

Our Reference: 5856
Date: 23 September 2015

Mr David Calvert
A/g Assistant Secretary
Environment Assessment Branch
Department of the Environment
Canberra, ACT

RE: EPBC 2009/4821 – UPDATED Year 1 Monitoring Report for Wotonga Offset Area Management Plan – Millennium Mine Expansion Project

Ecology and Heritage Partners Pty Ltd (EH Partners) have been engaged by Peabody Energy Australia (Peabody) to implement the management and monitoring requirements for their environmental offset area that has been established on the “Wotonga Pastoral Holding” property, north-east of Moranbah in central Queensland. The offset area was established to comply with conditions of approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC 2009/4821) (Appendix 1). This letter has been prepared to show compliance with the monitoring requirements for Year 1 as described in section 4 of the Wotonga Offset Area Management Plan. Offset area details are provided in Appendix 2.

Initial monitoring of the offset area was originally scheduled to be completed by 30 June 2014. Year 1 monitoring has been delayed due to several factors, including:

- Delays in sourcing and contracting a suitable company to implement the Wotonga Offset Area Management Plan;
 - This has been resolved by the engagement of EH Partners to fulfil this role.
- Delays in obtaining access to the offset area via the haul road for the Burton Coal Mine, which is operated by Thiess; and
- Wet weather delays between November 2014 and April 2015, which resulted in limited opportunities to access the haul road. The haul road is only accessible during dry conditions as it is operated by Thiess as part of the Burton Coal Mine and is closed during and post rainfall due to safety requirements.

The offset area consists of an active management area (containing regional ecosystem 11.9.5 *Acacia harpophylla* and/or *Casuarina cristata* open forest on fine-grained sedimentary rocks) and a passive management area (comprising the adjoining scarps and associated vegetation). The offset area was inspected on 4 August, 2015, by Dave Fleming (Principal Ecologist, EH Partners), Daryn Railey (Peabody) and Lance Smith (Agistee, Wotonga Property). Cattle have been excluded from the offset area since November 2014 and no other agricultural activities have been undertaken within the area since the offset was established.

1 Visual Monitoring

Based on the visual inspection and discussions with Mr Smith, the status of the offset area is as follows:

1.1 Perimeter fencing and gates

The offsets area (combined active and passive management areas) is fully fenced. The fences are a three strand barb-wire type and are in good condition. Where the fence crosses Brook Creek, additional sections have been included to prevent cattle entering the area. Gates are located at the north-western, south-eastern and south-western corners of the offset area and are in good condition. No repairs are required to fences or gates at this time. General maintenance is provided by Mr. Smith.

1.2 Noxious and environmental weeds

The most dominant weed species within the offset area is buffel grass *Pennisetum ciliare*. There are also scattered occurrences of velvety tree pear *Opuntia tomentosa* and harrisia cactus *Harrisia martinii*. Velvety tree pear and harrisia cactus are declared Class 2 plants under the *Land Protection (Pest and Stock Route Management) Act 2002* (LP Act) and velvety tree pear is a Weed of National Significance (WoNS). All mature cactus plants observed showed signs of attack from the biological control agent *Cactoblastis cactorum* moth, indicating that active control (eg. spraying) may not be required. A small number of cactus seedlings were encountered during the monitoring survey and all were removed by hand. Manual removal of seedlings will continue for all other monitoring events and monitoring of *Cactoblastis* moth attack on mature plants will also continue. We believe that these actions are sufficient to minimise the impacts from cactus within the offset area.

Buffel grass is established within the offset area, however it varies in extent and density depending upon the age and structure of the brigalow regrowth (generally, the more open the brigalow canopy, the more buffel grass present). However, the buffel grass threat does not appear to be as significant as first indicated. The results from the BioCondition monitoring showed that buffel grass comprises less than 20% of the total ground cover. We believe that active management of buffel grass (ie. via pulse grazing) is not warranted at this time due to the less than expected cover of the grass and potential exacerbation of erosion from cattle impacts.

1.3 Erosion and areas with high erosion potential

There are areas of gully erosion within the offset area along the eastern boundary fence and stream and channel erosion within Brook Creek. The soil type within the offset area is particularly prone to this type of erosion and is not unexpected nor unique within the region. The removal of cattle from the offset area is expected to reduce the risk of continuing erosion; however, remediation activities have not been undertaken. The areas of erosion will continue to be monitored as part of the regular visual inspections, inspections after severe weather events and photo monitoring. If erosion is found to be increasing or sedimentation is increasing in downstream environments, remediation options will be considered and implemented. Remediation options being investigated include:

- partial infill of gullies with mulch, rocks or imported soil;
- installing rock beaches or gabions in high flow areas;
- installing retards or groynes in suitable sections of the creek;

- installing geotextile within suitable areas; or
- installing rock chutes at the head of gullies.

The final mix of methods will be determined through the results of regular inspections and photo monitoring to target problematic areas and to ensure that remediation in one section does not exacerbate erosion in downstream environments.

1.4 Bushfire fuel loads

In the preceding wet season (2014/15), the Moranbah Airport (nearest station to the offset area) experienced slightly above average rainfall (463mm compared to a long-term mean of 419.9mm). Although rainfall in the central Queensland region can be sporadic, the offset area gained sufficient rainfall over the period and new growth on vegetation was observed. Buffel grass, in particular, responds favourably to rainfall and therefore it is likely that fuel loads would be higher than normal within more open portions of the offset area (i.e. those areas with reduced canopy cover) due to the absence of grazing pressure and average rainfall. The occurrence of buffel grass remains lower than expected overall.

1.5 Damage/degradation from pest animal populations

The primary pest animal threat within the offset area are wild dogs / dingoes *Canis lupus / C. l. dingo*. Rabbits *Oryctolagus cuniculus* and wild pigs *Sus scrofa* are also present, but at much lower density. While there are no obvious signs of recent damage or degradation on vegetation or soils from pest animals, the presence of such pests is likely to result in adverse impacts on the offset area and exacerbation of existing issues such as weed spread and soils erosion. Although there have not been any targeted pest animal control activities conducted on the offset area to date, Mr Smith has undertaken opportunistic shooting of wild dogs and pigs within the surrounding area, however specific numbers are not available. Future site visits will closely monitor impacts from pest animals and if recent, extensive damage is observed, control measures will be implemented.

1.6 Success of revegetation works

Active revegetation activities have not been undertaken to date and are not currently planned to occur. The removal of cattle from the offset area has allowed natural regeneration to continue throughout the active management area in the absence of grazing pressures. The results of the BioCondition monitoring has showed that canopy species are being recruited and new growth on existing plants indicates that natural regeneration is occurring.

1.7 Groundcover and signs of land degradation during pulse grazing

Cattle have been removed from the offset area since November 2014. Reintroduction of cattle for pulse grazing purposes has not occurred and the risks and benefits of this action are still being considered. As the BioCondition monitoring has showed that buffel grass is not as extensive as previously indicated, the benefits of pulse grazing are likely to be limited. However, the risks of cattle movements through the offset area exacerbating erosion are substantial. We consider that the pulse grazing trial be put on hold. If subsequent monitoring surveys show a marked increase in buffel grass extent and/or abundance then the pulse grazing trial will be reconsidered.

2 Additional Monitoring Measures (fauna)

Fauna monitoring is planned to occur between October and November 2015 to coincide with peak fauna activity within the central Queensland region. The fauna survey will be completed as per the requirements in the Wotonga Offset Area Management Plan and the results will be appended to this monitoring report.

3 Field Component of Ecological Equivalence Monitoring

Ecological equivalence monitoring (i.e. BioCondition assessments) of permanent monitoring sites was completed in August 2015 (Figure 1). Two BioCondition sites were established in the locations denoted within the Offset Area Management Plan and assessed according to the methodology within the assessment manual for BioCondition Sites in Queensland (Eyre *et al.* 2015). The BioCondition scores are presented below (Table 1). The BioCondition scores are between 0 and 1, where a score of 0 means that the vegetation does not resemble the condition of the undisturbed vegetation used as a benchmark, and a score of 1 means that the vegetation meets the benchmark vegetation condition.

A score of 0.535 indicates that the vegetation within the offset area is well on track to attaining a similar condition of the benchmark community. Specifically, the offset area shows:

- presence of dominant canopy species and recruitment of canopy species;
- presence of fallen woody debris and a high proportion of debris in an advanced state of decay;
- a low percentage of weed cover (e.g. buffel grass comprised less than 20% of ground cover); and
- a high landscape (context, connectivity and size of patch) score.

Table 1 BioCondition Scores for Brigalow.

BioCondition Site	Datum / Zone	Easting	Northing	Score	Assessment date
1	GDA94 / MGA Zone 55	624056	7589662	0.535	26/8/2015
2		625036	7589915	0.535	26/8/2015

4 Permanent Photo-monitoring Sites

Photo monitoring points were established within the offset area. Sample photos from each point are shown in Appendix 3 and the locations shown in Table 2 and in Figure 1. Additional photographs from the visual inspection are provided in Appendix 4.

Table 2 Coordinates for Photo-monitoring Points.

Photo-monitoring Point	Easting	Easting
PM01	624951	7590122
PM02	624779	7590533
PM03	624576	7590371
PM04	624133	7589657
PM05	624292	7589503
PM06	624293	7589194
PM07	623720	7589438
PM08	622772	7589464
PM09	623207	7589923

Coordinates are in datum GDA94, MGA Zone 55 projection

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Figure 1 Location of Photo-monitoring and BioCondition Sites within the Offset Area (red line) and active management area (blue line)

5 Summary and Conclusion

An inspection of the offset area was undertaken on 4 August, 2015 by representatives from EH Partners, Peabody and the agistee of the Wotonga property for the purposes of visual monitoring according to Section 4 of the Wotonga Offset Area Management Plan. Photo-monitoring and BioCondition assessments were completed in late August 2015 by EH Partners and the results included in this report.

The offset area is in relatively good condition as evidenced by the initial BioCondition score of 0.535 for the active management area. The score shows that the offset area is well on track to meeting the benchmark condition of an undisturbed community. There is also very little evidence of impacts from weeds or pest animals within the offset area indicating that pest animal threats are minor.

Management and rehabilitation of the offset area will support the improvement of the BioCondition score through:

- cessation of long-term cattle grazing (unless pulse grazing is used to control buffel grass);
- increasing the number of large trees as existing trees grow and exceed the benchmark;
- increasing the tree cover as trees grow, which will also increase the proportion of leaf litter on the ground;
- reducing the cover of buffel grass as the tree canopy increases and shades out buffel grass; and
- increasing the species richness of shrubs, herbs and grasses as natural recruitment occur (such as wind blown seed or from birds).

Future monitoring events would be expected to show a gradual improvement in the BioCondition score, whilst recognising that seasonal rainfall has a large influence on plant growth in central Queensland. Future monitoring will also highlight other issues of concern such as a weed or pest animal outbreak, which can then be managed in line with the Offset Area Management Plan.

A fauna survey is scheduled for completion in October or November to coincide with peak fauna activity. Erosion repair and rehabilitation is also scheduled for after the 2015-16 wet season.

Yours sincerely



Dave Fleming
Principal Ecologist
Ecology and Heritage Partners Pty Ltd

Appendix 1 – Conditions of Approval under the EPBC Act



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Approval

Millennium Expansion Project – EPBC No 2009/4821

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted Peabody Energy Australia Pty Ltd

proponent's ACN (if applicable) 93 096 909 410

proposed action To extend the current open cut mining operation on the existing ML 70313 and additionally into two adjoining leases Mining Lease Application MLA 70401 "North Poitref" and Mineral Development Licence MDL 136 "Mavis Downs", 22km east of Moranbah and 16km south west of Coppabella in central Queensland as described in the referral received 27 March 2009 and the Millennium Expansion Project Environment Impact Statement dated December 2010 (see EPBC Act Referral 2009/4821).

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved

conditions of approval

This approval is subject to the conditions specified below.

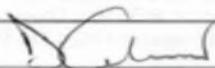
expiry date of approval

This approval has effect until 28 October 2031.

Decision-maker

name and position David Calvert
A/g Assistant Secretary
Environment Assessment Branch

signature



date of decision

3 November 2011

Conditions attached to the approval

1. To offset the impact to the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community, the person taking the action must register a legally binding conservation mechanism (such as a Nature Refuge Agreement) over a minimum of 112.5 hectares of the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community (the offset area) as identified in the offset management plan referred to in condition 2. The mechanism/s must provide enduring protection for protection for the offset area and be registered within 2 years of the date of this approval.

The conditions of the conservation mechanism must ensure that management actions are undertaken for the protection and enhancement of the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community. The person taking the action must obtain agreement from any third parties responsible for management actions and provide details of the responsible parties, including their position or status as a separate contractor, to the **department**.

2. To offset the impacts to the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community, the person taking the action must submit to the **Minister** for approval an Offset Management Plan within 12 months of the date of this approval.

This Offset Management Plan must include, at a minimum, the following information:

- a. the desired outcomes/objectives of implementing the plan;
- b. details of Brigalow (*Acacia harpophylla* dominant and co-dominant) endangered ecological community offset areas, including a textual description and map to clearly define the location and boundaries of the offset area. This must be accompanied with the **offset attributes** and a **shapefile**;
- c. details of management actions to protect and enhance the extent and condition of the threatened species habitat values including rehabilitation, weed control, fire management, erosion and sediment control, management of livestock and restrictions on access, within the offset area;
- d. the timing, responsibilities and performance criteria for such actions;
- e. a monitoring plan including ecological surveys that must be undertaken to assess the success of the management measures against identified milestones and objectives;
- f. a process to report, to the **department**, the management actions undertaken in the offset areas and the outcome of those actions, including identifying any need for improved management;
- g. a description of the potential risks to successful management and rehabilitation in the offset areas, and a description of the contingency measures that would be implemented to mitigate these risks; and,
- h. details of parties responsible for monitoring, reviewing and implementing the plan.

The Offset Management Plan must be implemented.

3. Before impacting or removing any EPBC listed ecological community or species, the person taking the action must provide to the **Minister** a Threatened Flora and Fauna Species and Ecological Communities Management Plan. The Plan must contain, but is not limited to, the following:
 - a. Management actions relating to EPBC listed species; and
 - b. Mitigation actions relating to EPBC listed species.

The Threatened Flora and Fauna Species and Ecological Communities Management Plan must be implemented. This plan may be made publicly available on the internet by the **department**.

Note: Condition 8 provides that, if the **Minister** believes that it is necessary or desirable for the better protection of the environment, the **Minister** may require the person taking the action to make, within a period specified by the **Minister**, revisions to a plan required under these conditions.

4. Within 14 days from the **commencement of construction**, the person taking the action must advise the **department** in writing of the actual date of **commencement of construction**.
5. Within three months of every 12 month anniversary of the **commencement of construction**, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **department** at the same time as the compliance report is published.
6. 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**.
7. If the person taking the action wishes to carry out any activity otherwise than in accordance with the Plans referred to in conditions 2 and 3, as specified in the conditions, the person taking the action must submit to the **department** for the **Minister's** written approval a revised version of that plan. The varied activity shall not commence until the **Minister** has approved the revised plan in writing. If the **Minister** approves the revised plan, that plan must be implemented in place of the plan originally approved.
8. If the **Minister** believes that it is necessary or convenient for the better protection of listed threatened species and communities to do so, the **Minister** may request that the person taking the action make specified revisions to plans specified in the conditions and submit the revised plan for the **Minister's** written approval. The person taking the action must comply with any such request. The revised plan must be implemented. Unless the **Minister** has approved the revised plan then the person taking the action must continue to implement the original plan.
9. If, at any time after 5 years from the date of this approval, the person taking the action has not substantially commenced the action, then the person taking the action must not substantially commence the action without the written agreement of the **Minister**.
10. The person taking the action must maintain accurate records substantiating all activities and outcomes associated with or relevant to the above conditions of approval, including measures taken to implement the management plans required by this approval, 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 also be publicised through the general media.

Note: To avoid doubt, if a condition of a State (QLD) approval held by the proponent requires a plan relating to EPBC-listed species the proponent may simultaneously meet the relevant requirements of these conditions by submitting a single plan.

Appendix 2 – Wotonga offset details

Departmental Reference Details

Reference and Assessment Details	
Queensland Departmental Reference No: MIN10034430	Queensland Offset ID: TBA
Property Address: Wotonga Pastoral Holding, Ellensfield Road, Burton, Queensland	
Real property description: Lot 13 on SP178466	
Tenure: Leasehold	Primary local government area: Isaac Regional Council

Offset Area Details

Landholder Details	
Registered Lot on Plan: Lot 13 on SP178466	
Registered Owner/s on Title: State of Queensland	
Lessee: Wotonga Pastoral Pty Ltd	Trustee: N/A
Business/Company name (ABN/CAN): Peabody (Burton Coal) Pty Ltd (formerly Wotonga Pastoral Pty Ltd) (ACN: 077 679 513)	
Phone number: +61 (7) 3239 7279	Mobile Phone: +61 (4) 488 224 546
Fax number: +61 (7) 3229 1776	Contact person: John O'Brien
Email: jobrien2@peabodyenergy.com	
Postal address: GPO Box 1025, Brisbane QLD 4001	

Appendix 3 – Photo monitoring



Photo-monitoring point 1 looking north (regional ecosystem 11.7.3)



Photo-monitoring point 2 looking north (RE 11.7.2)



Photo-monitoring point 3 looking north (RE 11.7.3)



Photo-monitoring point 4 looking north (erosion)



Photo-monitoring point 5 looking north (RE 11.9.5)



Photo-monitoring point 6 looking north (RE 11.7.2)



Photo-monitoring point 7 looking north (RE 11.5.3a)



BioCondition site 1 looking north (RE 11.9.5)



BioCondition site 2 looking north (RE 11.9.5)

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Appendix 4 – Additional Photo Monitoring



Plate 1 – view east showing low lying brigalow vegetation (left) and vegetation on scarps (right).



Plate 2 – view east showing low lying brigalow vegetation. The foreground shows regenerating *Capparis* species.



Plate 3 – Existing erosion on the south-western slopes.



Plate 4 – Existing erosion on the south-western slopes.



Plate 5 – Existing erosion along Brook Creek



Plate 4 – Existing erosion on the south-western slopes and condition of fencing.

REFERENCES

Ecofund/CO2. 2013. *Wotonga Offset Area Management Plan – Millennium Expansion Project*. A report prepared for Peabody Energy Australia Pty Ltd.

Eyre, T.J., Kelly, A.L, Neldner, V.J., Wilson, B.A., Ferguson, D.J., Laidlaw, M.J. and Franks, A.J. 2015. *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual*. Version 2.2. Queensland Herbarium, Department of Science, Information Technology, Innovation and Arts, Brisbane.

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