YANCOAL
兖煤澳大利亚有限公司

AshtonCoal
PART OF THE YANCOAL AUSTRALIA GROUP

# Longwalls 205 to 208

# Flora and Fauna Management Plan Addendum

**October 2020**

## DOCUMENT CONTROL

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# 1 INTRODUCTION AND SCOPE

This Addendum references the relevant sections of the currently approved Flora and Fauna Management Plan to ensure the requirements of the Extraction Plan are met. Due to the mine layout, a standalone document has not been prepared as the impacts associated with the Extraction Plan are addressed in the existing site wide management plans.

# 2 PREDICTED IMPACTS

This Addendum addresses potential subsidence impacts to flora and fauna from underground mining (secondary extraction) of Longwalls 205 to 208 in the Upper Lower Liddell (ULLD) Seam only.

## 2.1 PREDICTED SUBSIDENCE

See **Section 4** of the Extraction Plan Main Text for a detailed description of the predicted subsidence impacts.

In summary, SCT (2020) predicts that incremental subsidence will range from 2.2 metres (m) to 2.8 m, and cumulative subsidence will range from 3.1 m to 5.8 m. Incremental tilts are predicted to range from 33 millimetres per metre (mm/m) to 56 mm/m, and from 73 mm/m to 106 mm/m on stacked edges. Incremental strains are predicted to range from 21 mm/m to 30 mm/m and from 37 mm/m to 53 mm/m on stacked edges. Cumulative tilts are predicted to range from 44 mm/m to 94 mm/m, and from 103 mm/m to 219 mm/m on stacked edges. Cumulative strains are predicted to range from 22 mm/m to 47 mm/m and from 52 mm/m to 110 mm/m on stacked edges.

The maximum values of cumulative vertical subsidence forecast for the Longwalls 205 to 208 Extraction Plan are consistent with forecasts in previous assessments for approval modification or for extraction plans (SCT, 2020). The values of tilt and strain forecast for Longwalls 205 to 208 are consistent with those forecast for two and three seams of mining in DA 309-11-2001i (MOD6) for the *Bowmans Creek Diversion Modification Environmental Assessment* (EA) (Evans and Peck, 2009).

SCT (2020) concluded that, in general, the subsidence impacts from the forecast subsidence effects are expected to be similar in nature and magnitude to those forecast for the mining of Longwalls 105 to 107 in the Upper Liddell Seam. Similar management strategies to those used for Longwalls 105 to 107 and Longwalls 201 to 204 are expected to be effective to mitigate and remediate subsidence impacts and environmental consequences from the planned mining of Longwalls 205 to 208.

## 2.2 PREDICTED IMPACTS TO FLORA AND FAUNA

Biannual ecological monitoring undertaken at the Ashton Coal Project since 2006 has included targeted surveys for the grey-crowned babbler (*Pomatostomus temporalis temporalis*), hooded robin (*Melanodryas cucullata cucullata*) and speckled warbler (*Chthonicola sagittatus*) within all areas of potential habitat within the subsidence impact area, and has identified no evidence of adverse post-mining impacts on the extent of threatened species and threatened ecological communities occurring within the Extraction Plan area (Eco Logical Australia [ELA], 2020).

ELA (2020) identified that subsidence impacts associated with ponding and cracking/stepping are likely to require remediation works to approximately 4 hectares of Swamp Oak – Weeping Grass grassy riparian forest, with the majority of predicted subsidence impacts occurring within non-native vegetation.

ELA (2020) considered it unlikely that the proposed mining of Longwalls 205 to 208 in the ULLD Seam would have significant adverse impacts on known or potentially occurring threatened and protected flora and fauna species, populations and ecological communities that currently or could occur within the Extraction Plan area. This is based on the conclusion of SCT (2020) that predicted impacts are not expected to be substantially different compared to the impacts predicted for mining of Longwalls 105 to 107.

Furthermore, ELA (2020) noted that annual ecological monitoring conducted throughout the mining of the previous two seams in the same location had not identified adverse post mining impacts on the extent of threatened species and threatened ecological communities occurring within the Extraction Plan Area. Based on the subsidence predictions provided by SCT (2020) and the continued implementation of management strategies to mitigate and remediate management impacts as documented in ACOL's Flora and Fauna Management Plan, mining of the ULLD seam is considered unlikely to have a significant impact on any known or potentially occurring threatened species, threatened ecological communities, endangered populations or migratory species listed under the BC Act or the EPBC Act.

It should be noted that the EA (Evans and Peck, 2009) concluded it was very unlikely there would be any impact on groundwater dependent ecosystems (GDEs), which, at the time of writing the EA, included stands of River Red Gums (*Eucalyptus camaldulensis*). River Red Gums (*E. camaldulensis*) are known to be an adaptable species and will respond to water availability by using a combination of groundwater, surface water and soil moisture (Jones et. al. 2020). Since the preparation of the EA, updated mapping of GDEs for the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009* (NSW) shows there are no high priority GDEs within and surrounding the Extraction Plan area. Therefore, ELA (2020) concluded there would be minimal impact on any GDEs or other vegetation communities occurring on the alluvium outside of the direct subsidence impact areas.

# 3 FLORA AND FAUNA MANAGEMENT GAP ANALYSIS

The following gap analysis demonstrates where the requirements of the Extraction Plan Guidelines are covered within the existing approved Flora and Fauna Management Plan.

**Table 1** has been completed rather than repeating information in a separate Management Plan document.

**Table 1. Flora and Fauna Management Plan – Gap Analysis**

| Aspect | Section/Comment |
|---|---|
| Overview of all landscape features, heritage sites, environmental values, built features or other values to be managed under the component plan; | ACOL Flora and Fauna Management Plan **Section 4.2.**<br>ELA (2020) Flora and Fauna Assessment for Longwalls 205 to 208 **Section 2.** |
| Setting out all performance measures included in the development consent relevant to the features or values to be managed under the component plan; | ACOL Flora and Fauna Management Plan **Section 4.1.** |
| Setting out clear objectives to ensure the delivery of the performance measures and all other relevant statutory requirements (including relevant safety legislation); | ACOL Flora and Fauna Management Plan **Section 2.1 and Appendix A.** |
| Proposing performance indicators to establish compliance with these performance measures and statutory requirements; | ACOL Flora and Fauna Management Plan **Section 4.1.**<br>ELA (2020) Flora and Fauna Assessment for Longwalls 205 to 208 **Section 3.** |
| Describing the landscape features, heritage sites and environmental values to be managed under the component plan, and their significance. It should be noted that a full description of such features, sites and values would commonly have been provided and considered in a recent environmental impact assessment. Consequently, this section can be relatively brief, and focus on the presentation of appropriate figures and/or graphical plans; | ACOL Flora and Fauna Management Plan **Section 4.**<br>ELA (2020) Flora and Fauna Assessment for Longwalls 205 to 208 **Section 2.** |
| Fully describing all currently-predicted subsidence impacts and environmental consequences relevant to the features, sites and values to be managed under the component plan; | This document **Section 2.1.**<br>SCT (2020) Subsidence Assessment **Section 4.**<br>ELA (2020) Flora and Fauna Assessment for Longwalls 205 to 208 **Section 3.** |
| Fully describing all measures planned to remediate these impacts and/or consequences, including any measures proposed to ensure that impacts and/or consequences comply with performance measures and/or the Applicant's commitments; | ACOL Flora and Fauna Management Plan **Section 4.** |
| Describing the existing baseline monitoring network and the current baseline monitoring results, including pre-subsidence photographic surveys of key landscape features and key heritage sites which may be subject to significant subsidence impacts (such as significant watercourses, swamps and Aboriginal heritage sites); | ELA (2020) Flora and Fauna Assessment for Longwalls 205 to 208 **Section 2.**<br>Subsidence Monitoring Program. |

| Aspect | Section/Comment |
|---|---|
| Fully describing the proposed monitoring of subsidence impacts and environmental consequences; | ACOL Flora and Fauna Management Plan **Section 4.3.**<br>Subsidence Monitoring Program. |
| Describing the proposed monitoring of the success of remediation measures following implementation; | ACOL Flora and Fauna Management Plan **Section 4.3.**<br>Subsidence Monitoring Program |
| Fully describing adaptive management proposed to avoid repetition of unpredicted subsidence impacts and/or environmental consequences; | ACOL Flora and Fauna Management Plan **Section 6.**<br>Mining Operations Plan **Section 9.** |
| Fully describing contingency plans proposed to prevent, mitigate or remediate subsidence impacts and/or environmental consequences which substantially exceed predictions or which exceed performance measures; | ACOL Flora and Fauna Management Plan **Section 4.7.** |
| Listing responsibilities for implementation of the plan; and | ACOL Flora and Fauna Management Plan **Section 3.** |
| An attached Trigger, Action, Response Plan (effectively a tabular summary of most of the above). | ACOL Flora and Fauna Management Plan **Section 4.6.** |

# 4 REFERENCES

Evans and Peck (2009) *Bowmans Creek Diversion Environmental Assessment*. Prepared for Ashton Coal Operations Pty Ltd.

Jones, C., Stanton, D., Hamer, N., Denner, S., Singh, K., Flook, S., and Dyring, M., (2020) Field investigation of potential terrestrial groundwater-dependent ecosystems within Australia's Great Artesian Basin. *Hydrogeology Journal*. Vol 28, pp. 237-261.

Strata Control Technology (2020) S*ubsidence Assessment for the Extraction Plan for Longwalls 205 – 208 in the Upper Lower Liddell Seam*, Report Number ASH4927.