in 2017. Overstorey and midstorey cover has fluctuated across years at this site, with 2025 values within the long-term range recorded at each site, respectively. This site has recorded relatively high ground cover – grasses since 2021, which is reflective of the presence of dense swards of perennial species. Ground cover – shrubs remains consistent with previous years and well above benchmark values. The persistent ground cover – shrub layer is comprised of low growing species *Sannantha cunninghamii*, *Cassinia sifton* and *Brachyloma daphnoides* (Peach Heath). Exotic cover at UCML_CA_Site28 returned to 0% during 2025. Number of HBTs remains consistent with previous years, with no HBTs present, and length of fallen logs remains relatively consistent with previous years.

Native species richness at UCML_CA_Site30 during 2025 was within the long-term range at this site. Overstorey cover has increased in 2025 compared to previous years while midstorey cover remains low. Ground cover metrics remained relatively consistent with previous years. Exotic cover at UCML_CA_Site30 returned to 0% during 2025. Number of HBTs remains consistent with previous years, with no HBTs present, and length of fallen logs remains relatively consistent with previous years.

Extensive pig diggings observed in 2023 and 2024 were still present in 2025 at UCML_CA_Site30. Feral pigs can degrade ground cover and may be responsible for the persistence of exotic species cover in the general Conservation Area. European rabbit (*Oryctolagus cuniculus*) scats were also evident at UCML_Site_30.

While there are no HBTs present within either monitoring site, HBTs are present within the landscape.

Table 6: Monitoring results 2017 to 2025 – PCT 481

Site	Year	Native species richness	Overstorey pfc (%)	Midstorey pfc (%)	Ground cover – grasses (%)	Ground cover – shrubs (%)	Ground cover – other (%)	Proportion overstorey regen.	Exotic cover (%)	Number of HBTs	Total length of fallen logs (m)
Benchmark values		31	10	5	0	10	5	N/A	N/A	1.5	10
UCML_CA_Site28	2017	35	18.5	3.8	8	12	2	100	4	0	0
Remnant	2020	37	25	6.6	4	8	2	100	2	0	1
	2021	44	12	11	28	18	4	67	0	0	1
	2022	37	22.5	1.3	38	16	4	100	0	0	1
	2023	45	16.5	23.5	40	8	0	100	2	0	10
	2024	44	6.6	10.8	26	18	0	100	2	0	4
	2025	47	15	16.2	18	16	0	100	0	0	8
UCML_CA_Site30	2017	33	34	0.2	8	12	4	100	0	0	2
Remnant	2020	37	35.5	4.5	0	4	18	33	0	0	10
	2021	34	22	2.5	18	0	10	100	0	0	10
	2022	29	32.5	0.5	26	0	24	100	0	0	10
	2023	40	26.5	0.5	26	0	8	100	2	0	10
	2024	36	23.1	3.7	14	4	20	50	0	0	0
	2025	38	43	0.4	10	0	18	67	0	0	2

4.2. Condition of conservation values

The Conservation Area contains four main conservation values as identified in the Conservation Agreement (UCMPL 2019):

- Three PCTs: PCT481, PCT478 and PCT479
- Habitat for 30 Vulnerable and three Endangered species listed under the BC Act with nine of these species also listed under the EPBC Act.
- Approximately 21.9 ha of native vegetation and fauna habitat which has good connectivity to surrounding remnant woodland / forest areas and the adjacent Brokenback Conservation Area – Area 2 and contributes to flora and fauna species conservation outcomes in the Hunter-Central Rivers Catchment Management Authority.
- 17 identified Aboriginal objects that are listed on the DPIE Aboriginal Heritage Information Management System register.

Each of these conservation values remain intact, with no damage or disturbance to these conservation values recorded throughout the Conservation Area.

4.3. Effectiveness of management actions

4.3.1. Weed management

Weed control works successfully eradicated several large individuals of *Opuntia stricta* and *Rubus fruticosus*.

The inspection of the house surrounds successfully located and recorded an infestation of *Heliotropium amplexicaule* and several ornamental and fruit trees to target during future weed management events (Toolijooa Environmental Restoration 2025).

4.3.2. Pest animal management

While feral pig and feral goat continue to be recorded within the Conservation Area, damage to vegetation remains minimal. Despite this, the implementation of feral animal control programs are recommended to limit damage to groundcover and threatened species habitat, and to reduce pressure on native species within the Conservation Area.

Whilst the effectiveness of these programs is difficult to measure with quantitative controls, opportunistic observations indicate the control programs were effective as evident by the reduction in visible populations (pers coms UCMPL Environment and Community Coordinator Mathew Croake).

5. Recommendations

ELA recommends that monitoring continues to be undertaken on an annual basis as per the methodology outlined in Annexure D of the Brokenback Conservation Area – Area 1 Conservation agreement (UCMPL 2019).

Weed control measures in accordance with site specific control procedures should be implemented with site specific control procedures to control and prevent the spread of CTRSWMP (LLS 2022) listed weeds identified in Table 4 and Appendix C. It is also recommended that monitoring and control of weed species be continued in the medium term, as access to potential infestation sites are difficult (Toolijooa Pty Ltd, 2025).

As there was damage by pig diggings observed throughout the Brokenback Conservation Area, it is recommended that Feral Pig management be continued to reduce impacts of this species to high value native vegetation and communities throughout the Conservation Area.

6. References

Eco Logical Australia (ELA) 2024. *UCMPL Brokenback Area 1 VCA Monitoring Report 2024*. Prepared for Ulan Coal Mines Pty Ltd.

Eco Logical Australia (ELA) 2025. *UCMPL Brokenback Area 2 VCA Monitoring Report 2024*. Prepared for Ulan Coal Mines Pty Ltd.

NSW Office of Environment and Heritage (OEH) 2014. Framework for Biodiversity Assessment – NSW Biodiversity Offsets Policy for Major Projects.

Local Land Services (LLS) 2022. Central Tablelands Regional Strategic Management Plan (CTRSWMP) 2023 – 2027.

Toolijooa Environmental Restoration 2025. *Progress Report – Ulan Offset Areas January 2025*. Prepared for Ulan Coal Mines Pty Ltd.

Ulan Coal Mines Pty Ltd (UCMPL) 2019. Brokenback Conservation Area – Area 1 Conservation Agreement.

Ulan Coal Mines Pty Ltd (UCMPL) 2024. *Biodiversity Management Plan (BMP) version 7*.

Appendix A Flora Species List

Table 7: Flora species list

Scientific Name	Native/Exotic	UCML_CA_Site24	UCML_CA_Site25	UCML_CA_Site28	UCML_CA_Site29	UCML_CA_Site30
<i>Acacia buxifolia</i>	Native	✓				
<i>Acacia doratoxylon</i>	Native	✓	✓		✓	
<i>Acacia linearifolia</i>	Native		✓	✓	✓	✓
<i>Acacia spectabilis</i>	Native					✓
<i>Acianthus fornicatus</i>	Native	✓			✓	
<i>Allocasuarina gymnanthera</i>	Native	✓	✓		✓	
<i>Amyema miquelii</i>	Native				✓	
<i>Amyema quandang</i>	Native		✓	✓	✓	
<i>Angophora floribunda</i>	Native			✓		✓
<i>Aotus subglauca</i>	Native					✓
<i>Aristida ramosa</i>	Native	✓			✓	✓
<i>Aristida vagans</i>	Native		✓			
<i>Arundinella nepalensis</i>	Native			✓		✓
<i>Astroloma humifusum</i>	Native	✓	✓			
<i>Billardiera scandens</i>	Native	✓	✓	✓		
<i>Brachyloma daphnoides</i>	Native			✓		✓
<i>Brachyscome sp.</i>	Native	✓	✓			
<i>Calotis cuneifolia</i>	Native	✓			✓	✓
<i>Calytrix tetragona</i>	Native		✓			
<i>Cassinia quinquefaria</i>	Native		✓	✓	✓	
<i>Cassinia sifton</i>	Native	✓	✓	✓	✓	✓
<i>Cassytha pubescens</i>	Native			✓		
<i>Cheilanthes sieberi</i>	Native	✓	✓	✓	✓	
<i>Chondrilla juncea</i>	Exotic					✓
<i>Conyza bonariensis</i>	Exotic					✓

Scientific Name	Native/Exotic	UCML_CA_Site24	UCML_CA_Site25	UCML_CA_Site28	UCML_CA_Site29	UCML_CA_Site30
<i>Correa reflexa</i> var. <i>reflexa</i>	Native				✓	
<i>Cryptandra spinescens</i>	Native	✓				
<i>Cymbonotus lawsonianus</i>	Native			✓		
<i>Cynoglossum australe</i>	Native			✓		✓
<i>Cyperus</i> sp.	Native / Exotic			✓		
<i>Dampiera purpurea</i>	Native	✓	✓			
<i>Daucus glochidiatus</i>	Native			✓		
<i>Dianella revoluta</i>	Native					✓
<i>Dichelachne micrantha</i>	Native	✓				
<i>Dichondra repens</i>	Native			✓		✓
<i>Digitaria breviglumis</i>	Native	✓	✓			
<i>Digitaria diffusa</i>	Native	✓		✓		✓
<i>Digitaria</i> sp.	Native Exotic			✓	✓	
<i>Dodonaea viscosa</i>	Native		✓			
<i>Echinopogon caespitosus</i>	Native			✓		✓
<i>Einadia nutans</i>	Native			✓	✓	
<i>Entolasia stricta</i>	Native	✓				
<i>Eragrostis leptostachya</i>	Native				✓	
<i>Eucalyptus blakelyi</i>	Native			✓		✓
<i>Eucalyptus crebra</i>	Native				✓	
<i>Eucalyptus dwyeri</i>	Native	✓	✓			
<i>Eucalyptus fibrosa</i>	Native	✓				
<i>Eucalyptus sparsifolia</i>	Native		✓			
<i>Euchiton sphaericus</i>	Native				✓	
<i>Gahnia aspera</i>	Native	✓		✓	✓	
<i>Gamochoaeta calviceps</i>	Exotic					✓
<i>Geranium solanderi</i>	Native			✓		
<i>Glycine clandestina</i>	Native			✓		✓

Scientific Name	Native/Exotic	UCML_CA_Site24	UCML_CA_Site25	UCML_CA_Site28	UCML_CA_Site29	UCML_CA_Site30
<i>Glycine tabacina</i>	Native			✓		✓
<i>Gonocarpus elatus</i>	Native	✓	✓		✓	
<i>Gonocarpus tetragynus</i>	Native			✓		
<i>Goodenia hederacea</i>	Native		✓			
<i>Grona varians</i>	Native			✓		
<i>Hibbertia circumdans</i>	Native	✓	✓			
<i>Hibbertia obtusifolia</i>	Native			✓		✓
<i>Hydrocotyle laxiflora</i>	Native			✓		✓
<i>Hypochaeris glabra</i>	Exotic					✓
<i>Imperata cylindrica</i>	Native					✓
<i>Juncus usitatus</i>	Native					✓
<i>Lepidosperma laterale</i>	Native		✓		✓	
<i>Leucopogon muticus</i>	Native	✓	✓	✓	✓	✓
<i>Lomandra confertifolia</i>	Native		✓			✓
<i>Lomandra filiformis</i>	Native	✓	✓			✓
<i>Lomandra glauca</i>	Native	✓		✓		
<i>Lomandra multiflora</i>	Native	✓	✓	✓		✓
<i>Macrozamia secunda</i>	Native			✓		
<i>Melichrus erubescens</i>	Native				✓	
<i>Microlaena stipoides</i>	Native	✓	✓	✓	✓	✓
<i>Opuntia stricta</i>	Exotic			✓		
<i>Oxalis perennans</i>	Native	✓		✓	✓	
<i>Ozothamnus diosmifolius</i>	Native	✓	✓			
<i>Panicum effusum</i>	Native				✓	
<i>Patersonia sericea</i>	Native	✓				
<i>Persoonia linearis</i>	Native	✓	✓	✓		✓
<i>Phyllanthus hirtellus</i>	Native	✓	✓		✓	
<i>Pimelea linifolia</i>	Native					✓

Scientific Name	Native/Exotic	UCML_CA_Site24	UCML_CA_Site25	UCML_CA_Site28	UCML_CA_Site29	UCML_CA_Site30
<i>Platysace ericoides</i>	Native	✓	✓		✓	
<i>Podolepis neglecta</i>	Native					✓
<i>Pomax umbellata</i>	Native	✓	✓		✓	
<i>Poranthera microphylla</i>	Native	✓		✓		✓
<i>Pterostylis sp.</i>	Native	✓	✓		✓	
<i>Pultenaea microphylla</i>	Native		✓			
<i>Rumex acetosella</i>	Exotic			✓		✓
<i>Rumex brownii</i>	Native			✓		
<i>Rytidosperma sp.</i>	Native			✓	✓	
<i>Sannantha cunninghamii</i>	Native	✓		✓		
<i>Solanum cinereum</i>	Native	✓				
<i>Solenogyne bellioides</i>	Native			✓		
<i>Stellaria media</i>	Exotic			✓		
<i>Stylidium laricifolium</i>	Native	✓	✓			
<i>Stypandra glauca</i>	Native				✓	
<i>Styphelia triflora</i>	Native	✓				
<i>Taraxacum officinale</i>	Exotic			✓		
<i>Thysanotus patersonii</i>	Native	✓				
<i>Urtica incisa</i>	Native			✓		✓
<i>Veronica plebeia</i>	Native			✓		✓
<i>Wahlenbergia communis</i>	Native					✓
<i>Wahlenbergia sp.</i>	Native			✓		

Appendix B Monitoring Data Sheets and Site Photos

Table 8: UCML_CA_Site24 monitoring data sheet 2025

Monitoring Data Sheet			
Monitoring Point Number	UCML_CA_Site24	Date	
Vegetation Community	479 – Narrow-leaved Ironbark – Black Cypress Pine – stringybark shrubby open forest		
1. Site Photo(s) Taken	Figure 6 to Figure 9		
2. Floristic BioMetric attributes			
Native cover			63.5%
Overstorey:			17.5%
Midstorey:			22%
Groundcover(grass):			0%
Groundcover (shrub):			20%
Groundcover (other):			4%
Native species richness:			41
Proportion of canopy species regenerating			100%
Exotic cover			0%
Number of trees with hollows			5
Total length of fallen logs			21 m
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel			Nil
Weeds			Nil
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Nil



Figure 9: UCML_CA_Site24 North



Figure 10: UCML_CA_Site24 East



Figure 11: UCML_CA_Site24 South



Figure 12: UCML_CA_Site24 West

Table 9: UCML_CA_Site25 monitoring data sheet 2025

Monitoring Data Sheet			
Monitoring Point Number	UCML_CA_Site25		Date
Vegetation Community	478 - Red Ironbark - Black Cypress Pine - stringybark shrubby open forest		
1. Site Photo(s) Taken	Figure 10 to Figure 13		
2. Floristic BioMetric attributes			
Native cover			48%
Overstorey:			10%
Midstorey:			22%
Groundcover(grass):			0%
Groundcover (shrub):			8%
Groundcover (other):			8%
Native species richness:			34
Proportion of canopy species regenerating			100%
Exotic cover			0%
Number of trees with hollows			0
Total length of fallen logs			3 m
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel			Nil
Weeds			Nil
Pest animals	78	752140, 6437056	Feral goat (<i>Capra hircus</i>) scats
Visitor impact/vehicles			Nil
Rubbish dumping			Nil



Figure 13: UCML_CA_Site25 North



Figure 14: UCML_CA_Site25 East



Figure 15: UCML_CA_Site25 South



Figure 16: UCML_CA_Site25 West

Table 10: UCML_CA_Site28 monitoring data sheet 2025

Monitoring Data Sheet			
Monitoring Point Number	UCML_CA_Site28		Date
Vegetation Community	481 - Rough-barked Apple - Blakely's Red Gum - Narrow-leaved Stringybark open forest		
1. Site Photo(s)Taken	Figure 14 to Figure 17		
2. Floristic BioMetric attributes			
Native cover			65.2%
Overstorey:			15%
Midstorey:			16.2%
Groundcover(grass):			18%
Groundcover (shrub):			16%
Groundcover (other):			0%
Native species richness:			47
Proportion of canopy species regenerating			100%
Exotic cover			0%
Number of trees with hollows			0
Total length of fallen logs			8 m
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel			Nil
Weeds	751909, 6436933	470	One priority weed species (<i>Opuntia stricta</i>) listed under the CTRSWMP was recorded within the monitoring plot. Exotic species recorded at UCML_CA_28 include: <i>Rumex acetosella</i> (approx. 0.1% pfc, 20 abundance) <i>Stellaria media</i> (approx. 0.2% pfc, 500 abundance) <i>Taraxacum officinale</i> (approx. 0.1% pfc, 5 abundance)
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Nil



Figure 17: UCML_CA_Site28 North



Figure 18: UCML_CA_Site28 East



Figure 19: UCML_CA_Site28 South



Figure 20: UCML_CA_Site28 West

Table 11: UCML_CA_Site29 monitoring data sheet 2025

Monitoring Data Sheet			
Monitoring Point Number	UCML_CA_Site29	Date	
Vegetation Community	479 - Narrow-leaved Ironbark - Black Cypress Pine - stringybark shrubby open forest		
1. Site Photo(s)Taken	Figure 18 to Figure 21		
2. Floristic BioMetric attributes			
Native cover			43.5%
Overstorey:			17%
Midstorey:			8.5%
Groundcover(grass):			4%
Groundcover (shrub):			8%
Groundcover (other):			6%
Native species richness:			31
Proportion of canopy species regenerating			100%
Exotic cover			0%
Number of trees with hollows			2
Total length of fallen logs			22 m
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel			Nil
Weeds			Nil
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping	751786, 6436932	473	Rubbish



Figure 21: UCML_CA_Site29 North



Figure 22: UCML_CA_Site29 East



Figure 23: UCML_CA_Site29 South



Figure 24: UCML_CA_Site29 West

Table 12: UCML_CA_Site30 monitoring data sheet 2025

Monitoring Data Sheet			
Monitoring Point Number	UCML_CA_Site30	Date	
Vegetation Community	481 - Rough-barked Apple - Blakely's Red Gum - Narrow-leaved Stringybark open forest		
1. Site Photo(s) Taken	Figure 22 to Figure 25		
2. Floristic BioMetric attributes			
Native cover			71.4%
Overstorey:			43%
Midstorey:			0.4%
Groundcover(grass):			10%
Groundcover (shrub):			0%
Groundcover (other):			18%
Native species richness:			38
Proportion of canopy species regenerating			100%
Exotic cover			0%
Number of trees with hollows			0
Total length of fallen logs			2 m
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel			Nil
Weeds	Exotic species recorded at UCMPL_CA_30 include: <i>Chondrilla juncea</i> (approx. 0.1% pfc, 1 abundance) <i>Conyza bonariensis</i> (approx. 0.1% pfc, 3 abundance) <i>Gamochaeta calviceps</i> (approx. 0.1% pfc, 1 abundance) <i>Hypochaeris radicata</i> (approx. 0.3% pfc, 100 abundance) <i>Rumex acetosella</i> (approx. 0.2% pfc, 50 abundance)		
Pest animals	751680, 6436814	56	Feral pig (<i>Sus scrofa</i>) diggings
	751744, 6436795	57	European rabbit (<i>Oryctolagus cuniculus</i>) scats
	751718, 6436798	58	Feral pig (<i>Sus scrofa</i>) diggings
Visitor impact/vehicles			Nil
Rubbish dumping			Nil



Figure 25: UCML_CA_Site30 North



Figure 26: UCML_CA_Site30 East



Figure 27: UCML_CA_Site30 South



Figure 28: UCML_CA_Site30 West

