




# MOOLARBEN COAL PROJECT 2020 COMPLIANCE REPORT

EPBC 2007/3297

EPBC 2013/6926

EPBC 2008/4444

EPBC 2017/7974

<b>Project Name</b>	Moolarben Coal Complex
<b>Approval Holder</b>	Moolarben Coal Mines Pty Ltd Moolarben Coal Operations Pty Ltd
<b>EPBC Reference</b>	2007/3297 2013/6926 2008/4444 2017/7974
<b>Approved Actions</b>	<p>The establishment of a coal mine and associated infrastructure 40 kilometres east of Mudgee to generate approximately 10Mtpa of product coal and as described in the referral received under the Act on 16 February 2007(EPBC 2007/3297);</p> <p>To modify and extend the Moolarben Coal Project (Stage 1), approximately 40km north east of Mudgee, NSW. (EPBC 2013/6926).</p> <p>To develop a new open cut coal mine and two underground coal mines, 40 km north-east of Mudgee, NSW and as described in the referral received under the EPBC Act on 9 September 2008 and the request for variation received under the EPBC Act on 27 February 2012.</p> <p>To Modify the extend the Moolarben Coal Project (Stage1 and Stage 2), 40 km north of Mudgee, NSW (see EPBC Act referral 2017/7974).</p>
<b>Reporting Period</b>	1 January 2020 to 31 December 2020
<b>Version</b>	FINAL
<b>Declaration of Accuracy</b>	
<p>In making this declaration, I am aware that sections 490 and 491 of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.</p>	
<b>Signature of authorised reporting officer</b>	
<b>Name of authorised reporting officer</b>	Graham Chase
<b>Title of authorised reporting officer</b>	Environment and Community Manager
<b>Date</b>	31 March 2021
<b>Organisation Name</b>	Moolarben Coal Operations Pty Ltd
<b>Organisation ACN</b>	077 939 569

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## 1.0 INTRODUCTION

The Moolarben Coal Complex (MCC) is located in the Western Coalfield of New South Wales (NSW) approximately 40 kilometres (km) north of Mudgee to the south east of Ulan. The Moolarben Coal Complex is located within the Mid-Western Regional Local Government Area (LGA). Figure 1 depicts the regional location of the Biodiversity Offsets Areas and the Moolarben Coal Complex and Table 1 summarises the Moolarben Coal Complex offsets by approval.

Moolarben Coal Operations Pty Ltd (MCO) is the operator of the Moolarben Coal Complex on behalf of the Moolarben Joint Venture (Moolarben Coal Mines Pty Ltd [MCM], Yancoal Moolarben Pty Ltd (YM) and a consortium of Korean power companies). MCO, MCM and YM are wholly owned subsidiaries of Yancoal Australia Limited (Yancoal).

All mining operations are conducted in accordance with NSW Project Approval (05\_0117) (Moolarben Coal Project Stage 1) as modified, and NSW Project Approval (08\_0135) (Moolarben Coal Project Stage 2) as modified. Current mining operations undertaken across MCC have approval until 31 December 2038.

The current mining operations are undertaken in accordance with Approval Decisions (EPBC 2007/3297), (EPBC 2013/6926), (EPBC 2008/4444) and (EPBC 2017/7974) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This report details activities and compliance with EPBC 2007/3297, EPBC 2013/6926, EPBC 2008/4444 and EPBC 2017/7974 for the period 1 January 2020 to 31 December 2020

**Table 1:** EPBC Approval Biodiversity Offset Areas

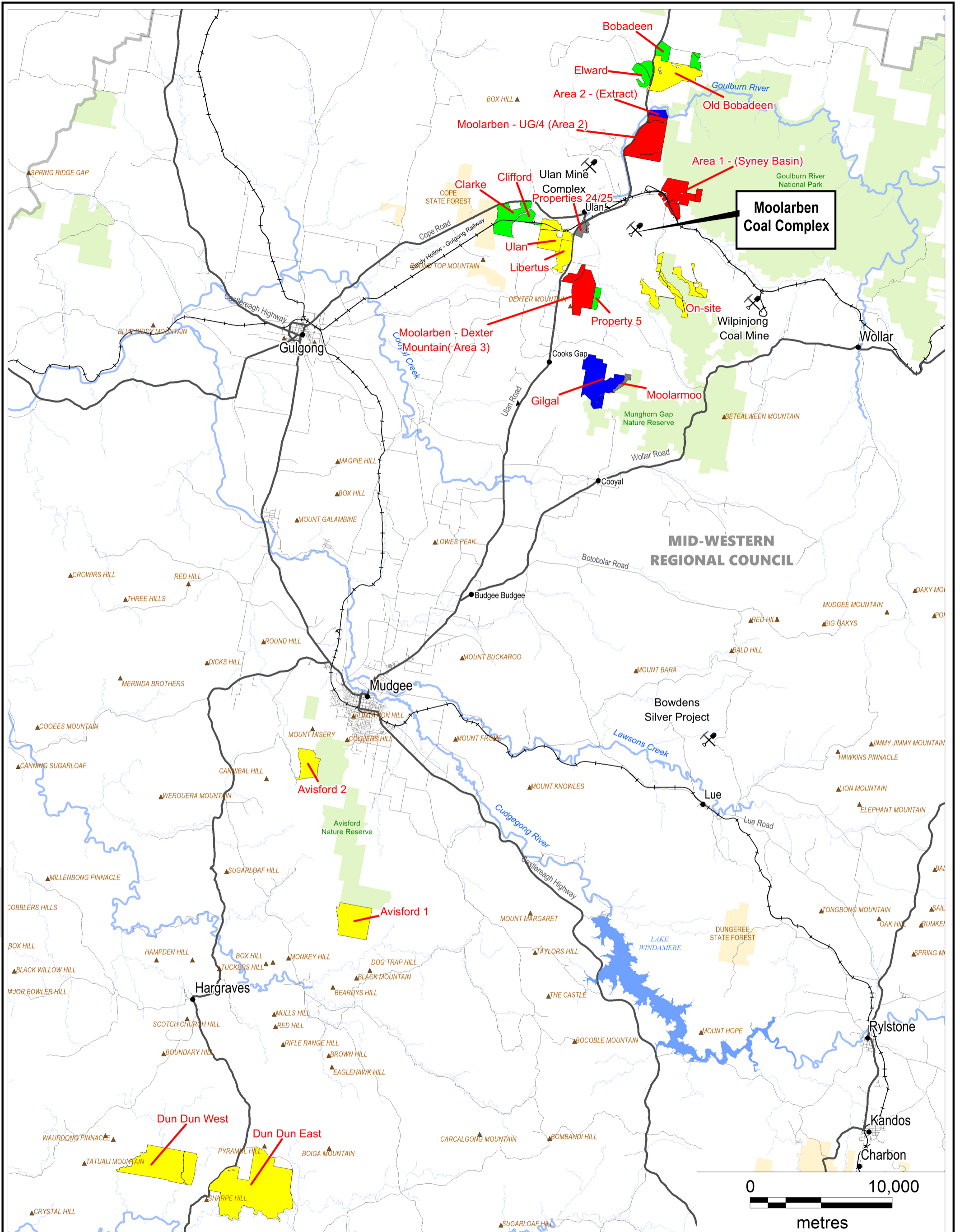
EPBC Approval	Offset		
2007/3297	• Area 1 (Sydney Basin)	• Area 2 (Moolarben)	• Area 3 (Property 6)
2013/6926	• Elward • Bobadeen West	• Bobadeen East • Clifford	• Area 3 (Property 5) • Clarke
2008/4444	• Old Bobadeen • Ulan • Libertus	• On-site • Avisford 2 • Avisford 1	• Dun Dun West • Dun Dun East
2017/7974	• Area 1 (Sydney Basin)	• Rehabilitation (Credits)	• Gilgal (Credits)
Non EPBC offsets	• Moolarmoo	• Property 24/25	

## 2.0 DESCRIPTION OF ACTIVITIES

During the reporting period the following activities have been undertaken:

- Land preparation and disturbance in accordance with the VCPLMP, including pre-clearance surveys, salvage of habitat features and fauna management within action areas.
- Collection of locally sourced native seed.
- BOA management including fencing, access maintenance, weed and vertebrate pest management.
- Continued assisted regeneration across relevant BOAs including planting of approximately 70,000 tube stock to supplement natural regeneration within the Ulan 18, Bobadeen and Dexter Mountain Biodiversity Offset clusters.
- Monitoring in accordance with the Biodiversity Offset Management Plan (BOMP), Landscape Management Plan (LMP) and Rehabilitation Management Plan (RMP).

- A 'Positive Covenant' and a 'Restriction on the Use of Land by a Prescribed Authority' under Section 88E(3) the NSW *Conveyancing Act 1919* were executed by MCO and the NSW Department of Planning, Industry and Environment (DPIE) to secure seven (7) offsets.
- Submission of Complex Wide Biodiversity and Offset Management Plan to the Department of Agriculture, Water and the Environment (DAWE).



**Legend**

- Local Government Area
- National Park / Nature Reserve
- State Forest
- Mining Project

**EPBC Approval**

- 2007/3297
- 2008/4444
- 2013/6926
- 2017/7974
- Non EPBC



**Figure 1**  
**Regional Location**

### 3.0 COMPLIANCE TABLES (2007/3297) (2008/4444) (2013/6926)

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
EPBC 2007/3297			
1	<p>In order to protect the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed ecological community, the person taking the action shall make suitable arrangements within 12 months of this approval to:</p> <p>(a) Transfer at least 130 hectares of the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland listed ecological community to the NSW Minister for Climate Change Environment and Water offset, on a "like for like" basis, the 65 hectares that would be cleared by the project at an offset ratio of 2:1; and</p> <p>(b) Provide the NSW Department of Environment and Climate Change (DECC) with funds (which at the discretion of DECC may include an in-kind contribution) to cover any reasonable costs associated with the transfer and ongoing management of this land.</p>	Compliant	Completed prior to period.
1A	The approval holder must undertake the action within the area enclosed by the red line designated as 'DA Boundary' in the map at Appendix 1. The approval holder must not undertake the action within the areas designated as 'Areas not part of the Action' in the map at Appendix 1.	Compliant	Noted. Action undertaken within the DA Boundary and not undertaken within the areas designated as 'Areas not part of the Action'.
2	<p>In order to protect the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed ecological community, the person taking the action shall in accordance with the Rehabilitation and Offset Management Plan (See Condition 3 below):</p> <p>(a) Revegetate at least 38 hectares of disturbed land on the "Red Hills" property with Yellow Box-White Box-Blakely's Red Gum vegetation;</p> <p>(b) Revegetate at least 143 hectares of cleared land on the "Red Hills" property with suitable native vegetation to improve wildlife corridor linkages;</p> <p>(c) Conserve and enhance at least 1211 hectares of existing native vegetation onsite within the areas marked with green crosshatching designated as 'Biodiversity Offset Area' shown in the map at Appendix 2; and</p> <p>(d) make arrangements, as approved in writing by the Minister, to protect these offset areas from development for the long term.</p>	Compliant	<p>Revegetation works were commenced in a prior period.</p> <p>MCO continues to conserve and enhance Area 1, Area 2 and Area 3.</p> <p>During the reporting period a 'Positive Covenant' and a 'Restriction on the Use of Land by a Prescribed Authority' under Section 88E(3) of the NSW <i>Conveyancing Act 1919</i> was executed by MCO and the NSW Department of Planning, Industry and Environment (DPIE) to secure the Area 1 and Area 2 offsets. The executed covenants will be registered on title.</p> <p>Area 3 was secured in a prior reporting period.</p>
3	In order to protect the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed ecological community, the person taking action shall prepare and implement a detailed Rehabilitation and Offsets Management Plan for the project to the satisfaction of the Minister for the	Compliant	The Landscape Management Plan was approved by the Department of Agriculture, Water and the Environment (DAWE <sup>1</sup> ) in <b>2011</b> .

<sup>1</sup> References to DAWE includes the previous relevant commonwealth agencies responsible for administering the EPBC Act.

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
	<p>Environment and Water Resources. The proponent shall progressively rehabilitate the site to the satisfaction of Minister for the Environment and Water Resources and the NSW Department of Primary Industries, in general accordance with the proposed Rehabilitation and Offset Management Plan. The rehabilitation and Offset Management Plan must include:</p> <p>(a) The rehabilitation objectives for the site, vegetation offsets and landscaping;</p> <p>(b) A description of the short, medium and long-term measures that would be implemented to:</p> <ul style="list-style-type: none"> <li>• Rehabilitate the site</li> <li>• Implement the vegetation offsets; and</li> <li>• Landscape the environmental bunds;</li> </ul> <p>(c) Performance and completion criteria for the rehabilitation of the site, implementation of the vegetation offsets, and landscaping of the environmental bunds;</p> <p>(d) A detailed description of the measures that would be implemented over the next 3 years including the progressive rehabilitation of mining areas and progressive implementation of the vegetation offset areas referred to in Condition 2.</p> <p>(e) A program to monitor the effectiveness of these measures, and progress against the performance and completion criteria (see (c) above);</p> <p>(f) A description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and</p> <p>(g) Details of who would be responsible for monitoring, reviewing, and implementing the plan.</p> <p>Coal mining operations must not commence until the plan has been approved. The approved plan must be implemented.</p>		<p>The NSW Project Approval Rehabilitation Management Plan was approved on <b>30 October 2020</b>.</p> <p>This report, Appendix A and B.</p>
4	<p>The person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, by 31 March for the preceding calendar year. Annual reports must be published until the Minister is satisfied that the person taking the action has complied with all conditions of the approval. Documentary evidence providing proof of the date of publication must be provided to the Department at the same time as the compliance report is published.</p>	Compliant	This report.
5	<p>Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister'. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister</p>	Compliant	Noted.
6	<p>If the Minister believes that it is necessary or desirable for the better protection of the listed threatened species and ecological communities to do so, the Minister may request that the person taking the action make specified revisions to the plans, reports or management strategies approved pursuant to</p>	Compliant	Noted.



Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
	paragraphs 1, 2 and 3, and submit the revised plan, report or strategy for the Minister's approval. The person taking the action must comply with any such request. The revised approve plan, report or strategy must be implemented.		
7	If at any time after 5 years from the date of this approval, the Minister notifies the person taking the action in writing that the Minister is not satisfied that there has been substantial commencement of coal mining operations, the action must not thereafter be commenced without the written agreement of the Minister.	Compliant	Action commenced <b>2009</b> .
EPBC 2008/4444			
1	The approval holder must not clear more than 1, 534 hectares of native vegetation within the defined footprint at Schedule 1.	Compliant	At the end of the period <b>658 Ha</b> of the approved <b>1,534 Ha</b> of native vegetation within the defined footprint had been disturbed.
2	To mitigate the impacts of the proposal on the Large-eared Pied Bat, Southern Long-eared Bat, Regent Honeyeater, Swift Parrot and the Spotted-tail Quoll, the approval holder must prepare and submit, prior to the proposed date of commencement of the action, a mine site Vegetation Clearance Protocol and Landscape Management plan (VCPLMP) for the Minister's written approval. The VCPLMP must; a. Delineate areas to be cleared, describe pre-clearance survey methods, specify actions to minimise fauna impacts and detail vegetation clearance procedures. b. Require collection and stockpiling of habitat features important to threatened fauna species for reinstatement in rehabilitation areas. c. Require use of native, locally sourced seed for propagation for rehabilitation activates. d. Specify a two stage clearing protocol where non-habitat trees are cleared 24 hours prior to any habitat trees are cleared, to encourage fauna to move out of an area. The approval holder must not commence until the VCPLMP is approved by the Minister. The approved VCPLMP must be implemented.	Compliant	VCPLMP was approved by the minister on <b>29 May 2015</b> . Action commenced <b>2 August 2015</b> . The VCPLMP continues to be implemented.
3	To compensate for the loss of 123.3 hectares of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBGW) ecological community and 902 hectares of habitat for EPBC listed threatened species, the approval holder must prepare and submit (within 3 months after the approval), a Biodiversity Offset Management Plan (BOMP) for the proposed EPBC Offset Areas, for the Minister's written approval. The BOMP must; a. Identify those lands described as the Offset Areas at Schedule 2 (Figures 1-7) of this notice that are necessary to achieve the outcomes required by the Environmental Offsets Policy 2012. This must include offset attributes, shapefiles, textile descriptions and maps to clearly define the location and boundaries of the offset area (s). b. Provide a survey and description of the current condition (prior to any management activities) of the offset areas identified in Condition 3a. c. Detail management actions and regeneration and revegetation strategies to be undertaken on the	Non-Compliant	Following consultations with the DAWE on the BOMP, a draft complex wide BOMP was submitted by MCO to the DAWE for consultation on the <b>30 November 2018</b> . The Offset security terms had not been finalised at this time.  Subsequent to comments being received from DAWE, MCO met with representatives of the DAWE on <b>11 April 2019</b> to discuss the Moolarben Coal Complex NSW and Federal approvals.  DAWE suggested on <b>11 April 19</b> that variations to EPBC 2007/3297, EPBC 2013/6926 and EPBC 2008/4444 be made following grant of EPBC 2017/7974 so that the approach to

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
	<p>offset areas to improve the ecological quality of these areas, including:</p> <p>I. a description and timeframe of measures that would be implemented to improve the condition of the ecological communities on the site;</p> <p>II. Performance and completion criteria for evaluating the management of the offset area, and criteria for triggering remedial action;</p> <p>III. a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;</p> <p>IV. a description of potential risks to the successful implementation of the plan, a description of the measures that will be implemented to mitigate against these risks and a description of the contingency measures that will be implemented if defines triggers arise; and</p> <p>V. details of who would be responsible for monitoring, reviewing, and implementing the plan.</p> <p>The approved BOMP must be published on the approval holder's internet website, within 1 month of being approved and for a period of 5 years thereafter. The approved BOMP must be implemented.</p>		<p>condition wording can be consistent with EPBC 2017/7974. It was also agreed the BOMP structure and content needed to be informed by the outcomes of any approval condition variations to EPBC 2007/3297, EPBC 2013/6926 and EPBC 2008/4444. On <b>6 June 2019</b>, MCO requested confirmation from the DAWE that the BOMP review and update would therefore occur following variation of these conditions.</p> <p>Subsequently DAWE advised that the BOMP was required to be approved prior to the processing of condition variations. Ongoing liaising with DAWE has occurred throughout 2020 relating to the sequence of progressing the Complex wide BOMP and EPBC condition variations. A Complex wide BOMP was submitted by MCO to the DAWE on <b>31 July 2020</b> with a revised version submitted on <b>5 December 2020</b> addressing DAWE comments.</p> <p>MCO continues to progress the development of the Complex Wide BOMP in consideration of both State and Federal Department feedback.</p>
4	<p>To compensate for the loss of 123.3 hectares of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBGW) ecological community and 902 hectares of habitat for EPBC listed threatened species, within 24 months of the date of this approval, the approval holder must secure the lands identified as the Offset Areas at Schedule 2 (Figures 1-7) of this notice as a biodiversity offset by a legal instrument under relevant nature conservation legislation on the title of the land. This instrument must:</p> <p>a. Provide for the protection of the land in perpetuity;</p> <p>b. Prevent any future development activities, including mining and mineral extraction;</p> <p>c. Ensure the active management of the land; and</p> <p>d. Be provided to the Department within 3 months of it being issued, as evidence of compliance with this condition.</p>	Compliant	<p>Six (6) Offsets (Avisford 1, Avisford 2, Libertus, Ulan 18, Dun Dun East, and Dun Dun West) were secured in accordance with Condition 4 of EPBC 2008/4444 in a previous reporting period.</p> <p>During the reporting period a 'Positive Covenant' and a 'Restriction on the Use of Land by a Prescribed Authority' under Section 88E(3) of the NSW <i>Conveyancing Act 1919</i> was executed by MCO and the NSW Department of Planning, Industry and Environment (DPIE) to secure the Old Bobadeen and On-site offsets. The executed covenants will be registered on title.</p>
5	<p>The approval holder must undertake management and monitoring of water resources in accordance with this project approval for Application Number 08-0135 issued by the NSW Planning Assessment Commission under the Environmental Planning and Assessment Act 1979 (NSW) on 30 January 2015.</p>	Compliant	<p>Moolarben Complex Water Management Plan.</p> <p>MCO 2020 Annual Review</p>
6	<p>Upon request, the approval holder shall supply the groundwater monitoring data for the Moolarben Coal Project to the Department, NSW Government agencies, Operators of the Ulan and/or Wilpinjong</p>	Compliant	<p>Section 5.5 of the NSW DPIE approved Moolarben Complex Water Management Plan.</p>

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
	mines or other adjacent mine operators. A protocol for the supply of the data will be included in the project's Water Management Plan.		
7	The approval holder must make available for the Minister on request, all plans or programs and any review of plans or programs produced pursuant to Condition 5.	Compliant	Noted No requests received during the 2020 reporting period
8	Within 30 days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement.	Compliant	Completed in a previous period. Action commenced <b>2 August 2015</b> . Notification in writing sent on <b>13 August 2015</b>
9	The approval holder must maintain accurate records substantiating all activities associated with or relevant to these conditions of approval, including measures taken to implement the BOMP and VCPLMP, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	Compliant	Noted
10	The approval holder must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of the BOMP and VCPLMP as specified in the conditions, by 31 March for the preceding calendar year. Documentary evidence providing proof of the date of publication must be provided to the Department at the same time as the compliance report is published.	Compliant	This report
11	Non-compliance with any of the conditions of this approval must be reported to the Department within 2 business days of becoming aware of the non-compliance.	Compliant	Noted
12	Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.	Not Applicable	Noted
13	If the approval holder wishes to carry out any activity otherwise than in accordance with the Plans as specified in the conditions, the approval holder must submit to the Department for the Minister's written approval a revised version of that Plan. The approval holder must not commence the varied activity until the Minister has approved the varied Plan in writing. The Minister will not approve a varied plan unless the revised Plan would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised Plan, that Plan must be implemented in place of the Plan originally approved.	Not Applicable	Noted

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
14	If the Minister believes that it is necessary or convenient for the better protection of listed threatened species and ecological communities to do so, the Minister may request that the approval holder make specified revisions to the Plan specified in the conditions and submit the revised Plan for the Minister's written approval. The approval holder must comply with any such request. The revised approved Plan must be implemented. Unless the Minister has approved the revised Plan then the approval holder must continue to implement the plan originally approved.	Not Applicable	Noted
15	If, at any time after 5 years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not substantially commence the action without the written agreement of the Minister.	Compliant	Action commenced <b>2 August 2015</b> .
EPBC 2013/6926			
1	The approval holder must not clear more than 171.4 hectares of native vegetation within the defined footprint at Schedule 1, Figures 1 and 2.	Compliant	At the end of the period <b>126.5 Ha</b> of the approved <b>171.4 Ha</b> of native vegetation within the defined footprint had been disturbed.
2	To assist in mitigating the impacts of the proposal on the Large-eared Pied Bat, Southern Long-eared Bat, Regent Honeyeater, Swift Parrot, Potted-tail Quoll and the Koala, the approval holder must prepare and submit a mine site Vegetation Clearance Protocol and Landscape Management Plan (VCPLMP) for the Minister's written approval. The VCPLMP must; <ol style="list-style-type: none"> <li>Delineate areas to be cleared, describe pre-clearance survey methods, specify actions to minimise fauna impacts and details vegetation clearance procedures.</li> <li>Require collection and stockpiling of habitat features important to threatened fauna species for reinstatement in rehabilitation areas.</li> <li>Require use of native, locally sourced seed for propagation for rehabilitation activities.</li> <li>Specify a two stage clearing protocol where non-habitat trees are cleared 24 hours prior to any habitat trees in their proximity being cleared, to encourage fauna to move out of an area.</li> <li>Include a revegetation strategy to improve connectivity between isolated vegetation patches (including between Munghorn Gap Nature Reserve, Goulburn River National Park and Dexter Mountain).</li> </ol>	Compliant	VCPLMP was approved by the minister on <b>17 December 2014</b> . The VCPLMP continues to be implemented.
3	The approval holder must not commence until the VCPLMP is approved by the Minister. The approved VCPLMP must be implemented.	Compliant	VCPLMP was approved by the minister on <b>17 December 2014</b> . Action commenced on <b>23 December 2014</b> . The VCPLMP continues to be implemented.

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
4	<p>To compensate for the loss of 16.5 hectares of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBGW) ecological community and 171.4 hectares of habitat for EPBC listed threatened species, the approval holder must prepare and submit a Biodiversity Offset Management Plan (BOMP) for the proposed EPBC offset sites, for the Minister's written approval. The BOMP must;</p> <p>a. Identify those lands described as the Offset Areas at Schedule 2 (Figures 1-5) of this notice that are necessary to achieve the outcomes required by the Environmental Offsets Policy 2012 (or subsequent published revisions). This must include offset attributes, shapefiles, textual descriptions and maps clearly define the location and boundaries of the offset area(s).</p> <p>b. Provide a survey and description of the current condition (prior to any management activities) of the offset areas identified in Condition 4a.</p> <p>c. Details management actions and regeneration and revegetation strategies to be undertaken on the offset areas to improve the ecological quality of these areas, including:</p> <p>(i) A description and timeframe of measures that would be implemented to improve the condition of the ecological communities on the site;</p> <p>(ii) Performance and completion criteria for evaluating the management of the offset area, and criteria triggering remedial action;</p> <p>(iii) A program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;</p> <p>(iv) A description of potential risks to the successful implementation of the plan, a description of the measures that will be implemented to mitigate against these risks and a description of the contingency measures that will be implemented if defined triggers arise; and</p> <p>(v) Details of who would be responsible for monitoring, reviewing, and implementing the plan.</p>	Compliant	<p>A Biodiversity Offset Management Plan (BOMP) was approved by the Minister on <b>17 December 2014</b>.</p> <p>The requirements of this conditions are addressed in the below section of the BOMP:</p> <p>a) Section 2 and Appendix 1 b) Section 3 c) Sections 4, 5, 6 &amp; 7.</p>
5	<p>The approval holder must not commence the action until the BOMP is approved by the Minister. The approval BOMP must be published on an internet web site approved by the Department, within 1 month of being approved and for a period of 5 years thereafter. The approved BOMP must be implemented.</p>	Compliant	<p>A BOMP was approved by the Minister on <b>17 December 2014</b>.</p> <p>Action commenced on <b>23 December 2014</b></p> <p>The BOMP is located on MCO's website. (<a href="http://www.moolarbencoal.com.au">www.moolarbencoal.com.au</a>)</p> <p>The BOMP continues to be implemented.</p> <p>This report, refer to Appendix A and B</p>
6	<p>To compensate for the loss of 16.5 hectares of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBGW) ecological community and 171.4 hectares of habitat for EPBC listed threatened species, the approval holder must secure the lands identified as the Offset Areas at Schedule 2 (Figures 1-5) of this notice as a biodiversity offset by a legal instrument under relevant nature conservation legislation on the title of the land. This instrument must:</p>	Compliant	<p>Three (3) Offsets (Clifford, Clarke and property 5) were secured in accordance with Condition 6 of EPBC 2013/6926 in a previous reporting period.</p>

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
	<p>a. Provide for the protection of the land in perpetuity;</p> <p>b. Prevent any future development activities, including mining and mineral extraction; and</p> <p>c. ensure the active management of the land.</p> <p>The approval holder must not commence the action until the Department has approved the proposed instrument in writing.</p>		<p>During the reporting period the a 'Positive Covenant' and a 'Restriction on the Use of Land by a Prescribed Authority' under Section 88E(3) of the NSW <i>Conveyancing Act 1919</i> was executed by MCO and the NSW Department of Planning, Industry and Environment (DPIE) to secure the Bobadeen East, Bobadeen West and Elward offsets. The executed covenants will be registered on title.</p> <p>The Department approved the protection mechanism for offsets under EPBC 2013-6926 on <b>17 December 2014</b>.</p>
7	The approval holder must provide evidence to the Department of their compliance with Condition 6, along with offset attributes, shapefiles and textual descriptions and maps to clearly define the location and boundaries of the offset sites, prior to the commencement of the action.	Compliant	The DAWE was advised of the Bobadeen East, Bobadeen West and Elward offset security on <b>19 September 2020</b> . Evidence including shapefiles provided on <b>1 December 2014</b> .
8	Within 30 days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement.	Compliant	Completed in a previous period. Notification in writing sent on <b>20 January 2015</b>
9	The approval holder must maintain accurate records substantiating all activities associated with or relevant to these conditions of approval, including measures take to implement the BOMP and VCPLMP, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with Section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may be publicised through the general media.	Compliant	Noted
10	The approval holder must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of the BOMP and VCPLMP as specified in the conditions, by 31 March for the preceding calendar year. Documentary evidence providing proof of the date of publication must be provided to the Department at the same time as the compliance report is published.	Compliant	This report.
11	Non-compliance with any of the conditions of this approval must be reported to the Department within 2 business days of becoming aware of the non-compliance.	Compliant	Noted
12	Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must be address the criteria to the satisfaction of the Minister.	Not Applicable	Noted
13	If the approval holder wishes to carry out any activity otherwise than in accordance with the Plan as specified in the conditions, the approval holder must submit to the Department for the Minister's	Not Applicable	Noted

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
	written approval a revised version of the Plan. The approval holder must not commence the varied activity until the Minister has approved the varied Plan in writing. The Minister will not approve a varied Plan unless the revised Plan would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised Plan, that Plan must be implemented in place of the Plan originally approved.		
14	If the Minister believes that it is necessary or convenient for the better protection of listed threatened species and ecological communities to do so, the Minister may request that the approval holder make specified revisions to the Plan specified in the conditions and submit the revised Plan for the Minister's written approval. The approval holder must comply with any such request. The revised approved Plan must be implemented. Unless the Minister has approved the revised Plan then the approval holder must continue to implement the Plan originally approved.	Not Applicable	Noted
15	If, at any time after 5 years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not substantially commence the action without the written agreement of the Minister.	Compliant	Action commenced <b>23 December 2014</b>
EPBC 2017/7974			
1	The approval holder must undertake the Moolarben Coal Project within the development footprint.	Compliant	Noted
2	The approval holder must comply with Condition 34A of Schedule 3 of the NSW Consolidated Project Approvals to implement the supplementary offset strategy, by retiring the required number of credits specified in Table 12A.	Compliant	Gilgal is owned and managed by MCO. Activities are underway to retire the required number of credits specified in Table 12A of the NSW Consolidated Project Approvals through a Biodiversity Stewardship Agreement. Rehabilitation is being undertaken to secure residual credits specified in Table 12A.
3	The approval holder must comply with Conditions 35A of the NSW Consolidated Project Approvals to secure the credits and/or area at the Gilgal Offset Area (as identified at Attachment B) under a Biodiversity Stewardship Agreement, unless otherwise agreed in writing by the Minister. The approval holder may seek agreement from the Minister to use an alternative mechanism to secure the credits and/or area, subject to the additional rules at Condition 20. The approval holder must submit a copy of the Biodiversity Stewardship Agreement to the Minister within ten business days of an agreement being made.	Compliant	Gilgal is owned and managed by MCO, activities are underway to retire the required number of credits specified in Table 12A of the NSW Consolidated Project Approvals.  Conditions 35A of the NSW Consolidated Project Approvals is required to be completed by <b>30 September 2021</b> .
4	The approval holder must provide for the long-term security of the Area 2 (extract) offset area as identified at Attachment B, by 30 June 2020. The approval holder must submit details of the security mechanism to the Minister within ten business days of the mechanism being made.	Non-Compliant	Area 2 (Extract) offset was secured on <b>25 August 2020</b> , post the required due date. MCO advised the DAWE on <b>24 June 2020</b> that the offsets security mechanism were in the final stages of execution and requested an Extension of time to <b>31 August 2020</b> to align

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
			<p>with the offset security timing as approved by the NSW DPIE for the same offset area.</p> <p>On <b>2 July 2020</b> MCO advised the DAWE of a technical non-compliance as the offset security mechanism for Area 2 (Extract) had been executed by MCO but not the NSW DPIE on 30 June 2020.</p> <p>On <b>25 August 2020</b>, a 'Positive Covenant' and a 'Restriction on the Use of Land by a Prescribed Authority' under Section 88E(3) of the NSW <i>Conveyancing Act 1919</i> was executed by MCO and the NSW Department of Planning, Industry and Environment (DPIE) to secure the Area 2 (Extract).</p> <p>On <b>18 September 2020</b>, MCO provided the DAWE with a copy of the Positive and Restrictive Covenants executed by MCO and the NSW Department of Planning, Industry and Environment (DPIE) to secure the Area 2 (Extract) offset. The executed covenants will be registered on title.</p>
5	The approval holder must enhance existing native vegetation in the Area 2 (extract) offset area, in accordance with the biodiversity offset strategy required by Condition 34 of the NSW Consolidated Project Approvals, and in accordance with the Biodiversity Management Plan required by Condition 36 of Schedule 3 of the NSW Consolidated Project Approvals.	Compliant	During the reporting period MCO continued works to maintain and enhance the existing native vegetation in the Area 2 (Extract) BOA.
6	The approval holder must comply with Condition 35B of Schedule 3 of the NSW Consolidated Project Approvals to develop suitable rehabilitation performance and completion criteria for the rehabilitation of OC2 and/or OC3, to generate the required number of residual credits specified in Table 12A of Schedule 3.	Compliant	Suitable rehabilitation performance and completion criteria for OC2 and/or OC3 have been developed by MCO with approval of the criteria granted by the NSW DPIE on <b>7 July 2020</b> in accordance with Condition 35B of Schedule 3.
7	Unless the approval holder retires the residual credits in accordance with Condition 8, the approval holder must undertake progressive rehabilitation of OC2 and OC3, so as to meet the rehabilitation performance and completion criteria developed in accordance with Condition 6, and in accordance with an approved Rehabilitation Management Plan. The approval holder must also comply with Condition 35C of Schedule 3 of the NSW Consolidated Project Approvals to retire the residual credits if the performance and completion criteria are not achieved in the specified timeframe in Condition 35C, subject to the additional rules at Condition 20.	Compliant	Noted
8	The approval holder may retire the residual credits earlier than the specified timeframe in Condition 35C in accordance with Condition 35D of Schedule 3 of the NSW Consolidated Project Approvals,	Not Applicable	Noted



Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
	subject to the additional rules at Condition 20. If the approval holder chooses to retire credits early, the approval holder must notify the Department within 30 business days of retiring the credits.		
9	The approval holder must comply with Condition 36 of Schedule 3, and Conditions 3 and 5 of Schedule 5, of the NSW Consolidated Project Approvals to prepare and implement a Biodiversity Management Plan for the Moolarben Coal Project.	Compliant	A revised Biodiversity Management Plan was approved by the NSW DPIE on <b>2 September 2020</b> . A revised Complex wide Biodiversity Management Plan was submitted to the DPIE portal for consultation on <b>5 December 2020</b> . MCO continues to progress the development of the Complex wide BOMP in consideration of both State and Federal Department feedback.
10	The Biodiversity Management Plan implemented in accordance with Condition 9 must be approved by the Department as adequately providing for the management of protected matters on the site and in the offset areas.	Compliant	Noted. A Complex wide Biodiversity Management Plan was submitted by MCO to the DAWE on <b>31 July 2020</b> with a revised version submitted on <b>5 December 2020</b> addressing DAWE comments. The DAWE advised MCO on <b>14 August 2020</b> that there is no requirement for the Biodiversity Management Plan to be approved under the EPBC Act.
11	The approval holder must comply with Condition 33 of Schedule 3, and Conditions 3 and 5 of Schedule 5, of the NSW Consolidated Project Approvals to prepare and implement a revised Water Management Plan for the Moolarben Coal Project.	Compliant	A revised Moolarben Complex Water Management Plan incorporating EPBC 2017/7974 was approved by DPIE on <b>20 October 2020</b> . The WMP continues to be implemented.
12	The approval holder must comply with the timing and content requirements of Condition 32A of Schedule 3 of the NSW Consolidated Project Approvals for the completion of an Independent Water Quality Study (IQWS).	Compliant	MCO have commenced the Independent Water Quality Study, Completion of the IWQS is required by <b>1 December 2021</b> .
13	The approval holder must ensure that the performance measures recommended in the IQWS are incorporated in a revised version of the Water Management Plan within 12 months of the IWQS being completed, and must implement the revised Water Management Plan.	Not Applicable	IQWS was not completed during the 2020 reporting period. Completion of the IWQS is required by <b>1 December 2021</b> .
14	The approval holder must comply with condition 33A of the NSW Consolidated Project Approvals to prepare and implement a Brine Management Plan.	Compliant	A revised Moolarben Complex Brine Management Plan incorporating EPBC 2017/7974 was approved by DPIE on <b>21 October 2020</b> . The Brine MP continues to be implemented.
15	The approval holder must notify the Department in writing of the date of commencement of works in OC3, within ten business days after the date of commencement of works in OC3.	Compliant	Notification was provided to the Department on <b>18 February 2020</b> informing on the commencement of works in OC3.

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
16	The approval holder must notify the Department in writing of the date of commencement of operation of the water treatment facility, within ten business days after the date of commencement of operation of the water treatment facility.	Compliant	The commencement of operation of the water treatment facility occurred on <b>18 May 2020</b> . Written notification of commencement of the water treatment facility was provide to the Department on <b>27 May 2020</b> .
17	The approval holder must maintain accurate and complete compliance records.	Compliant	Noted
18	If the Department makes a request in writing, the approval holder must provide electronic copies of compliance records to the Department within the timeframe specified in the request.	Compliant	Noted No requests received during the 2020 reporting period.
19	The approval holder must: <ul style="list-style-type: none"> <li>a. Submit the Biodiversity Management Plan electronically to the Department for approval by the Minister.</li> <li>b. Publish each plan on its website within 20 business days of the date the plan is approved by the Minister and/or Secretary.</li> <li>c. Exclude or redact sensitive ecological data from plans published on its website or provided to a member of the public.</li> </ul>	Compliant	Noted A Complex wide Biodiversity Management Plan was submitted by MCO to the DAWE on <b>31 July 2020</b> with a revised version submitted on <b>5 December 2020</b> addressing DAWE comments. The DAWE advised MCO on <b>14 August 2020</b> that there is no requirement for the Biodiversity Management Plan to be approved under the EPBC Act. MCO continues to progress the development of the Complex wide Biodiversity Management Plan in consideration of both State and Federal Department feedback.
20	The approval holder must use one or a combination of the following methods to retire the credits required for protected matters: <ul style="list-style-type: none"> <li>a. Retire like-for-like biodiversity credits within the meaning of the Biodiversity Conservation Act 2016 (NSW).</li> <li>b. Make payments into an offsets fund that has been developed by the NSW Government and that has been endorsed by the Minister. The financial contribution or payments into an offset fund must be determined by converting biodiversity credits to an equivalent dollar value through the NSW offsets payment calculator. The approval holder must submit evidence to the Minister of any payments, within ten business days of the payment being made.</li> <li>c. Fund a biodiversity conservation action within the meaning of the Biodiversity Conservation Act 2016 (NSW). The financial contribution to biodiversity conservation actions must be determined by converting biodiversity credits to an equivalent dollar value through the NSW offsets payment calculator. The approval holder must submit to the Minister evidence of any payments within ten business days of the payment being made.</li> </ul>	Compliant	Noted No credits were retired in the reporting period.

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
21	<p>The approval holder must prepare a compliance report each year. The timing for preparing the compliance report must be consistent with the requirements of Condition 4 of Schedule 5 of the NSW Consolidated Project Approvals, or otherwise in accordance with an annual date that has been agreed in writing by the Department. The approval holder must:</p> <ol style="list-style-type: none"> <li>Publish each compliance report on its website within one month of being approved by the Secretary.</li> <li>Notify the Department by email that a compliance report has been published on its website within five business days of the date of publication.</li> <li>Exclude or redact sensitive ecological data from compliance reports published on its website.</li> <li>Where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within five business days of publication.</li> </ol>	Compliant	This Report
22	<p>The approval holder must notify the Department in writing of any non-compliance with the conditions or non-compliance with the commitments made in plans that relate to protected matters. The notification must be given no later than two business days after becoming aware of the non-compliance. The notification must specify:</p> <ol style="list-style-type: none"> <li>The condition which is or may be in breach.</li> <li>A short description of the non-compliance.</li> </ol>	Compliant	MCO advised the DAWE of a non-compliance with condition 4 on <b>2 July 2020</b> (Refer condition 4 comments above). No other non-compliances associated with EPBC 2017/7974 occurred during the reporting period.
23	<p>The approval holder must provide to the Department the details of any non-compliance with the conditions or commitments made in plans that relate to protected matters no later than ten business days after becoming aware of the non-compliance, specifying:</p> <ol style="list-style-type: none"> <li>Any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future.</li> <li>The potential impacts of the non-compliance.</li> <li>The method and timing of any remedial action that will be undertaken by the approval holder.</li> </ol>	Compliant	MCO advised the DAWE of a non-compliance with condition 4 on <b>2 July 2020</b> and described the corrective actions, impacts and timing for remediation. No other non-compliances associated with EPBC 2017/7974 occurred during the reporting period.
24	The approval holder must ensure that independent audits of compliance with the conditions are conducted as requested in writing by the Minister.	Not Applicable	Noted
25	<p>For each independent audit, the approval holder must:</p> <ol style="list-style-type: none"> <li>Provide the name and qualifications of the independent auditor and the draft audit criteria to the Department.</li> <li>Only commence the independent audit once the audit criteria have been approved in writing by the Department.</li> <li>Submit an audit report to the Department within the timeframe specified in the approved audit criteria.</li> </ol>	Not Applicable	Noted

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
26	The approval holder must publish the audit report on its website within ten business days of receiving the Department's approval of the audit report and keep the audit report published on its website until the end date of this approval.	Not Applicable	Noted
27	The approval holder may, at any time, apply to the Minister for a variation to the Biodiversity Management Plan approved by the Minister under condition 10, or as subsequently revised in accordance with these conditions, by submitting an application in accordance with the requirements of section 143A of the EPBC Act.	Not Applicable	Noted
28	The approval holder may revise the Biodiversity Management Plan approved by the Minister under condition 10, or as subsequently revised in accordance with these conditions, without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised Biodiversity Management Plan would not be likely to have a new or increased impact.	Not Applicable	Noted
29	If the approval holder revises the Biodiversity Management Plan without submitting it for approval, the approval holder must: <ul style="list-style-type: none"> <li>a. notify the Department in writing that the approved action management plan has been revised and provide the Department with: <ul style="list-style-type: none"> <li>I. An electronic copy of the revised Biodiversity Management Plan.</li> <li>II. An explanation of the differences between the approved action management plan and the revised Biodiversity Management Plan.</li> <li>III. The reasons the approval holder considers that taking the action in accordance with the revised Biodiversity Management Plan would not be likely to have a new or increased impact.</li> <li>IV. Written notice of the date on which the approval holder will implement the revised Biodiversity Management Plan.</li> </ul> </li> </ul>	Not Applicable	Noted
30	If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised Biodiversity Management Plan would be likely to have a new or increased impact, then: <ul style="list-style-type: none"> <li>a. Condition 28 does not apply, or ceases to apply, in relation to the revised Biodiversity Management Plan.</li> <li>b. The approval holder must implement the Biodiversity Management Plan specified by the Minister in the notice.</li> </ul>	Not Applicable	Noted
31	At the time of giving the notice under condition 30, the Minister may also notify that for a specified period of time, condition 28 does not apply for one or more specified action management plans.	Not Applicable	Noted
32	The approval holder must notify the Department in writing of any proposed change to the conditions of the NSW Consolidated Project Approvals referred to in the conditions of this approval, no later than	Not Applicable	Noted

Condition Number	Condition	Compliance <sup>1</sup>	Evidence/Comments
	two weeks after formally proposing a change or becoming aware of a change being proposed. The approval holder must also notify the Department in writing of any change to the conditions of the NSW Consolidated Project Approvals referred to in the conditions of this approval, within two weeks of a change being finalised.		There have been no proposed changes to the conditions of the NSW Consolidated Project Approvals referred to in the conditions of this approval during the reporting period.
33	Within 30 days after the completion of the action, the approval holder must notify the Department in writing and provide completion data.	Not Applicable	Noted

<sup>1</sup> Definitions:

Compliant

'Compliance' is achieved when all the requirements of a condition have been met, including the implementation of management plans or other measures required by those conditions.

Non-compliant

requirements of a condition or elements of a condition, including the implementation of management plans and other measures have not been met.

Not applicable

requirements of a condition or elements of a condition fall outside of the scope of the current reporting period. For example, a condition which applies to an activity that has not yet commenced.

## APPENDIX A – Moolarben Coal Annual Summaries –Biodiversity Offset Area (BOA) Flora and Fauna Monitoring

### Stage 1 and EPBC (2007/3297) offset areas monitoring<sup>2</sup>

Floristic monitoring undertaken within the Stage 1 BOAs during Autumn and Spring 2020 recorded:

- 233 species were recorded across Area 1 BOA. This consisted of 171 native species, 47 exotic species and 15 species that could not be identified to species level nor confidently be determined as native or exotic species
- 168 species were recorded across Area 2 BOA. This consisted of 141 native species, 15 exotic species and 12 species that could not be identified to species level nor confidently be determined as native or exotic species
- 196 species were recorded across Area 3 BOA. This consisted of 158 native species, 24 exotic species and 14 species that could not be identified to species level nor confidently be determined as native or exotic species.

Overall, the condition of the Stage 1 Management Zone 1 (MZ1) sites compared favourably with analogue sites. The majority of areas had an overall ranking of moderate or high, with overall condition being similar to analogue sites. Native Tree Cover (NTC) and Native Mid-Storey Cover (NMC) were lower at 3 sites in Area 3 BOA than at analogue sites. A high level of canopy dieback was observed across all BOAs, particularly along the ridges within Area 2 and Area 3 BOAs which has likely affected the results of these attributes. The dieback is consistent with observations of responses to the drought in remnant vegetation in the surrounding landscape (including some analogue sites). Notwithstanding, the improved rainfall during 2020 has led to a mass germination of canopy species and seedling establishment in the Stage 1 BOAs.

The conditions at Management Zone 2 (MZ2) sites of Area 1 and Area 3 BOAs showed good progress towards benchmark conditions with low exotic cover and Native Ground Cover (NGC) and NMC attributes meeting benchmark values. Native Species Diversity (NSD) and NTC were also approaching benchmarks in Area 1 BOA, in part due to maturing revegetation plantings. Canopy cover was absent in MZ2 in the Area 3 BOA, but all other conditions are good and there is no apparent hindrance to natural regeneration at this site.

The fauna monitoring undertaken within the Stage 1 BOAs during spring 2020 demonstrated that all BOAs provide habitat for a diverse range of fauna species. The total bird and microbat species assemblages recorded in 2020 at MZ2 sites within both Area 1 and Area 2 are overall similar to those recorded at MZ1 sites. A diverse range of typical woodland species were recorded, including multiple threatened bird and microbat species, some of which were recorded for the first time. These results indicate that MZ2 along with MZ1 areas of the Stage 1 BOAs provide valuable habitat and provide a positive indication that enhancement of habitat is occurring in these areas.

### Stage 1 Mod 9 and EPBC (2013/6929) offset areas monitoring<sup>3</sup>.

Floristic monitoring undertaken within the MOD 9 BOAs during Autumn and Spring 2020 recorded:

<sup>2</sup> EPBC (2007/3297) offset area monitoring include the portion of Area 2 offset extracted and included in EPBC2017/7974.

<sup>3</sup> Whilst Moolarmoo and Property 24/25 are related to NSW project approvals, data has been included as all Modification 9 Offsets are managed consistently.

- 204 species were recorded across Bobadeen BOA. This consisted of 126 native species, 61 exotic species and 17 species that could not be identified to species level nor confidently be determined as native or exotic species.
- 166 species were recorded across Clarke BOA. This consisted of 126 native species, 27 exotic species and 13 species that could not be identified to species level nor confidently be determined as native or exotic species.
- 150 species were recorded across Clifford BOA. This consisted of 113 native species, 23 exotic species and 14 species that could not be identified to species level nor confidently be determined as native or exotic species.
- 151 species were recorded across Elward BOA. This consisted of 123 native species, 18 exotic species and ten species that could not be identified to species level nor confidently be determined as native or exotic species.
- 122 species were recorded across Moolarmoo BOA. This consisted of 78 native species, 31 exotic species and 13 species that could not be identified to species level nor confidently be determined as native or exotic species.
- 92 species were recorded across Property 5 BOA. This consisted of 50 native species, 29 exotic species and 13 species that could not be identified to species level nor confidently be determined as native or exotic species
- 120 species were recorded across Property 24 & 25 BOA. This consisted of 80 native species, 33 exotic species and seven species that could not be identified to species level nor confidently be determined as native or exotic species.

The majority of MZ1 sites received an overall high or moderate ranking which compares favourably with the analogue site results. In general, spring conditions were poorer than in autumn which is similar results to the analogue sites. Most MOD 9 MZ1 sites ranked well for Native Species Diversity (NSD), NGC and exotic cover. Key feed species for Koala were recorded naturally regenerating at all MOD 9 BOAs with key feed species for Regent Honeyeater and Swift Parrot also recorded as naturally regenerating at Bobadeen, Clarke and Property 5 BOAs.

Widespread drought induced canopy dieback was observed in intact vegetation at Clarke BOA, particularly in the southern section of the BOA. This is similar to the dieback observed at some analogue sites and Stage 1 BOAs and observed more broadly in the region. However, there was evidence of natural recovery in response to the summer and autumn rainfall with epicormic growth observed.

The total bird and microbat species assemblages recorded across both MZ1 and MZ2 sites indicated that the majority of BOAs contain overall similar bird and microbat species assemblages between MZ1 and MZ2 sites, with MZ2 sites recording a range of typically woodland species, as well as multiple threatened species. Whilst MZ2 areas of MOD 9 BOAs continue to develop under management by MCO, these results provide a positive indication of the enhancement of habitat values within the BOAs.

#### **Stage 2 and EPBC (2008/4444) offset areas monitoring.**

Floristic monitoring undertaken within the Stage 2 BOAs during Autumn and Spring 2020 recorded:

- 197 species were recorded across Dun Dun East BOA. This consisted of 143 native species, 40 exotic species and 14 species that could not be identified to species level nor confidently be determined as native or exotic species

- 171 species were recorded across Dun Dun West BOA. This consisted of 123 native species, 33 exotic species and 15 species that could not be identified to species level nor confidently be determined as native or exotic species
- 72 species were recorded across Libertus BOA. This consisted of 61 native species, seven exotic species and four species that could not be identified to species level nor confidently be determined as native or exotic species
- 149 species were recorded across Old Bobadeen BOA. This consisted of 94 native species, 43 exotic species and 12 species that could not be identified to species level nor confidently be determined as native or exotic species
- 166 species were recorded across Onsite Offset BOA. This consisted of 120 native species, 34 exotic species and 12 species that could not be identified to species level nor confidently be determined as native or exotic species
- 118 species were recorded across Ulan 18 BOA. This consisted of 72 native species, 32 exotic species and 14 species that could not be identified to species level nor confidently be determined as native or exotic species.

Canopy cover (NTC) varied across all BOAs when compared to 2019 monitoring, with some MZ1 decreasing but other locations within several BOAs (Dun Dun East, Dun Dun West and Onsite Offset BOA) showing an increase. This trend is similar to that seen at other BOAs, with the majority of sites within MOD 9 and Stage 1 BOAs also decreasing in NTC, as well as two analogue sites. Exotic species were recorded at all BOAs. Although exotic cover has increased compared to 2019 monitoring at some locations, it was generally low or absent across most MZ1 areas.

Regeneration of key feed species for Koala was recorded within both MZ1 and MZ2 areas across all Stage 2 BOAs and regeneration of key feed tree species for both Regent Honeyeater and Swift Parrot was recorded at Dun Dun East and Dun Dun West BOAs. For MZ1, this is a good indicator that conditions have been created for these areas to be self-sustaining and maintain provision of suitable habitat for Regent Honeyeater, Swift Parrot and Koala in the long-term. Additionally, it demonstrates that MZ2 areas have the potential to provide increased or improved habitat for Regent Honeyeater, Swift Parrot and Koala

Overall, there was an increase in native species diversity since 2019 autumn monitoring with 22 of the 39 sites recording the highest species diversity across all monitoring sites. This shows that the sites retain good native species banks. Natural regeneration is occurring in all BOAs in close proximity to intact vegetation.

### **3.1.1 ACTIONS FOR NEXT REPORTING PERIOD**

During the next period activities to be undertaken include review of management plans and revision where necessary, continued monitoring, assisted regeneration planning and implementation, fencing, track and fire trail works, continued weed and feral animal control works, maintenance of property security and progression of Gilgal Biodiversity Stewardship Agreement.



## APPENDIX B – Moolarben Coal Annual Summaries –Rehabilitation Flora and Fauna Monitoring

### REHABILITATION MONITORING

MCO undertakes a monitoring program of rehabilitation areas in accordance with the RMP. The monitoring program includes landscape function analysis, floristic monitoring, vegetation structure and growth, fauna monitoring and visual monitoring.

#### 3.1.2 ECOSYSTEM FUNCTION ANALYSIS

EFA was undertaken at 21 EFA sites within the MCO open cut rehabilitation areas, as well as at three (3) analogue sites which are located within vegetation communities equivalent to the general rehabilitation target communities.

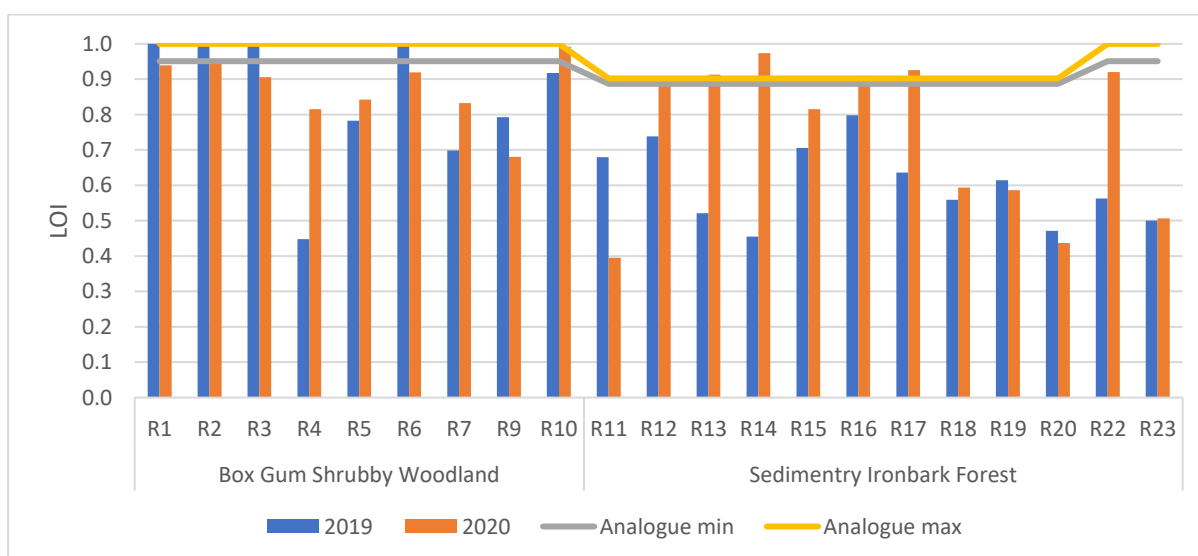
##### Landscape Function Analysis

LFA assessment allows for the calculation of a Landscape Organisation Index (LO), reflecting the proportion of a transect occupied by patches. Patches are defined by soil surface elements, such as perennial ground cover, litter, logs or rocks that help retain soil and other resources at a site. A higher LO index implies a more stable transect that is less prone to erosion and resource loss.

During 2020, LOI ranged from 68 (R9) to 99 (R10) at Box Gum Shrubby Woodland sites, with an average of 88. An LOI of 100 was recorded at both analogue sites (A1a and A2b). LOI ranged from 40 (R11) to 97 (R14) at Sedimentary Ironbark Forest sites, with an average of 74 compared to an LOI of 90 recorded at the analogue site (A5B). LOI comparison to analogue sites is shown in **Figure 1**.

Variation in the patch assemblages has been recorded throughout the duration of monitoring for each site which can be attributed to variation in climatic conditions across years and seasons, as well as monitoring timing and rehabilitation development.

The majority of sites recorded less than 10% bare soil patches during 2020 monitoring. There is an increasing tree and shrub canopy associated with maturing rehabilitation campaigns and seasonal changes in ground herbage year to year.



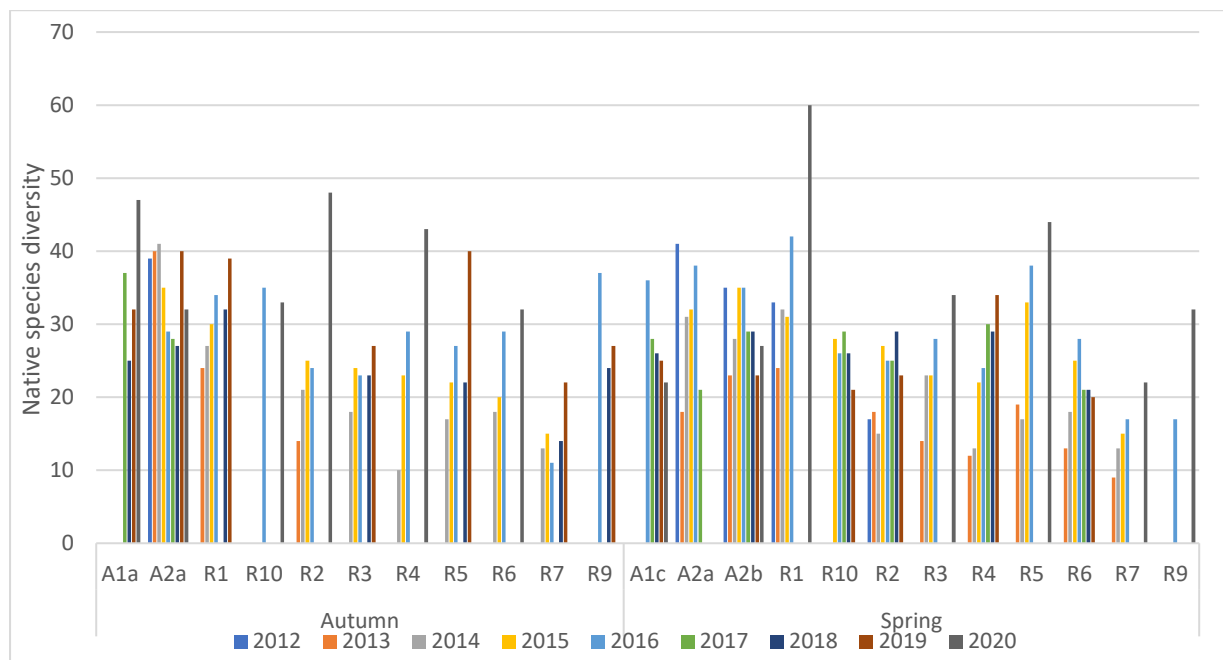
**Figure 1: Landscape organisation indices (LOIs) for 2019 and 2020 compared to analogue LOI values**

### Floristic Monitoring

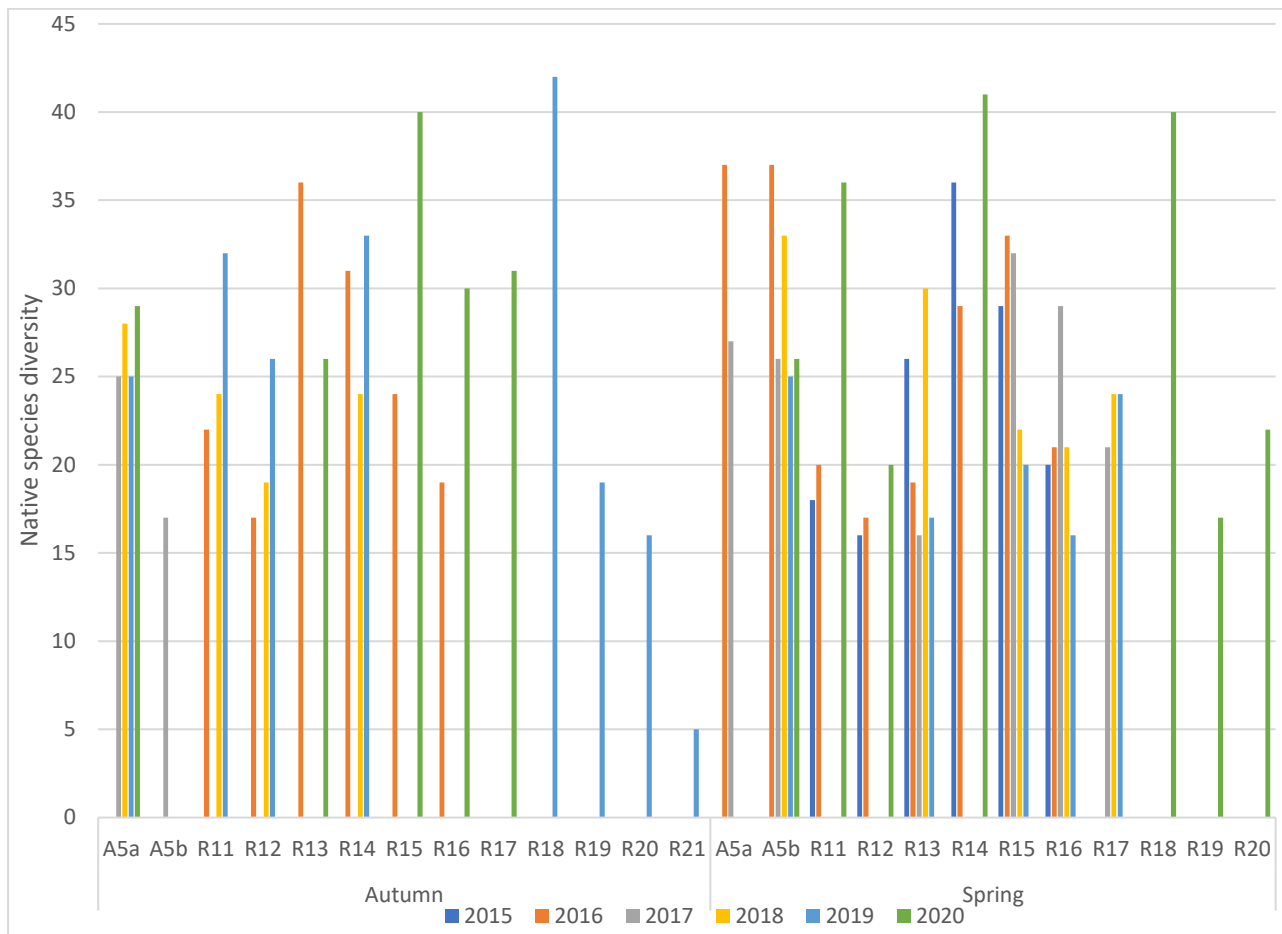
During the 2020 monitoring of Box Gum Shrubby Woodland, a total of 247 species were recorded including 14 native canopy species, 37 native mid-storey species, 114 native groundcover species and 72 exotic groundcover species. Ten (10) species were recorded which could not be identified to species level due to absence of material required for identification. All sites, except for R10, show an increasing trend in native species richness with time and in 2020 recorded the highest native species richness for the respective monitoring season since monitoring began.

During the 2020 monitoring of Sedimentary Ironbark Forest, a total of 11 native canopy species, 24 native mid-storey species, and 93 native and 63 exotic groundcover species were recorded. Five (5) species were recorded which could be not be identified to species level due to the absence of material required for identification. Native species richness in 2020 was the highest to date at all sites monitored in 2020 with the exception of R13, which was similar to the analogue site.

The trend in native species diversity at Box Gum Shrubby Woodland rehabilitation sites, shows a similar pattern in recent years to that at the equivalent analogue sites (**Figure 2**). At most sites, there was an increase in native species diversity from 2019 to 2020, likely in response to the recent improved rainfall in the region. The same pattern was observed for Sedimentary Ironbark sites (**Figure 3**). If the rehabilitated vegetation continues to respond in a similar way to analogue sites, it will be a clear demonstration of resilience which is a critical element for long-term sustainability.



**Figure 2: Native species diversity 2012 – 2020 for Box Gum Shrubby Woodland open cut rehabilitation monitoring sites and Box Gum Grassy Woodland analogue sites.**



**Figure 3: Native species diversity 2015 – 2020 for open cut rehabilitation and analogue Sedimentary Ironbark Forest sites**

**Vegetation Structure and Growth**

Canopy cover for Box Gum Shrubby Woodlands averaged 10%, which is consistent with 2019 (12%), and continues to be less than that seen at the analogue sites which during 2020 averaged 21%. Canopy cover for Sedimentary Ironbark Forest sites averaged 5.5%, slightly lower compared to the average canopy cover recorded in 2019 (8.2%), however greater than the average canopy cover recorded during 2020 at analogue sites.

The average mid-storey cover for both Box Gum Shrubby Woodlands and Sedimentary Ironbark Forest sites in 2020 was slightly higher than 2019, with new growth on shrub species including Acacia species and *Cassinia sifton* (Sifton Bush).

Total native groundcover (grasses, herbs/forbs and shrubs <1 m in height) for Box Gum Shrubby Woodlands and Sedimentary Ironbark Forest sites in 2020 averaged 12% and 26% respectively, both increasing since 2019.

**Fauna Monitoring**

Two (2) amphibian species, 36 bird species, 12 mammal species and two (2) reptile species were recorded during monitoring in 2020 including three (3) threatened species being Speckled Warbler (*Chthonicola sagittata*), Large-eared Pied Bat (*Chalinolobus dwyeri*) and Large Bent-winged Bat (*Miniopterus orianae oceanensis*). A wide range of bird guilds were recorded during 2020 monitoring, including insectivores, nectivores and herbivores which forage at different stratum levels within vegetation.

Site R7 had the highest bird species richness with 15 species recorded and has been consistently recorded with the highest species richness since 2017; which is likely a result of the variety of habitat present nearby; and the presence of stags and a nearby water source.

### **Visual Monitoring**

Results from 2020 were largely consistent with previous years for previously monitored transects across the OC1 rehabilitation. Transects in OC1 rehabilitation scored between 'moderate' and 'good' in all attributes and a score of 'good' for feral animals, soil compaction and runoff and disturbance factors.

Transect 13 (OC2) achieved a score of 'poor' for overstorey components, with no overstorey species recorded along the transect, however this is expected in rehabilitation in its first year of monitoring. Monitoring of the visual transects within the April 2017 rehabilitation campaign areas of OC1 and OC4 (Transect 11 and Transect 12- established during autumn 2019) demonstrated high midstorey species richness with low densities (<25 individuals per ha). It is expected that these attributes will increase as the rehabilitation matures.

Native and exotic ground cover along the transects were higher compared to 2019 results, which is consistent with data from the floristic monitoring.

### **Assessment of Rehabilitation Performance Indicators**

Analysis of the Box Gum Woodland and Sedimentary Ironbark Forest rehabilitation against the Rehabilitation Management Plan Performance Indicators (and vegetation structure indicators) for Ecosystem and Land Use Establishment is presented in **Table 2** and **Table 3**.

**Table 2: Box Gum Shrubby Woodland rehabilitation assessment (Secondary Domain A)**

Completion Criteria (Ecosystem and Land Use Establishment)	<b>Objective:</b> Establish native vegetation comparable to Box Gum Shrubby Woodland communities including stands of <i>Allocasuarina</i> spp.
	Rehabilitation Monitoring Outcome
No evidence of significant noxious weed infestation	<p>One priority weed species, <i>Senecio madagascarensis</i> was recorded and contributed less than 1% cover for this secondary domain.</p> <p><b>Outcome:</b> Based on data from autumn and spring 2020, the area covered by all four rehabilitation campaigns within this secondary domain meet the completion criteria related to noxious weeds.</p>
Pest animal populations are not causing significant damage to rehabilitation areas.	<p>European Rabbit and Common Starling were observed in very low abundances within OC1 during both autumn and spring monitoring periods.</p> <p><b>Outcome:</b> Based on data from autumn and spring 2020, the area covered by all four rehabilitation campaigns within this secondary domain meet the completion criteria related to pest animal populations.</p>
There are one to three overstorey species from the Box Gum Shrubby Woodland EEC present by Years 5 to 7.	<p>Between one (1) and six (6) overstorey species were recorded at each site. All individual rehabilitation campaigns had at least two (2) overstorey species from the Box Gum Shrubby Woodland community. These included <i>Angophora floribunda</i> (Rough-barked Apple), <i>Eucalyptus albens</i> (White Box), <i>E. blakelyi</i> (Blakely's Red Gum), <i>E. crebra</i> (Narrow Leaf Ironbark), <i>E. melliodora</i> (Yellow Box), <i>E. moluccana</i> (Grey Box) and <i>E. punctata</i> (Grey Gum).</p> <p><b>Outcome:</b> Based on data from autumn and spring 2020; the area covered by all four rehabilitation campaigns within this secondary domain meet the completion criteria related to Box Gum Woodland overstorey species richness.</p>
Indicator species plant densities are trending towards plant densities of analogue sites at Years 5 to 7.	<p>This has been assessed on a rehabilitation campaign level. November 2010 and February 2012 rehabilitation campaigns indicator species plant densities are trending towards analogue site densities. Whilst indicator species densities at March 2012 and February 2013 have plateaued over the last two years, it is expected that these sites will continue to trend towards analogue densities as the rehabilitation continues to mature.</p> <p><b>Outcome:</b> Based on data from autumn and spring 2020; All Secondary Domain A – Box Gum Shrubby Woodland rehabilitation campaigns meet the completion criteria related to indicator species plant density trends.</p>
A minimum of four native ground cover species that are present in analogue sites are present by Years 5 to 7.	<p>During 2020, all individual sites recorded a minimum of four (4) and ranged from nine (9) to 22 native ground cover species that are present in analogue sites.</p> <p><b>Outcome:</b> Based on data from plots monitored in 2020, Secondary Domain A meets the completion criteria related to native ground cover species.</p>
Stands of <i>Allocasuarina</i> spp are present in Box Gum Shrubby Woodland rehabilitation areas by Years 5 to 7.	<p>Stands of <i>Allocasuarina</i> spp. were recorded within the OC1 rehabilitation in R1 (six (6) individuals) and R5 (13 individuals). An <i>Allocasuarina</i> spp. stand was also recorded in an area downslope (west) of R1.</p> <p><b>Outcome:</b> Based on data from plots and visual transects in 2020 this secondary domain meets the completion criteria related to the presence of stands of <i>Allocasuarina</i> spp.</p>

**Table 3: Sedimentary Ironbark Forest rehabilitation assessment (Secondary Domain B)**

Completion Criteria (Ecosystem and Land Use Establishment)	<p><b>Objective:</b> Establish native vegetation comparable to Sedimentary Ironbark Forest communities including stands of <i>Allocasuarina</i> spp.</p> <p>Rehabilitation Monitoring Outcome</p>
No evidence of significant noxious weed infestation	<p>Two priority weed species, (<i>H. perforatum</i> and <i>S. madagascarensis</i>) were recorded at less than 1% cover.</p> <p><b>Outcome:</b> Based on data from autumn and spring 2020, the area covered by all five rehabilitation campaigns within this secondary domain meet the completion criteria related to noxious weeds.</p>
Pest animal populations are not causing significant damage to rehabilitation areas.	<p>European Rabbit and Common Starling were observed in very low abundances within this Secondary Domain in OC1 during both autumn and spring monitoring periods. No feral animals were recorded within this Secondary Domain within OC4.</p> <p><b>Outcome:</b> Based on data from autumn and spring 2019, the area covered by all five rehabilitation campaigns within this secondary domain meet the completion criteria related to pest animal populations.</p>
There are two to three overstorey species from the Sedimentary Ironbark Forest community present by Years 5 to 7	<p>Between 1 and 4 indicator species were recorded within OC1 and OC4 Secondary Domain B – Sedimentary Ironbark Forest rehabilitation campaign areas during 2020.</p> <p><b>Outcome:</b> The rehabilitation campaigns March 2012, November 2012 and November 2016 have met this completion criteria. The rehabilitation campaigns December 2014, April 2017 (OC1) and April 2017 (OC4) have not yet met the completion criteria.</p>
Indicator species plant densities are trending towards plant densities of analogue sites at Years 5 to 7.	<p>November 2016, OC1 April 2017 and OC4 April 2017 rehabilitation campaigns have not yet reached Year 5. There has been no change in density at the OC1 April 2017 and OC4 April 2017 rehabilitation campaigns, whilst the November 2016 rehabilitation campaign is trending towards analogue densities.</p> <p>Density at the March 2012 rehabilitation campaign have fluctuated since 2017 and is not trending towards analogue densities.</p> <p>Density at the November 2012 rehabilitation campaign is trending towards analogue densities (2017 compared to 2020).</p> <p><b>Outcome:</b> Secondary Domain B – Sedimentary Ironbark Forest has not yet met the completion criteria on a landscape level. It is expected that densities across all rehabilitation campaigns will decrease (trend towards analogue values) as the rehabilitation matures.</p>
A minimum of four native ground cover species that are present in analogue sites are present by Years 5 to 7.	<p>All Rehabilitation campaigns except the more recently rehabilitated areas (OC1 April 2017 and OC4 April 2017) recorded a minimum of four native groundcover species that are present in analogue sites.</p> <p><b>Outcome:</b> Four out of five OC1 rehabilitation campaigns have met the completion criteria. Therefore, this completion criteria has not been met on a landscape scale but is progressing. The OC4 area of Secondary Domain B has not yet achieved this completion criteria.</p>
Stands of <i>Allocasuarina</i> spp are present in Sedimentary Ironbark Forest rehabilitation areas by Years 5 to 7.	<p>Two stands of <i>Allocasuarina</i> spp. were observed within the OC1 rehabilitation areas. R18 has over 50 individuals of <i>Allocasuarina</i> spp present and a less extensive stand is present at R14 (five (5) individuals).</p> <p><b>Outcome:</b> Based 2020 results, the OC1 area of Secondary Domain B meets the completion criteria related to the presence of stands of <i>Allocasuarina</i>.</p>