Duralie Coal Mine Annual Biodiversity Report 2025

FOR THE 12 MONTHS ENDING 30 JUNE 2025

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1 INTRODUCTION

The Duralie Coal Mine (**DCM**), located in the Southern part of the Gloucester Basin NSW, is approximately 30 kilometres (km) south of Gloucester and is owned and operated by Duralie Coal Pty Ltd (**DCPL**), a fully owned subsidiary of Yancoal Australia Limited (**YAL**). This Annual Biodiversity Report has been prepared in accordance with the DCM Biodiversity Management Plan (**BMP**).

1.1 Scope

In accordance with the Duralie Extension Project, Project Approval 08_0203 (as modified December 2014), the proponent (DCPL) is required, in accordance with Schedule 3, condition 43 to prepare and implement a BMP. This Plan must include:

> *"a program to monitor and report on the effectiveness of the measures in the Biodiversity Management Plan and conditions 33-43 of this approval, and the performance of the Offset Strategy, with summary reporting to be carried out annually and comprehensive reporting every three years following the independent environmental audit".*

This DCM Annual Biodiversity Report provides a review of the effectiveness of measures in the BMP for the year ending 30 June 2025 in accordance with Section 10.1.1 of the BMP. The scope of the review includes the Mining Lease area ML1427 and ML1646 and Biodiversity Offset Areas as indicated on **Plan A**.

This report (and associated Appendices) is included as an Appendix of the DCM Annual Review which is available on the Duralie Coal website www.yancoal.com.au/our-sites/duralie/.

A revised BMP was submitted to the NSW Department of Planning and Environment (DPE) and approved on 22 February 2023 (**Appendix A**). The revised BMP was prepared to reflect the current status of DCM and current mine closure planning. The key changes to the BMP include relevant updates to the performance and completion criteria tables with consideration to the works which have been completed to date.

2 STATUS OF BMP PERFORMANCE CRITERIA

Performance criteria as prescribed in the BMP is presented **in Tables 1 to 10**. The performance criteria have been developed to meet the specific objectives for the areas described in Section 2 of the BMP. All performance criteria are linked to the management specifications listed in the BMP Section 5 and Section 6, and monitoring/reporting specifications in the BMP Section 7. The status of BMP performance criteria is provided in the subsequent sections of this report.

Insert Plan A

3 VEGETATION CLEARANCE PROTOCOL

3.1 Vegetation Clearance Report

Vegetation clearance is undertaken in accordance with the BMP Section 5.4 Vegetation Clearance Plan. Prior to any clearance operations a Clearing Plan is prepared, and vegetation pre-clearance surveys are undertaken.

During the 2024/2025 reporting period, approximately 3.39 hectares (ha) of vegetation was cleared at the DCM to assist with mine closure civil works and to achieve final landform designs for rehabilitation. Appendix C contains the pre-clearance survey associated with the vegetation clearance and summarises the fauna observed and any habitat features that were salvaged, cleared or relocated in 2024/2025. Information obtained during vegetation clearance activities (i.e. habitat features, hollows cleared and fauna observed) has been used to determine the requirements for nest box replacement in the Biodiversity Offset Areas (refer **Section 4**).

The area of disturbance at the end of June 2025 is shown in the DCM Annual Review 2024 Figure 4 (**Appendix B**).

3.2 Salvaged and Reused Material for Habitat Enhancement

Section 5.8 of the BMP requires salvaged material from vegetation clearance activities to be used for habitat enhancement within the revegetation or rehabilitation areas. Habitat features such as trunks, logs, large rocks, branches, stumps and roots are salvaged and relocated where practicable.

During the reporting period cleared vegetation was managed as follows:

- Vegetation was mulched and where applicable used as temporary erosion and sediment control, spread on existing rehabilitation areas and incorporated into topsoil.
- 12 nest boxes were relocated in the rehabilitation area.

4 NEST BOX PROGRAM

Nest box management is undertaken in accordance with the BMP Section 6.4. Nest boxes will be installed to provide habitat opportunities in the short to medium-term for a number of arboreal fauna species including the Squirrel Glider (*Petaurus norfolcensis*).

Table 1: Nest Box Program Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	Completion Criteria
Nest box strategy including target species, habitat trees/feature, nest box designs maintenance and monitoring	Nest box plan developed following habitat assessment and pre-clearance surveys (Section 5.4).		
Nest box installation Includes installation of 18 Squirrel Glider boxes, however may be expanded as required.	Hollow bearing habitat features (nest boxes) installed (Section 6.4).		Nest boxes installed.
Maintenance and monitoring of installed nest boxes. Including monitoring for European bee invasion and repair/replacement	Monitoring in autumn and spring completed. Maintenance undertaken where required (Sections 6.4 and 7.1).	Annual nest box monitoring and maintenance (Sections 6.4 and 7.1).	Nest boxes monitored and maintained, being replaced where required.

Legend	Not commenced	In progress	Completed

AMBS Ecology & Heritage (AMBS) was commissioned to implement the Nest Box Program. The installation of nest boxes has occurred over six periods with the most recent installation in March 2021. No further nest box installations were required resulting from vegetation clearance activities and the recent installations in the rehabilitation areas are to provide additional habitat enhancement.

The current program involves monitoring:

- 18 nest boxes targeting the Squirrel Glider (*Petaurus norfolcensis*), installed during February 2013;
- 106 nest boxes targeting a variety of hollow-dependent species, installed during August 2013;
- 45 nest boxes targeting a variety of hollow-dependent species, installed during September 2014;
- 41 nest boxes targeting a variety of hollow-dependent species, installed during September 2016*;*
- 26 nest boxes targeting a variety of hollow-dependent species that were installed in the Rehabilitation Area during October 2019;
- 9 nest boxes targeting the Feathertail Glider (*Acrobates pygmaeus*) that were installed during September and October 2019;
- 24 nest boxes targeting a variety of hollow-dependent species that were installed in the Rehabilitation Area during May 2021; and
- Several additional boxes in poor condition that could not be removed historically due to being occupied.

A *Nest Box Programme for the Duralie Offset Area, Annual Report 2024* was completed by AMBS with works commencing in **September 2024** and completed in **April 2025** (**Appendix D**). A summary of the results from the report is provided below.

- A total of 14 species were recorded within nest boxes or showed signs of previous occupation with one of the species recorded listed as vulnerable under the *Biodiversity Conservation Act 2016* (BC Act), the Brush-tailed Phascogale (*Phascogale tapoatafa*)
- Four nest boxes contained hives of the European Honey Bee (*Apis mellifera*) and five nest boxes contained native bees
- A total of 261 out of 276 nest boxes, or approximately 95% have been occupied or shown signs of occupancy since their installation
- Occupancy of nest boxes has generally increased over time; however, the previous few years have experienced some noticeable fluctuations, possibly due to the climatic swings that have occurred over the previous several years, first with drought conditions and more recently the La Niña conditions which persisted between 2020 and 2023 bringing high levels of rainfall
- A total of 27 vertebrate species have now been recorded within nest boxes during the Nest Box Programme. This includes 16 species of mammal, 7 species of bird, 3 species of reptiles, and 1 frog species.

Plate 1 – Common Brushtail Possum (*Trichosurus vulpecula*)

Plate 2 – Brush-tailed Phascogales (*Phascogale tapoatafa*)

During the 2024/2025 reporting period, a review of the DCM Nest Box Program was undertaken by AMBS. The review concluded that over the eleven (11) years since the commencement of nest box installations, 92% of nest boxes within the DCM rehabilitation and Biodiversity Offset Areas have been utilised by vertebrate fauna. In accordance with Section 8.5 of the BMP, DCPL will reduce nest box monitoring to a biennial frequency, while annual maintenance inspections will continue to ensure ongoing functionality and habitat value of the installed nest boxes.

5 WEED CONTROL AND MONITORING

Weed control is undertaken in accordance with the BMP Section 5.9 and Section 6.5. The weed control program aims to manage weeds to minimise their impact on native flora and fauna.

Table 2: Weed Control Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	Completion Criteria
Weed Control/treatment program in remnant enhancement and regrowth management VMUs (vegetation management units)	Primary woody weed control (Sections 5.9 and 6.5). Primary control of priority target weeds described in Sections 5.9 and 6.5 commenced. Follow-up woody and priority weed control undertaken as per Sections 5.9 and 6.5.	Follow-up woody and priority weed control undertaken as per Sections 5.9 and 6.5.	Target/priority weed coverage within offset VMUs reduced by 90%.

Weed control/ management in Installation (revegetation) VMUs	Pre-cultivation spraying in all installation VMUs undertaken including control of exotic Sporobolus and fireweed (Figure 7 and Section 6.11). Second cultivation spray in all installation VMUs undertaken including control of exotic Sporobolus and fireweed where necessary (Section 6.11). Additional pre-planting weed treatment in all installation VMUs undertaken if required (Section 6.11). Control of competitive plants within revegetation areas as detailed in Section 6.11.	Additional pre-planting weed treatment in all installation VMUs undertaken if required (Section 6.11). Control of competitive plants within revegetation areas as detailed in Section 6.11.	Control of competitive plants within revegetation areas until maintenance phase (detailed in Section 6.11) is complete i.e. 90% of canopy and shrub species have survived 12 months after planting including replanting of lost species.
Monitoring and reporting	Monitoring and documentation of weed species, occurrence and densities a per Section 7.1.	Monitoring and documentation of weed species, occurrence and densities as per Section 7.1.	Monitoring and reporting undertaken.

The general procedure for controlling weeds involves:

- Monitoring to identify locations and densities of priority weeds;
- Identification of suitable control measures;
- Implementation of the selected control measure by a suitable qualified person; and
- Follow-up inspections to evaluate effectiveness of weed control.

Weed spraying activities are generally undertaken between the months of September and April each year. Physical management measures such as mechanical removal, slashing and/or back-burning can be undertaken at other times of the year as required.

In August 2013, Greening Australia conducted a weed assessment of the Biodiversity Offset Area to guide weed control priorities and actions. The assessment, presented as a mapping survey, identified and ranked weed infestations within each Vegetation Management Unit (**VMU**) based on species importance and infestation size. This information supports strategic weed control, helps contractors locate infestations, and aids ongoing monitoring of weed spread and control effectiveness

Two contractors are engaged at the DCM to undertake weed management activities on an ongoing basis. Follow-up weed treatment of all remnant enhancement and regrowth management VMUs continued from September 2024 through to April 2025 when weather permitted. Weed control will recommence in Spring 2024. The key species targeted include blackberry, lantana, privet, wild tobacco and giant parramatta grass.

Weeds monitoring to evaluate the effectiveness of control measures is undertaken in conjunction with the annual vegetation monitoring and is documented in the *Duralie Coal Mine Offsets Ecosystem Functional Analysis Monitoring 2025* (**Appendix F**).

The 2025 monitoring report indicates that the above average rainfall over the 2020 – 2025 period has benefitted weed species. The walkover survey recorded primarily woody weed species including blackberry, lantana, small leaved privet, wild tobacco, while to a lesser extent, 'softer' weeds such as moth vine were also observed. The largest thickets of blackberries were observed in VMUs AH and U. Lantana densities were highest in VMU P which is located in the heavily wooded Buckleys Range which can act as a source of weeds. A recommendation to expand weed control efforts was made, recognising that weed control will always be a requirement until the Offsets are surrendered.

6 FERAL ANIMAL CONTROL AND MONITORING

Feral animal control is undertaken in accordance with the BMP Section 5.10 and Section 6.5. The objective of feral animal control program is to manage feral animals to minimise their impact on native flora and fauna in the Biodiversity Offset Areas or the impact on agricultural production in other surrounding areas.

Table 3: Feral Animal Management Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	Completion Criteria
Feral animal control program	Initial study undertaken.	Feral animal control as required.	Feral animal numbers within offset areas minimised as evidenced through monitoring data.
Monitoring and reporting	Monitoring and documentation of feral animal species undertaken.	Monitoring undertaken.	-

AMBS was commissioned to undertake the initial invasive animal survey, in accordance with Section 5.10 of the BMP in 2013. The objective of the study was to determine the range of invasive animals that occur or are likely to occur within the DCM and Biodiversity Offset Areas and provide recommendations for invasive animal control.

MDP Vertebrate Pest Management has been engaged by DCPL since 2016 to implement feral animal control programs across property owned by DCPL including both the Stratford and Duralie Mining Leases and the Stratford and Duralie Biodiversity Offset Areas. During the reporting period no feral animal control programs were implemented at Duralie. Wild dog and fox control was last undertaken between **August 2023** to **September 2023**. The program involved a combination of trapping and shooting. The programs were productive with a total of three wild dogs, two feral cats and two foxes trapped and shot over the control programs.

During the control programs no non-target species were trapped. Soft jaw wild dog traps were used to trap targeted pest animals. Trail camera monitoring was used to find and locate wild dog and fox signs in the program area for trap placement. The wild dog and fox numbers were moderate in the previous controlled areas of the Stratford/Duralie Mining Lease and Biodiversity Areas which demonstrates the control programs are being successful in having an impact and lowering the numbers and presence of wild dogs and foxes within that area. The program is showing positive results of reducing the impacts of wild dogs and foxes within the area to the native animals and reducing the impact of livestock attacks to the surrounding agricultural properties.

Plate 3 – Wild Dog

Plate 4 – Wild Dog

In accordance with the BMP a feral animal monitoring survey was undertaken by AMBS Ecology & Heritage between August and September 2023 to monitor the success of control programs and determine priorities for ongoing control measures. The feral animal survey covered the Duralie Mining Lease and Duralie Biodiversity Offset Area.

An extracted summary of the survey results from the *Feral Animal Study of the Duralie Coal Mining Lease and Offset Areas, Gloucester Valley 2023* is provided below. The full report is provided in **Appendix E**.

> *A total of 16 feral species have been recorded in the study area in the past or during recent surveys or are considered to have the potential to occur. Twelve of these species were either not recorded or were recorded in very low numbers during the current surveys and are of little concern at the current time.*
>
> *In summary:*
>
> - *Foxes and Feral Cats may represent a threat to biodiversity within the study area, and both the Fox and Feral Cat are considered Priority Pest Animals under the Hunter Regional Strategic Pest Animal Management Plan 2018- 2022 (HRSPAMP);*
> - *Wild Dogs are present in the study area, and while they may or may not be a threat to biodiversity, are currently considered a Priority Pest animal in the HRSPAMP. Wild dog control in the study area should only focus on reducing negative impacts to stock and landholders, to ensure a balance is struck between the control of Wild Dogs and conservation of Dingoes;*
> - *The European Rabbit is present at low densities, but its abundance can increase rapidly, particularly if Dog, Fox and Cat numbers decrease, and it is also considered a Priority Pest Animal in the HRSPAMP; and*
> - *The abundances of Foxes, Feral Cats, Wild Dog and the European Rabbit within the study area are likely to be inter-related.*

A feral animal survey of the Duralie Mining Lease and Duralie Biodiversity Offset Area is scheduled to be undertaken in August 2025. Feral animal monitoring will guide the ongoing management efforts for controlling feral animals.

7 CONTROLLING ACCESS AND MANAGING GRAZING

Controlling access and managing grazing is undertaken in accordance with the BMP Section 5.11, 6.6 and 6.7.

Table 4: Managing Grazing and Agriculture Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	Completion Criteria
Managing grazing and agriculture	Livestock excluded from the Offset through installation of gates and fencing illustrated in Figure 9 (Section 6.7).		Livestock excluded from the offset.
Monitoring and maintenance of fencing and gate infrastructure	Monitoring of gates and fencing to exclude livestock. Where required, maintenance undertaken and documented (Section 7.1).	Monitoring of gates and fencing to exclude livestock. Where required, maintenance undertaken and documented (Section 7.1).	Gates and fencing monitored and maintained.

Table 5: Controlling Access Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	CC
Operational Review to facilitate site access for offset management activities including installation, inspection and bushfire management	Operational Review developed. Review includes road, fire trail and culvert construction and requirements for fencing and revegetation cultivation/site preparation[2]. Maintenance activities, particularly track maintenance and slashing have been considered (Section 6.7, plus related Sections 6.9 and 6.5).		Operational Review undertaken and outcomes implemented.
Community and stakeholder engagement	Assessment of surrounding landholders and the local community to evaluate opportunities for participation in implementation of this Biodiversity Management Plan undertaken. Local council consultation has commenced regarding placement of signage on the Johnson's Creek Road bisect area of the Offset (see Figure 9 for location) (Section 6.7). Signage has been installed on the Johnson's Creek Road bisect area of the Offset to alert drivers of potential fauna on the roads.		Opportunities for landholder and community participation in the BMP identified. Local council consulting regarding signage. Signage installed on Johnsons Creek Road.
Infrastructure including access tracks, fencing, fire trails and culverts	Access tracks, fire trails, firebreaks, fencing and culverts have been completed as per Figure 9 and the Operational Review[2] (Section 6.7).		Access related infrastructure identified in the Operational Review and completed.
Monitoring and maintenance of infrastructure including tracks, fire trails, signs, culverts and fences.	Monitoring and maintenance of all access tracks and fire trails has been undertaken[2] (Sections 6.7, 6.9 and 7.1).	Monitoring and maintenance of all access tracks, fire trails and warning signs has been undertaken[2] (Sections 6.7, 6.9 and 7.1).	Regular monitoring and maintenance program for roads, tracks, fire trails, signs, fences and culverts.

The implementation of the BMP management measures commenced in 2013. The BMP requires works to be undertaken to exclude livestock and control access to the Biodiversity Offset Areas.

Installation works to control access and manage grazing in the Biodiversity Offset Areas was completed in 2014. During the reporting period contractors were engaged to undertake maintenance activities on access tracks, culverts, gates and fences. The works included slashing of tracks, firebreaks and repairs to damaged gates and culverts. Additional signage was also installed on the key access points to the Biodiversity Offset Areas. Fencing repairs were completed following the March 2022 flood event.

The *Duralie Coal Mine Offsets Ecosystem Functional Analysis Monitoring 2025* (**Appendix F**) found fencing on external boundaries was in good condition. There were no signs of livestock at the time of the survey.
Livestock continue to be excluded from the Biodiversity Offset Areas with the exception of 'crash grazing' programs in preparation for revegetation activities following a field assessment by a qualified consultant.

Roadside Flora and Fauna signage has been installed in accordance with advice from Mid Coast Council (MCC) (previously Great Lakes Council (GLC)) and with regard to Australian Standard AS1742.2. Further correspondence was held with GLC Ecologist in 2015 regarding future requirements for traffic controls within the Biodiversity Offset Areas.

Plate 5 – Biodiversity Offset fencing and signage

8 BUSHFIRE MANAGEMENT

Bushfire management is undertaken in accordance with the BMP Section 5.12 and Section 6.9. The objective of bushfire management in the Biodiversity Areas is to prevent impacts from unplanned bushfire and to use fire to promote biodiversity.

Table 6: Bushfire Management Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	Completion Criteria
Operational Review to facilitate site access for offset management activities including installation, inspection and bushfire management.	Operational Review completed[2]. Areas addressed within the review include road, fire trail and culvert construction along with maintenance activities, particularly track slashing (Sections 5.12 and 6.7).		
Fire excluded from the offset for initial 3 years.	Fire excluded from offset prior to 2015 (Section 6.9).		Fire excluded from offset prior to 2015.
Bushfire management activities through hazard reduction actions installation and maintenance of relevant access infrastructure.	Access tracks, fire trails, firebreaks, fencing and culverts have been completed as per Figure 9 and the Operational Review 2 (Sections 6.7 and 6.9Fire management activities have been undertaken as required, including yearly access trail inspection, maintenance and repair of inaccessible tracks within one month of identification2, hazard reduction burning (Sections 5.12, 6.7 and 6.9).	Fire management activities have been undertaken as required, including yearly access trail inspection, maintenance and repair of inaccessible tracks within one month of identification2, hazard reduction burning (Sections 5.12, 6.7 and 6.9).	Regular bushfire management measures in place.
Monitoring and maintenance	Fuel loads monitored and documented (Sections 6.9 and 7.1). Identified issues incorporated into future management planning	Fuel loads monitored and documented (Sections 6.9 and 7.1). Identified issues incorporated into future management planning.	Fuel loads monitored and maintained. Risks identified and managed as part of part of hazard reduction actions.

Where possible, fire was excluded from the Biodiversity Offset Areas during the first three years (up to 2015) to assist with native regeneration. To assist with bushfire management, access tracks and firebreaks have been constructed and maintained as shown in the BMP Figure 9.

Hazard reduction burning has been undertaken in consultation with the NSW Rural Fire Service (RFS). Continued discussions have been held with the RFS to conduct fire management activities and any such activities will be assessed and implemented to ensure the most appropriate period for ecological burn activities whilst also giving due consideration to personnel and asset safety. Following the revegetation works, the aim is to exclude fire from the Biodiversity Offset Areas for at least five years to allow for tube-stock and seedlings to establish.

Monitoring of fuel loads to evaluate bushfire risk and guide bushfire hazard reduction activities is undertaken in conjunction with the annual vegetation monitoring. Further detail is included in Section 10 and **Appendix F**. Bushfire risk will continue to be mitigated through the maintenance of access tracks and fire breaks.

The 2025 and previous annual reports noted that VMUs that have been subjected to multiple disturbances such as ground preparation associated with revegetation and/or bushfire (Buckleys Range Fire) have LFA scores equivalent to, or exceeding their 2013 baseline score, indicating these VMUs have recovered from the past disturbance.

9 REVEGETATION MANAGEMENT

9.1 Seed Collection and Propagation

Seed collection and propagation is undertaken in accordance with the BMP Section 5.7 and 6.10.

Table 7: Seed Collection and Tube-stock Supply Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	CC
Collecting and propagating seed	Seed collection (of required species as specified in Section 6.10 and Appendix D) has commenced during vegetation clearance or an alternate seed source has been obtained. (Sections 5.7 and 6.10). Seed collection from cleared vegetation finalised (Section 5.7). Seed collection to obtain required quantities and species for future revegetation continued (Section 6.10, Appendix D).		Seed collection necessary to obtain required quantities and species for future revegetation completed.
Plant propagation/ tube-stock supply	Propagation of species required for revegetation work in Offsets commenced. Species and quantity as per guidelines in Section 5.7, 6.10 and Appendix D or adjusted based on additional literature/field trial results.	Propagation of species required for revegetation/supplementary infill planting work in Offsets undertaken as per guidelines in Sections 5.7 and 6.10 and Appendix D.	Plant propagation necessary to obtain quantities and species required for revegetation completed.

Revegetation in the BMP Revegetation Areas has occurred via seed and tube-stock. Local endemic species are preferentially used where a seed supply is available, however consideration will be given to the use of a high quality seed sourced further from the site as required.

Where possible, seed required for revegetation activities has been collected from within the Biodiversity Offset Area and surrounds. Specific tree and shrub species which have not been available for collection have been sourced through external third-party suppliers. Further seed collection may be undertaken if found necessary to meet the completion criteria of the BMP offset revegetation and mine site rehabilitation.

Kleinfelder, along with several nurseries have been engaged to assist in the propagation of native plant species with tube-stock grown under controlled nursery conditions and delivered to site as required for revegetation works.

9.2 Revegetation and Regeneration

Revegetation management is undertaken in accordance with the BMP Section 6.11 and 6.12. The aim of revegetation is to establish a range of habitat niches including native canopy, and understorey, with the goal of achieving self-sustaining vegetation communities as well as increasing the resilience to identified risks such as fire, herbivory and future weed invasion. The Revegetation Areas in the Biodiversity Areas will be revegetated to substantially increase the area of native vegetation and maximise habitat diversity and a range of successional stages.

Table 8: Revegetation Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	Completion Criteria
Operational Review	Operational review including access, tracks and cultivation requirements for implementing revegetation completed (Section 6.7).		Operational Review completed and implemented.
Implementing Revegetation - Weed management and maintenance	Pre-cultivation spraying in all installation VMUs including control of exotic Sporobolus and fireweed undertaken (Sections 6.5 and 6.11). Pre-plant weed treatment in all installation VMUs as per Figure 7 undertaken as required (Sections 6.5 and 6.11). Control of competitive plants within revegetation areas as detailed in Section 6.11. Maintenance including watering and herbivory controls, undertaken as required (Section 6.11).	Pre-plant weed treatment in all installation VMUs as per Figure 7 undertaken as required (Sections 6.5 and 6.11). Control of competitive plants within revegetation areas as detailed in Section 6.11. Maintenance including watering and herbivory controls, undertaken as required (Section 6.11).	Pre-planting weed control undertaken, including control of threatening weeds Sporobolus and Fireweed. Competitive plants controlled during revegetation establishment.
Implementing revegetation	Initial cultivation of all proposed trial installation VMUs commenced (Vegetation Management Units I, S, U and AB.) according to guidelines in Section 6.11. Trial revegetation for VMUs I, S, U and AB completed. Plant palettes adjusted where field trails or research demonstrate alternative species/density (Section 6.10). Propagation of species required for revegetation work in Offsets commenced. Species and quantity as per guidelines in Sections 5.7 and 6.10 and Appendix D.	Revegetation planting finalised. All plants prescribed in Appendix D have been installed. (Section 6.11). Based on learnings from the revegetation trials, planting of tube-stock/direct seeding in installation VMUs according to species palette and quantity guidelines in Appendix D and Section 6.1 has been completed	Species type and quantities planted according to threshold guidelines in the species palette or as guided by on site trials. 90% survival of canopy and shrub-layer plants 12 months after installation, including replacement of lost plants to above threshold levels. Revegetation areas have met Assessment Criteria and Completion criteria described in Table 24, Section 8 (e.g. 90% of all initial canopy species rates are present within VMUs).
Monitoring and reporting	Monitoring and reporting of trial revegetation results, changes to plant palette, plant health, establishment success and maintenance activities. (Section 7.1).	Monitoring and reporting of trial revegetation results, changes to plant palette, plant health, establishment success and maintenance activities. (Section 7.1).	Annual Monitoring and reporting completed.

Revegetation Planning, Trials and Schedule

Pre-cultivation weed spraying was undertaken in Summer to Autumn 2016 in preparation for the trial revegetation works. Initial revegetation works for VMUs I, S and U commenced in Autumn of 2016. Preparation works were completed including seed collection, inoculation, growing of tube-stock and ground preparations including weed spraying. The trial revegetation program included methods involving both tube-stocking, and direct seeding. Ground preparation was site-specific and included weed spraying, crash grazing and back burning as required.

Revegetation works in VMUs AF, AE, AA and Z were undertaken during **December 2016** and included ground preparation and direct seeding of approximately 80 hectares. Due to the inability to undertake controlled burning, slashing was undertaken as an alternative option prior to direct and broadcast seeding.

Plate 6 - Loading seed for revegetation works.

Plate 7 - Spreading native tree and shrub seed.

Revegetation Implementation

Tube-stock was propagated during Summer 2016/2017 in preparation for Autumn planting in 2017. VMUs Y, AD and S, (approximately 40 hectares), located on alluvial flats near Mammy Johnsons River were prepared for planting by slashing, spraying for weeds and ripping. This was followed by the planting of approximately 7,200 tube-stock in April 2017. The results of the 2017 revegetation activities are reported in the DCM Biodiversity Offsets Revegetation Program Report Spring 2016 - Autumn 2017.

Following the hazard reduction burning in August 2017, revegetation works in VMUs Z, AB and AC were undertaken. In September 2017, direct seeding of approximately 52 hectares was completed, followed by harrowing.

Tube-stock planting of VMUs F, V, W and X was proposed for Autumn 2018 including approximately 16,000 plants over 61 hectares. The native tree seed was propagated over the Summer of 2017/2018 by Cumberland Plain Seeds. However, due to the slower than expected establishment of the tube-stock, planting was postponed during winter and completed in **September 2018**. The results of the 2018 revegetation activities are reported in the *DCM Biodiversity Offsets Results of Spring 2018 Planting Report*.

Plate 8: Tube-stock being prepared for the biodiversity offset

Plate 9: Planted tube-stock

Plate 10: *Tube-stock planted in September 2018*

Plate 11: *Tube-stock planted in September 2018*

During Spring 2019 tube-stock was propagated in preparation for further revegetation works in Autumn 2020 to reach the required woodland density and species diversity in VMUs F, V, W, X, AA and AH. The results of the 2020 revegetation activities are reported in the *DCM Biodiversity Offsets Planting Program Report Autumn 2020*.

During Spring 2020 tube-stock was propagated in preparation for further revegetation works in Autumn 2021 to reach the required woodland density and species diversity in VMUs AB, AC, AE, AF, Z, U and S.

The 2021 Duralie Offsets Planting Program revegetated, or in-fill planted into seven VMUs. The 2021 planting campaign successfully installed 24, 718 plants over 112 ha of the Offsets areas. This included the large sections of Grey Box – Forest Red Gum – Grey Ironbark Open Forest in VMUs AB, AE, AF and Z, 89 ha of the total. These areas had been unsuccessfully seeded previously, potentially due to drought conditions. The installation of the tube-stock and hikos ensures that revegetation of the three strata has begun.

The 2022 Duralie offset infill planting areas proposed in VMU Y and AD did not go ahead due to high rainfall totals throughout the year.

The 2024 Duralie Offsets Planting Program focused on infill planting within ten VMUs across five vegetation communities. Although increased rainfall in April and May restricted access to several VMUs, the program successfully planted 7,632 tube-stock across eight VMUs in three vegetation communities.

The proposed autumn 2025 program was postponed due to the high rainfall totals recorded during the first half of the year and has been rescheduled for spring 2025.

The 2026 infill planting program is being finalised and will focus on areas across the Duralie Offsets which require further infill planting or that could not be previously accessed.

Monitoring

Following the initial revegetation works in 2015, annual vegetation monitoring (including LFA and vegetation dynamics) was undertaken in **January 2017** and continues to be undertaken annually. Vegetation monitoring was undertaken again between **March and April 2025**. The results from the biodiversity offset monitoring are shown in Section 10. Results from the annual monitoring will be used to measure revegetation against the performance criteria and completion criteria and to determine future works requirements and maintenance activities.

10 BIODIVERSITY OFFSET MONITORING AND REPORTING

The Biodiversity Offset monitoring and reporting program is prescribed in the BMP Section 7. The program aims to monitor and report on the effectiveness of the BMP management measures and progress against the detailed performance and completion criteria.

Table 9: Monitoring and Reporting Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	CC
Monitoring and reporting	Monitoring and reporting has been undertaken[3] as per requirements in Sections 7.1 and 7.2. Independent Environmental Audit has been supplied to the NSW Secretary of the DP&E for review.	Monitoring and reporting has been undertaken[3] as per requirements in Sections 7.1 and 7.2.	Monitoring requirements completed when all completion criteria are achieved in accordance with Section 8 (e.g. 357.5 ha of revegetated woodland/open woodland habitat areas and 36 ha of revegetated forest habitat areas are a self-sustaining ecosystem).

As described in the Section 7 of the BMP an annual report reviewing DCPL's environmental performance and progress against the requirements of the BMP including monitoring and reporting is prepared annually and appended to the *Duralie Coal Mine Annual Review*. The Annual Biodiversity Report, reports on monitoring for:

- Effectiveness of revegetation in the offset area;
- Usage of the offset areas by fauna;
- Effectiveness of weed control;
- Effectiveness of feral animal control; and
- Nest box monitoring program.

10.1 Habitat and Vegetation Condition Monitoring

Habitat and vegetation condition monitoring is undertaken to quantitatively measure the change in habitat and vegetation condition over time. The visual monitoring and photo monitoring programs are undertaken concurrently with the vegetation monitoring to provide additional information on the change of the Biodiversity Offset Areas over time and inform maintenance requirements.

To monitor the effectiveness of revegetation in the Biodiversity Offset Areas, Greening Australia was commissioned to undertake the baseline monitoring of LFA and vegetation structure within the Biodiversity Offset areas in **February 2013**. The baseline monitoring provides information to track the progression towards meeting the completion criteria of the BMP.

The annual vegetation and landscape function monitoring continues to be undertaken and was repeated in **February 2024.** The results are provided in the *Duralie Coal Mine Offsets Ecosystem Functional Analysis Monitoring Report 2025* prepared by Kleinfelder (**Appendix F**). An extracted summary is reproduced below. The next round of monitoring is scheduled for 2026.

> *In accordance with Section 7 of the Duralie Coal Mine – Biodiversity Management Plan, monitoring and assessment of the effectiveness of the Offset Area revegetation is required. This assessment will be conducted using the stipulated methodologies which are both components of Ecosystem Functional Analysis (EFA) which include Landscape Functional Analysis (LFA) and Vegetation Dynamics to measure the progression of the rehabilitation towards a self-sustaining ecosystem, floristic surveys and walkover surveys to assess the effectiveness of the revegetation efforts and weed control. The Offsets Area have been divided into Vegetation Management Units (VMUs) ease of management and based upon vegetation community. There were 33 VMUs established across the Offsets Area. A subset of VMU transects, which were established in the 2013 baseline survey, were selected.*
> *Overall, the revegetation of the Duralie Coal Mine offsets areas is progressing well with the results of the LFA monitoring improving and exceeding the 2013 VC comparison indices in the majority of the VMUs.*
>
> - *This year's monitoring of the biophysical processes measured by the LFA indices has shown that the VMUs have largely achieved targets and any variation that has been recorded is almost entirely due to seasonal factors, such as high rainfall and the subsequent stimulation of vegetation growth.*
> - *The older areas of revegetation – VMUs AD, Y, S and U - have individual trees measured at 10 m in height with many individual trees bearing fruit. To date only VMU S can confidently be said to have second generation seedlings, but with so many trees bearing fruit, other VMUs will also have second generation seedlings when conditions are favourable.*
> - *The combination of good survival and excellent natural recruitment was stimulated by the above average rainfall experienced over the previous three years.*

10.2 Fauna Monitoring

Monitoring of fauna usage within the Biodiversity Areas is conducted every three years to document the fauna species response to improvement in vegetation and habitat in the Biodiversity Areas and assess the performance in providing habitat for a range of vertebrate fauna. The surveys include an assessment of habitat complexity, species richness and abundance.

AMBS was engaged to undertake fauna monitoring within the Biodiversity Offset Areas and native mine rehabilitation areas during Spring 2024. The results are provided in the *DCM Fauna Surveys of the Offset and Mine Rehabilitation Areas, December 2024* (**Appendix G**). The previous fauna monitoring within the Biodiversity Offset Areas and native mine rehabilitation areas was undertaken in 2021 and the next round of fauna monitoring is scheduled for spring 2027. An extracted summary of the 2024 report is provided below.

"Targeted fauna surveys were undertaken at five sites within the Duralie Offset Area and two sites in the Duralie Mine Rehabilitation Area between October and December 2024. At most sites survey techniques included pitfall traps, funnel traps, Elliott A traps, harp traps, ultrasonic call recording, spotlighting, diurnal bird surveys and reptile searches. Opportunistic observations of signs of fauna were noted throughout the field survey period, including during transit between surveys sites".
"A total of 160 species of vertebrate were recorded, comprising 15 frogs, 13 reptiles, 97 birds and 35 mammals…, most of which were native. A similar number of frog, reptile, mammal and bird species were recorded at Mine Rehabilitation Area sites compared with Offset Area sites. Two introduced species were recorded during the surveys, including the Black Rat (Rattus rattus) and Red Fox (Vulpes vulpes)".

"Fourteen of the species detected are listed as threatened or migratory on the schedules of the Biodiversity Conservation Act 2016 (NSW) and/or the Environment Protection Biodiversity Conservation Act 1999 (Cth).

Plate 12: Koala (*Phascolarctos cinereus*)

Plate 13: Eastern Chestnut Mouse (*Pseudomys gracilicaudatus)*

11 MAMMY JOHNSONS RIVER STABILISATION

In accordance with Section 6.8 of the BMP a detailed design for the in-stream rehabilitation of a severely eroded section of Mammy Johnsons River (MJR) has been prepared by Alluvium (2013) (**Appendix H**). In 2023 Hydrobiology Consultants were engaged to provide a detailed review of the streambank stabilisation advice prepared by Alluvium in 2013 to inform further planning.

No works on the MJR bank stabilisation have commenced during the reporting period.

Table 10: MJR Bank Stabilisation Performance Criteria (PC) and Completion Criteria (CC)

Management Action	Completed Activities to June 2018	Annually from June 2018 onwards PC Maintenance Phase	Completion Criteria
River bank stabilisation design	Design for the in-stream rehabilitation of a severely eroded section of Mammy Johnsons River has been prepared. Office of Water engaged regarding plan approval[1] (Section 6.8).		Design of stabilisation plan completed and approved by the Office of Water
River bank in-stream rehabilitation		In-stream rehabilitation works undertaken[1] (Section 6.8).	Rehabilitation of severely eroded section of Mammy Johnsons River completed.

12 LONG TERM SECURITY AND CONSERVATION BOND

12.1 Long Term Security

In accordance with Condition 42, Schedule 3 of Project Approval 08_0203, DCPL is required to make suitable arrangements for the long-term security of the Duralie Extension Project Biodiversity Offset Area. DCPL used the mechanisms available under section 88E(3) of the NSW *Conveyancing Act 1919*, namely:

- Registration of a Positive Covenant under section 88E(3) of the NSW *Conveyancing Act 1919*; and
- Registration of a Restriction on the Use of Land by a Prescribed Authority under section 88E(3) of the NSW *Conveyancing Act 1919*.

Public Positive Covenants and Restrictions on the Use of Land for the Biodiversity Offsets have been registered on title with NSW Land and Property Information (LPI) in **May 2015**.

12.2 Conservation Bond

In accordance with Condition 44, Schedule 3 of Project Approval 08_0203, DCPL is required to lodge a Conservation Bond with the DP&E which covers the cost of implementing the Biodiversity Offset Strategy detailed in the BMP.

The conservation bond for the Biodiversity Offset areas was calculated by Greening Australia and verified by Rider Levett Bucknell in December 2013. The terms of the conservation bond in the form of a Bank Guarantee were approved by NSW Department of Planning & Environment (DP&E) on 12 December 2013. The Bank Guarantee has been subsequently provided to DP&E.

In December 2023, an Independent Environmental Audit of the DCM was undertaken in accordance with PA 08_0203. A revision of the BMP was approved in February 2023 in accordance with PA 08_0203 Schedule 5 Condition 4. Following this, a revision of the conservation bond will be prepared and lodged with DP&E in accordance with Schedule 3 Condition 45.

A revision of the Duralie Offset Conservation bond has commenced within the reporting period. The revised conservation bond will be lodged with DPIE in the next reporting period.

13 COMMONWEALTH EPBC APPROVAL COMPLIANCE REPORTS

In accordance with Condition 20 of the Commonwealth Approval [EPBC 2010/5396], during the reporting period DCPL submitted to the Department of Agriculture, Water and Environment (DAWE) the following compliance report:

- *Duralie Coal Extension Project Annual Compliance Report 2024-2025,* submitted on **12 April 2025** (Condition 20) (**Appendix I**).

Additionally, the following reports were submitted annually for the first five years following the commencement of the operation:

- *DCM Implementation of the Giant Barred Frog Management Plan Annual Reports (Condition 10);*
- *DCM Implementation of the Biodiversity Management Plan Annual Reports (Condition 14(i)).*

These reports are now required to be submitted every **fifth** (5) year before the anniversary of the commencement of the operations.

APPENDICES

Appendix A: DPE approval of the BMP

Appendix B: DCM Annual Review 2024 – Figure 4 Mining and Rehabilitation Areas

Appendix C: Pre-Clearance Surveys – Spoil Emplacement and Coal Shaft Creek Rework 2024

Appendix D: AMBS Ecology & Heritage - Nest Box Programme for the Duralie Offset Area, Annual Report for 2024

Appendix E: AMBS Ecology & Heritage - Feral Animal Study, Duralie Coal Mining Lease and Offset Areas 2023

Appendix F: Kleinfelder - Duralie Coal Mine Offsets Ecosystem Functional Analysis Monitoring 2025

Appendix G: AMBS Ecology & Heritage - DCM Fauna Surveys of the Offset and Mine Rehabilitation Areas 2022

Appendix H: Alluvium - Mammy Johnson's River – Bank Stabilisation Detailed Design 2013

Appendix I: Duralie Coal Extension Project Annual Compliance Report 2024-2025

(Appendices available on request)