NSW GOVERNMENT | Office of Environment & Heritage

Your reference:
Our reference: DOC12/47185
Contact: Peter Christie
(02) 68835317

Howard Reed
Manager, Mining and Industry Projects
Major Projects Assessment
Department of Planning and Infrastructure
GPO Box 39
Sydney NSW 2011

Attention: Matthew Riley

Dear Mr Riley

**RE: Cobbora Coal Project (10_0001) Exhibited Environmental Assessment**

I refer to your letter received on 3 October 2012 seeking comment from the Office of Environment and Heritage on the exhibited Environmental Assessment (EA) for the Cobbora Coal Project.

Details of the outcome of the OEH review are provided in Attachments 1 (Aboriginal Cultural Heritage) and attachment 2 (Biodiversity).

In summary OEH has provided comments on the following matters with regard to biodiversity:

- unresolved issues regarding potential impacts on OEH Estate;
- adequacy of surveys for cryptic threatened flora species;
- adequacy of assessment and description of grassland areas;
- 'operational surpluses' in the Cudgegong River;
- protection of instream habitat quality;
- the nature of mounds of unknown origin in the Project area;
- location, ownership and future tenure of offsets;
- the design of offsets;
- consideration and calculation of species credits and resultant offset requirements for threatened species;
- impacts to grassland areas are not considered under the BOS.
- the application of Tier 3 (OEH Offset Policy) for non-red flag vegetation communities and some threatened species credits; and
- Use of indirect offset measures.

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With regard to Aboriginal Cultural Heritage matters, OEH has provided recommendations in relation to the conditions applied to any approval granted, and the preparation of the Aboriginal Heritage Management Plan.

If you have any questions regarding this matter please contact either myself on 02 6883 5317 or David Coote on 02 6883 5303.

Yours sincerely

**PETER CHRISTIE**
**Coordinator, North West Region**
**Conservation and Regulation Division**

19 NOV 2012

Attachment 1. Aboriginal Cultural Heritage
Attachment 2. Biodiversity

# ATTACHMENT 1
# Aboriginal Cultural Heritage

The OEH review of the Aboriginal cultural heritage assessment for the Cobbora Coal project has been undertaken with reference to:

- the Aboriginal Cultural Heritage (ACH) draft *Guidelines for Aboriginal Cultural Heritage Impact Assessments (Part 3A);*
- *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC 2005, DECCW 2010);
- the DGRs as proscribed by the Department of Planning and Infrastructure (DoPI);
- Previous OEH adequacy comments of the draft EA; and
- Several OEH field inspections to the proposed mine site.

**OVERVIEW**

OEH is of the view that the ACH assessment adequately presents clear spatial information of the Aboriginal sites across the landscape relative to the project area. Information about the method of survey and landscape assessment described in the report adheres to accepted standards for archaeological landscape and site assessments. Issues previously discussed by OEH during the inter agency adequacy check, in regards maps and survey coverage, are addressed in the final ACH assessment report.

OEH understands that 229 Aboriginal sites have been identified during the ACH assessment and that of these 78 will be subject to varying degrees of harm but that 151 sites will be protected. OEH recognises that the proposed development has reduced the number of sites to be impacted from the original proposal by modifying mine operations away from the culturally sensitive Sandy Creek and Laheys Creek. The report recommends mitigation involving collection of Aboriginal objects, salvage excavation and permanent storage and safe keeping of salvaged objects.

The ACH assessment report adequately describes the extent of impacts to Aboriginal sites. The descriptive accounts of the significance of those sites in threat from the development proposal as well as those listed for conservation are appropriate and reasonably considered, described, and linked to Aboriginal consultation. The report adequately describes the scope of the Aboriginal Heritage Management Plan (AHMP) which will be compiled post approval and in consultation with the Registered Aboriginal Parties, and OEH. However, OEH strongly requests that research of mitigated sites is appropriate to the scale of impact to ACH values across the mine easement.

<u>Recognition of Proponent's efforts towards community social and economic opportunities</u>

OEH has had the opportunity to examine the Proponent's proposals for social and economic opportunities for Aboriginal people residing in Dubbo and Wellington and wish to acknowledge the efforts of the Proponent, Cobbora Holdings Company, in developing a robust and long term strategy for Aboriginal employment and skill development. There are additional skill development and employment opportunities for Aboriginal people that can also be realised through involvement in research generated through the development of the AHMP. OEH strongly advocates that adequate resource and opportunity is provided for the RAPs for skilling in ACH research post approval as part of the AHMP process.

There are two specific recommendations OEH wish to bring to DoPI's attention for action:

**ISSUE 1**

Demonstrated certainty that areas designated for protection will be carried out effectively.

**Background**

OEH notes that erosion of creeks caused by rural landuse practices has affected Aboriginal sites within the Project easement which is threatening sensitive areas through creek bank collapse and erosion. Some of the larger and highly sensitive sites selected for conservation are under threat from creek erosion which is likely to be accelerated by the construction of the mine and heavy vehicle thoroughfares that intersect culturally sensitive areas.

**Recommendation**

OEH wish to raise, prior to the preparation of the AHMP, that there is a condition instructing the construction of adequate protection and stabilisation of creeks associated with protected Aboriginal sites within the Project Area; and that adequate measures are put in place in the AHMP to manage sensitive areas exposed to traffic thoroughfares.

**ISSUE 2**

Impacts to Aboriginal cultural heritage

**Background**

Despite the reduced number of sites to be impacted from the original mine proposal, and the ACH assessment report evaluation of low accumulated harm to Aboriginal sites, OEH remains concerned that a significant number of Aboriginal sites will be harmed by the proposed development and that this will contribute to the accumulated impact to sites in the region. OEH bases this view on an examination of the OEH Aboriginal Heritage Information Management System (AHIMS) across the Talbragar subregion of the Brigalow Belt South Bioregion (BBSB). The loss of 78 sites within the confines of the Project Area is significant.

The close location of the Goonoo forest landscapes to the Cobbora Project area and the protection to Aboriginal sites it offers under the conservation covenant of Community Conservation Area (CCA), does not offer a like for like replacement for those sites to be harmed in the Project area. Importantly, the Goonoo CCA is located in the Pilliga Subregion of the BBSB which forms a different landscape context to where the Project area is located and it remains unclear if those sites located in the Goonoo CCA offer a representative sample of sites for the wider region. The bioregion subregions, Pilliga and Talbragar, show transitions to different neighbouring landscapes represented in adjoining bioregions where differences in Aboriginal sites are likely to reflect differences in landscape.

OEH expects that mitigating impacts to ACH will be appropriate to the size of the Cobbora mine project and the number of sites that will be harmed. Research of Aboriginal cultural heritage at Cobbora Project Area, post approval under the AHMP, must extend beyond the collection and salvage of objects for storage and be of a particular high standard for the following reasons:

- The loss of 78 Aboriginal sites.
- To ensure Ecological Sustainable Development for the proposed management of Aboriginal heritage.
- To identify how Aboriginal people strategically utilised transitional landscapes (ecotones)

- To establish a benchmark of ACH knowledge that will inform future planning decisions before various industries expand into the region.
- Confirm the appropriate model for protecting a representative sample of Aboriginal culture heritage values that is indicative for the subregion.

**Recommendation**

That DoPI consider a condition that instructs the Proponent to resource suitable research that examines the cultural heritage values in areas of biodiversity offsets as a way of contributing towards Aboriginal landscape knowledge for intergeneration opportunities, and future planning decisions.

# ATTACHMENT 2

# Biodiversity

OEH has reviewed the EA against the NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects (OEH Offset Policy).

OEH understands that the impacts of the proposed project include:

- Removal of up to 1,867ha of native woodland vegetation, including 79ha of identified Endangered Ecological Communities and 16.7km of cliff-line habitat; and removal of an additional 967ha of "Native Pasture" and 1,866ha of "Improved Pasture".
- Removal of habitat for up to 43 threatened fauna species and eight threatened flora species. The proponent expects impacts to be significant for three threatened flora species and 14 threatened fauna species.
- Removal of approximately:
    - 0.4% of the known local population of *Acacia ausfeldii* (200 individuals);
    - 53% of the known local population of *Homoranthus darwinoides* (227 individuals);
    - 57% of the know local population of *Zieria ingramii* (727 individuals); and
    - 100% of the known local population of *Tylophora linearis* (9 individuals).
- Indirect impacts associated with noise, dust, light spill and fragmentation.
- Potential impacts to NPWS Estate.

## ENVIRONMENT ASSESSMENT

[unless otherwise stated, citations in this section refer to EA Appendix H]

### ISSUE 1

Unresolved issues regarding potential impacts on OEH Estate.

**Background**

There are a number of matters relating to OEH Estate which require resolution. Whilst the EA states that there will be no impacts to OEH Estate, some concerns remain.

Firstly, the inset of Figure 3.16 does not show the scale and so the distance of the pipeline route from Yarrobil NP cannot be determined.

The EA also states that a small section of Brooklyn Road will be realigned to the north of the rail spur and a road underpass of the rail spur will provide access to the south. It is not clear where the underpass is proposed to be or whether this is to enable access to Goodiman SCA. The location of the underpass needs to be indicated on Figure 3.14. The underpass must also be large enough to allow suitable access for heavy plant and vehicles such as graders on low loaders, heavy combination vehicles and Category 1 fire fighting tankers. A low level crossing would be preferable to an underpass to enable access for these types of vehicles.

The proponent should also make provision for wildlife movement across the rail spur between Goodiman SCA and Tuckland SF, by way of underpasses or other suitable means, particularly in the northwest corner of Goodiman SCA where it abuts a vegetated corridor.

Furthermore, the EA does not include specific assessment of the likely indirect impacts on OEH Estate as a result of the mine (e.g. edge effects, fragmentation, noise, light spill and dust). While the EA considers the impacts to threatened species of plant operation noise at the site, it doesn't consider impacts from rail traffic noise along the rail spur. Of particular concern is the location where

the rail runs adjacent to Goodiman SCA and other areas of intact native vegetation where species may be affected. It is important that the EA identifies and recognises the likely level of degradation of these areas as a result of indirect impacts, and the degree to which the proponent expects that such impacts could actually be mitigated.

The EA only addresses fire protection for mine buildings and infrastructure and does not adequately recognise or address grass or bush fire risk assessment and hazard reduction across the entire project application area, including revegetation areas, other CHC land and adjacent lands, including OEH estate. In addition, the EA does not consider the Bushfire Risk Management Plans for the relevant RFS Zones.

The proponent needs to not only address the issue of indirect impacts with respect to existing OEH estate, but also address how these issues would impact upon those land parcels they are proposing for future addition to OEH estate.

**Recommendations**

That the Proponent:

- amend Figure 3.16 depicting the location of the proposed pipeline in relation to the Yarrobil NP;
- amend Figure 3.14 to indicate the location of the proposed underpass for access to Goodiman SCA and consider the suitability of the underpass for heavy plant and vehicles;
- include specific consideration of the likely indirect impacts of the proposal on OEH Estate, including noise, light spill, dust, and future fire management, and the likely level of mitigation expected to be achieved;
- consider the impacts of grass and bush fires and management strategies for the entire Project Application Area (PAA);
- demonstrate consideration of the RFS Bushfire Risk Management Plans for the relevant RFS Zones.

**ISSUE 2**

Adequacy of surveys for cryptic threatened flora species.

**Background**

OEH note the following regarding survey effort:

- The Proponent has undertaken a total of 108 person hours (two personnel for 54 hours) of targeted threatened flora searches over 11 days in 2011 from 17 to 21 October and 28 October to November 2, in addition to plot surveys (10 plots) and rapid assessments (14 plots) (Table 3.5, p. 28).
- Table 3.3 (p. 25) shows that the number of vegetation survey plots undertaken per stratification unit between 2009 and 2012 (including previous baseline surveys) was greater than that recommended under the DEC (2004) "Working Draft Threatened Species Survey and Assessment Guidelines" (45 c.f. 33) [note: the number of required plots for 1,231ha of Ironbark/Cypress woodlands should be cited as 12 and not 10].
- The latter survey guidelines also recommend 30 minutes of random meander surveys per plot undertaken in every stratification unit. Given the recommended number of plots, the recommended targeted survey effort would be only 16.5 hours.

However, OEH also note that the initial stratification units employed by the Proponent were very coarse, considering these five units were later delineated into 15 vegetation types (Table 4.2, p. 47). Considering the areas of each vegetation unit, the plot survey effort recommended by DEC (2004) would in fact be a minimum of 48 plots in total.

OEH retain concerns that threatened flora species may have been missed or under-estimated as a consequence of inherent autecological traits. OEH note that all four threatened flora species that were recorded in the Project area may be considered cryptic (in particular *T. linearis*). Moreover, several species that were not recorded but which are known to occur nearby (e.g. *Rulingia*

*procumbens* and *Philotheca ericifolia*), are all likely to respond positively to fire (and conversely may be absent from areas that have not been burnt for long periods). Therefore, the recent fire history of the Project area would influence the likelihood of detection of such species.

**Recommendation**

That the Proponent demonstrates consideration of the above comments regarding the cryptic and temporal nature of the occurrence of these species.

**ISSUE 3**

Adequacy of assessment and description of grassland areas.

**Background**

The Proponent has delineated two condition states for "Grasslands" in the Project Area, of which 967ha of "Native Pasture in low condition" and 1,866ha of "Improved Pasture /disturbed" will be removed as a result of the Project (Table 4.2, p. 47). The Proponent asserts that areas mapped as "Native pasture areas were not representative of vegetation communities that would have occurred prior to clearing ... and were not considered to be consistent with the definition of any derived native grassland listed under the TSC Act or the EPBC Act" (p. 54).

This assertion that no area of grassland represents a derived native grassland (DNG) EEC condition state is not supported by a detailed justification. OEH consider it unlikely that areas mapped as "Improved Pasture" would constitute DNG EEC; however, in the absence of a detailed assessment of "Native Pasture" areas, including the presentation and exhibition of survey data supporting such an assessment, OEH cannot yet exclude the possibility that areas of "Native Pasture" are not DNG EEC.

The Proponent provided OEH with a summary of plot data collected from grasslands. OEH reiterate that it would be beneficial for such data to be included in the publicly exhibited EA. OEH noted that cover-abundance data were not collected in the 10 plots undertaken in Grassland areas (only presence/absence data were collected); in addition, OEH noted that non-native species were stated to be dominant in the understorey in only one of these plots. The Biobanking Assessment Methodology (BBAM) defines low condition native grassland vegetation where there is a ground cover of less than 50% native species, or where the ground cover vegetation has been more than 90% cleared. Considering the data provided, OEH consider that areas of "Native Pasture", stated to be "dominated by Spear Grasses (*Austrostipa* spp.) and Three-awn Grass (*Aristida* spp.)" (p. 54). are highly unlikely to be in "low condition".

The Proponent states that "Grasslands occurred in the lower lying more fertile parts [of the Project Area]" (p. ES.5). Considering that historically grassy woodland vegetation types were preferentially cleared in order to exploit productive areas, OEH consider it likely that at least some areas of "Native Pasture" were once occupied by grassy woodlands. Considering the NPWS Box-Gum EEC identification guidelines, in order to conclude that areas of "Native Pasture" are not DNG EEC, the Proponent should demonstrate that such areas would not respond to assisted natural regeneration, and present evidence that such areas did not support grassy woodlands in the past.

Considering that "Native Pasture" areas were not considered in offset calculations (see below), an adequate and documented assessment of them is necessary to justify this.

**Recommendation**

That the Proponent provides a detailed justification for determining that grassland areas do not include DNG EECs.

## ISSUE 4

Water supply from Cudgegong River.

### Background

OEH is satisfied that the water supply arrangements from the Cudgegong River have been secured through appropriate channels and extraction of water from that system will have no net impact on environmental water holdings in the Macquarie River. However, the EA documents indicate that pumping from the river will be undertaken to reduce 'operational surplus' in the downstream reaches of the Cudgegong.

Operational surpluses provide an ecological service in regulated rivers by increasing variability and providing small freshes that are otherwise absent from regulated streams. Operational surpluses contribute to the long term average volume of water that is available to the environment under water sharing plan arrangements. OEH would appreciate the opportunity to discuss these issues with the Proponent and State Water to ensure access to water from the Cudgegong does not compromise environmental values of the lower Cudgegong River.

### Recommendation

That the Proponent:

- consider the above comments regarding the importance of operational surpluses to the environment; and
- consult with OEH with regard to this issue.

## ISSUE 5

Protection of instream habitat quality.

### Background

OEH notes the effort that has been made to reduce impacts on local watercourses at the mine site. However, the EA indicates that impacts may be expected to a number of groundwater dependent pools, despite avoidance efforts. While the EA indicates that these systems will recover over a 20-50 year timeframe after the mine closes, implementation of mitigation strategies for these pools during mining and following mine closure should be considered. The requirement for mitigation will also be influenced by the size and relative value of these pools. The assessment of aquatic ecology by Cardno notes the importance of these pools and streams as habitat for Eeltail Catfish; given the presence of this species, OEH recommends that mitigation strategies are investigated and that effort to ensure adequate buffer areas between creeks and areas of disturbance are established to protect these areas.

In addition OEH seeks further detail on the proposed level of treatment of waters that will be discharged to the creeks. While the EPA is the licensing authority, OEH has concerns over the level of treatment and alteration of flows in the interests of aquatic and riparian habitat protection along the creeks and downstream in the Talbragar River.

### Recommendation

That the Proponent:

- investigates mitigation strategies that protect and minimise impacts to groundwater dependent pools; and
- provide further detail on the level of treatment and alteration of flows into adjacent creeks and downstream.

### ISSUE 6

Investigation of the nature of mounds found in the Project area.

**Background**

Numerous large earthen mounds were found to occur in the Project area, and this was previously reported to OEH by the Proponent. OEH undertook a short site visit with the Proponent in January 2012 to investigate the nature of these mounds.

There are a number of possible explanations for their origin, which may span either natural or historical heritage. The Proponent states that a precautionary approach was adopted when considering the nature of these mounds in assuming "that they are old, unused Malleefowl mounds" (p. 94). Although the Proponent acknowledges alternative origins of these mounds (the "result of past clearing activities where mounds were built-up by piling and burning of tree stumps" (p. 94)), OEH consider that a proper assessment of the potential significance of them is warranted.

**Recommendation**

That the Proponent demonstrates the nature of these mounds has been appropriately investigated.

## BIODIVERSITY OFFSET STRATEGY (BOS)

[unless otherwise stated, citations in this section refer to Appendix C (BOS) in EA Appendix H]

### ISSUE 7

Location, ownership and future tenure of proposed offset areas.

**Background**

The proponent sites 5,667ha of CHC-owned land that has been identified as offset areas (p. 21). Figure 4.2 (p. 23) depicts these offset areas and Figure 4.1 (p. 23) depicts the location of all CHC-owned land. OEH note that "most areas identified as offsets are under CHC ownership" (p. 32). OEH also note that the proposed offset area in Figure 4.2 that abuts Cobbora SCA in the north-west is not depicted in Figure 4.1 as CHC-owned land. OEH seeks clarification of whether offset areas in Figure 4.2 constitute the total offset area of 5,667ha; and also, which areas are owned by CHC and can with confidence be designated as future offset areas.

OEH note that some of the CHC-owned land depicted in Figure 4.1 but not intended as offset areas may yet be suitable for reservation for the purpose of reserve design and management effectiveness; Moreover, Table 4.8 (p. 32) identifies 1,043ha of the total offset area as being high priority for addition to the OEH Estate.

The Proponent alludes to "procedures to be applied for the management of the offset properties ... [and] arrangements for conservation in perpetuity and rehabilitation works to be undertaken" under an offset management plan (p. 32). OEH emphasize that any offset areas that are acquired as OEH Estate would need to be accompanied by an appropriate level of management funding. OEH's position is that any contribution to general parks management funding, whether or not linked to a land transfer, would need to be paid as an upfront lump sum or paid by instalments. If paid by instalments this must be backed up by a suitable form of security such as a bank guarantee.

**Recommendation**

That the Proponent:

- clarify the location and ownership of proposed offset areas;
- acknowledge the need for management funds to accompany potential land transfers as offsets to OEH estate.

**ISSUE 8**

Offset design.

**Background**

The importance of the Project Area for both local and regional landscape connectivity is variously acknowledged by the Proponent e.g.:

> "a regional corridor extends from the north-eastern part of the study area along the eastern side through Cobbora SCA to Goonoo SCA to the north along the ridgelines to Lake Burrendong ... It is possible that the study area and its surrounds also represent a stepping stone and refuge area for species between the two large protected areas of Goonoo SCA to the west and Goulburn River NP to the east" (EA p. 75).

However the connectivity of on-site offset patches with other habitats is compromised by the Golden Highway in the north and the rail and road corridors in the south. Although existing roads already present potential movement barriers for fauna, the Project will exacerbate such barriers through the construction of mine infrastructure and additional clearing of easements (e.g. through Goodiman SCA, p. 120). A significant increase in the use of roads as a consequence of the Project will further reduce the effective connectivity of patches.

The Proponent states that offsets "will aim to improve the connectivity of conservation areas" (EA p. ES.12), and "will create or enhance vegetation corridors" (Statement of Commitments, Main Report, p. 495). Moreover, the Proponent asserts that "fauna fencing or mitigation structures (eg underpasses), as required, are to be installed during construction" (EA p. ES.11), and that specifically "a number of fauna movement structures have been incorporated into the design of the rail spur" (EA p. 120). However, the EA provides no detail with regard to the design, implementation and demonstrated efficacy of "mitigation structures".

OEH emphasize (and the Proponent appears to acknowledge) that such structures constitute mitigation measures and are not considered part of the overall offset package.

**Recommendation**

That the Proponent:

- provide further detail on how the Project will address barriers to fauna movement between offset areas and adjacent habitats; and
- provide evidence of the efficacy of "mitigation structures" for this purpose.

**ISSUE 9**

Consideration and calculation of species credits and resultant offset requirements.

**Background**

In order to inform offset requirements, the Proponent presented species credit calculations for species that are known to occur in the Project Area, namely: species credits required to be offset under BBAM for threatened species or their habitat that would be lost as a result of the Project (Table 3.1, p. 13); and given known or estimated offset values, the residual offset requirements yet to be achieved by the existing BOS (Table 4.6, p. 28, and Table 4.7, p. 31). OEH reviewed these calculations and provide a comparison of results in Tables 1 and 2, below.

OEH consider the Proponent's use of the Credit Converter for the conversion of outstanding credit requirements to areas of habitat to be inappropriate (p. 29, and Table 4.7, p. 31). The Credit Converter is a tool developed under the Biodiversity Certification Assessment Methodology (BCAM); as alluded to by the Proponent, Tier 3 Variation Criteria C of the OEH Offset Policy refers to the use of BBAM (and not BCAM) for the conversion of ecosystem credits into hectares. OEH have therefore updated residual offset requirements for species credits in Table 1 (below).

OEH note several discrepancies between required species credits; this has resulted from the Proponent rounding Tg values to two decimal places, which has led to slight underestimates of credits and resultant offset requirements (Table 1)). These discrepancies are carried over into the

Proponent's calculation of residual offset requirements (Table 2). Table 2 demonstrates that the residual offset requirements are considerable for four of the five species credit species.

OEH notes that several other species credit species were not considered in calculations of offset requirements. In Appendix A "Habitat Assessment Table for Threatened Species", the following species were noted as having either a moderate or high likelihood of occurrence or were recorded in the Project area: *P. ericifolia*, *Diuris tricolor*, *R. procumbens*, *P. queenslandica*, *Crinia sloanei*, *Hoplocephalus bitorquatus*, *Hamirostra melanosternon*, *Lophoictinia isura*, *Phascolarctos cinereus*, *Dasyurus maculatus*, *Petaurus norfolkensis*, *Miniopterus schreibersii oceanensis* and *Vespadelus troughtoni* (note, the latter two bat species are both ecosystem and species credit species for which habitat constraints would not preclude their consideration as species credit species within the Project area). All of these species will lose (at least) potential habitat as a result of the Project, and given a lack of live-trapping and the cryptic nature of many threatened flora species (see above), the Project area may actually represent occupied habitat. Additional survey effort over a longer time period may have led to detection of additional species.

Table 3.1 in Appendix H lists species that were targeted for survey. *R. procumbens P. queenslandica*, both species with a moderate likelihood of occurrence should also have been the target of species specific surveys.

**Recommendation**

That the Proponent:

- amend the calculations in the BOS for the five identified species credit species;
- provide adequate justification for not undertaking targeted surveys for *R. procumbens P. queenslandica*; and
- provide adequate justification for not considering targeted offsets for other species credit species with a moderate or high likelihood of occurrence in the Project Area.

**ISSUE 10**

Impacts to grassland areas are not considered under the BOS.

**Background**

As noted above (Issue 3), the EA does not provide adequate detail regarding the assessment of Native Pasture and impacts on them. As a consequence, OEH cannot fully assess the adequacy of offsets for all impacts. Indeed, the BOS proposes to exclude grasslands from offset considerations altogether; and in the interests of expediency, the Proponent excluded Native Pasture from the calculation of ecosystem credits (p. 16). However, OEH reiterate that the nature and significance of areas of Native Pasture are yet to be established, and thus their exclusion from offset considerations is not adequately justified.

The Proponent states that "species which were driving the ecosystem [credit] requirements for these areas were also represented within the Blue-leaved Ironbark and regrowth vegetation communities ... and were considered to be adequately represented [by them]" (p. 16). However, it is yet to be demonstrated that Native Pasture lacks biodiversity value in and of itself (and not simply as habitat).

**Recommendation**

That the Proponent:

- provide a detailed assessment of impacts on grasslands (see Issue 3); and
- include consideration of grasslands in the BOS, or provide adequate justification for not doing so.

**ISSUE 11**

The use of Tier 3 for non-red flag vegetation communities and some threatened species credits has not been adequately justified in the information supplied to date. This issue is particularly important given the level of impact predicted for known threatened species habitat.

**Background**

The EA states that the biodiversity offset package will strive to:

- Provide a minimum of 'like for like' for land-based offsets representing a 'no net loss' outcome for red flags and threatened species for which species credits have been identified (Tier 2 of the OEH Offset Policy);
- Provide a minimum of a negotiated 'mitigated net loss' outcome using the variation criteria within the OEH Offset Policy (Tier 3) for all other vegetation communities and threatened species; and
- Ensure a minimum of 80% of the offset requirements are land based.

At present, the proposed offset areas encompass 5667ha of CHC owned land. This includes approximately 1,758ha of land to be rehabilitated and 3,909ha of other mapped native vegetation communities. References to 'rehabilitation' in the Biodiversity Offset Strategy appear to relate to rehabilitation of 'native pasture' within the identified offset properties, rather than mine site rehabilitation. An additional 1,543ha of nearby lands are currently being investigated for potential addition to the offset package.

Based on the currently defined offset package, the proponent has met Tier 2 for six red flagged vegetation communities and three threatened species for which species credits have been required.

The full credit requirement has not been met for one red flagged vegetation community (Fuzzy Box Woodland EEC), two threatened species for which species credits have been required, and non-red flagged ecosystem credits generally.

*Threatened Species Credits*

Species credits are a type of biodiversity credit which cannot be reliably predicted on the basis of habitat/vegetation surrogates. The current offset proposed has not generated the full quantum of species credits for four threatened species (See also Issue 9 above and Tables 1 and 2 attached).

As conflicting information is presented, it is not clear whether the proponent intends to seek the outstanding species credits outside of those additional offset properties under consideration. The BOS first states: "If the potential and additional offset properties are not able to be used as offsets, properties outside the study area would be investigated to meet species credit requirements. The OEH Biobanking EOI register at the time of writing did not contain the species credits required" (p. 29).

In contrast the BOS also states that "If threatened species credits are not sufficient with the proposed additions to the offsets, the variation rules may need to be applied" (p.29) and "If land based offsets are not available, as is likely to be the case for species credits, indirect offsets will be required to ensure a net gain outcome for the project" (p. 31).

The BOS provides a theoretical application of the Tier 3 variation criteria (p. 29-31) to "gain an understanding of the potential for and the likely offset requirements, should this be required". We wish to highlight the following in relation to the application of the variation criteria for species credits:

- Under criteria b) of the OEH offset policy, the proponent concludes that they cannot convert species credits into alternative species credits with the same or greater conservation status, because their credit shortfall relates to endangered species and their excess credits relate to vulnerable species. This is correct in the case of the endangered *Zieria ingramii* and *Tylophora linearis* (where there is a shortfall of 9,037 credits and 720 credits respectively). However before accepting this result and moving to the next criteria, (or to indirect offset options), the proponent must demonstrate that they are unable to secure the required species credits, or alternative species credits for another suitable endangered species.
- On the assumption that no further matching or alternative species credits will be found, the proponent has converted the outstanding species credits to hectares (Table 4.7, p.31). This is

not a feature of the OEH Offset Policy. Please see additional comments under Issue 9 regarding the use of the BCAM Credit Converter.

*Ecosystem credits*

The BOS currently estimates an overall shortfall of 76,710 ecosystem credits, out of a total requirement of 124,091 ecosystem credits (ie red flag and non-red flag credits combined by vegetation formation).

The EA concludes that the proposal will impact the habitat of 51 threatened species. Of these, a significant impact has been predicted for 17 species. Only 4 of these 17 species have generated specific threatened species credits in the biobanking assessment. Habitat for the remaining 13 species is represented in the ecosystem credits generated (ie biodiversity credits which can be reliably predicted on the basis of habitat/ vegetation surrogates).

The following table summarises the results from the EA (derived from Table 6.2 of Appendix H) for those threatened species (not represented by specific species credits) where a significant impact is predicted:

| Species | TSC Act | EPBC Act | Recorded in Study Area | Impact description |
|---|---|---|---|---|
| Barking Owl | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Brown Treecreeper | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Diamond Firetail | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Glossy Black Cockatoo | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Grey-crowned Babbler | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Hooded Robin | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Little Pied Bat | V | | Yes | Removal of 1,800ha of foraging habitat and 16km of cliff line habitat. |
| Masked Owl | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Powerful Owl | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Southern Long-eared Bat | V | V | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Speckled Warbler | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Varied Sittella | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |
| Yellow-bellied Sheathtail Bat | V | | Yes | Removal of 1,800ha of foraging and breeding habitat. |

A shortfall in ecosystem credits means a likely shortfall in the offset as it relates to habitat for these threatened species. For example, considering all vegetation communities to be impacted (red-flags and non-red flags), the information presented by the proponent indicates that all of the ecosystem credits required for the development represent habitat for the Barking Owl. Considering the offset as currently proposed, the offset appears to be deficient by over 60,000 credits for these vegetation communities. Similarly, it would appear that ecosystem credits associated with Glossy Black Cockatoo habitat are deficient by over 70,000 credits. These are just two examples.

OEH's preference is to achieve an offset that is as close as practicably possible to the 'No Net Loss' standard as calculated through the BBAM. Adequate justification for providing a lower standard of offset is required under the OEH Offset Policy. This is particularly important in the case of developments such as this, where significant impacts on threatened species are predicted.

However, the intentions of the proponent are not clear in regards to meeting the outstanding ecosystem credit requirements. The EA first states "If the potential and additional offset properties are not able to be used as offsets, properties outside the study area would be investigated to meet ecosystem credit requirements". In contrast, the BOS also states (in relation to the Tier 3 variation criteria) "If ecosystem credits are not sufficient with the proposed additions to the offset, these may be applied".

The BOS then adopts a 3:1 offset to impact area ratio as the minimum offset the proponent will aim to provide for non-red flag vegetation communities. The EA notes that the additional properties currently under investigation have the potential to provide an offset of sufficient size to meet the 3:1 minimum, and states that "if additional properties identified are not available as offsets, additional properties outside the study area would be investigated to meet this minimum requirement" (ie the proposed 3:1 ratio) (p. 28).

Therefore the EA seems to present conflicting information regarding whether proponent intends to look beyond the additional properties which are currently under investigation, and if they do, whether they will only investigate additional offsets far as required to provide a 3:1 outcome.

Although its use has not yet been fully justified, a theoretical application of the Tier 3 variation criteria is supplied in the BOS. The proponent's assessment of the proposal against the variation criteria has not yet demonstrated the need to reduce the required offset for non-red flag ecosystem credits to a 3:1 hectare ratio.

The proponent does not provide information to indicate that it is not possible to source additional credits in matching vegetation communities (as per the BBAM report), in the first instance, nor matching vegetation formations within the bioregion. The BOS notes that 'The OEH Biobanking EOI register identifies properties with suitable vegetation types for the required offsets within the wider region" (p. 26). In the draft EA the proponent also noted that over 12,000ha of potential offsets had been identified (6,500ha mapped with the PAA, and a further 6,500ha outside the PAA which was not mapped). The total offset now being proposed (including additional properties under investigation) is approximately 7,200ha.

Furthermore, the proponent has not indicated whether real estate searches have been undertaken to identify other potentially suitable properties which are not listed on the OEH EOI register. No specific representations have been made to OEH regarding the reasonableness of the costs associated with providing the required quantum of credits, and the conversion of ecosystem credits to other regional conservation priorities has also not been discussed.

**Recommendation**

That the proponent be required to fully justify any reduction in the offset credit requirements:

- Considering the habitat requirements of all threatened species to be impacted by the proposal and
- Considering the requirements of the OEH offset policy.

**ISSUE 12**

Indirect offsets.

**Background**

OEH notes the Proponent's allusion to the use of indirect offsets to resolve residual offset requirements. OEH emphasize that every opportunity for direct land-based offsets should be exhausted before indirect offset measures are considered. OEH consider that investigating appropriate methods for seed collection and propagation (for example) are measures that contribute

to improving the mitigation of impacts (in the latter example, for mitigating against the loss of local genetic material).

**Recommendation**

That the Proponent:

- demonstrate that options for land-based offsets have been rigorously assessed and exhausted before indirect offsets are considered; and
- consult OEH on appropriate research actions for TSC Act listed threatened species.

**Table 1. Comparison of species credits and required offset calculations.**

(Differences between OEH calculated figures and those provided in the EA are in bold).

| Species | Impact | Impact Unit | Tg | Species Credits Required | | Offset Required |
|---|---|---|---|---|---|---|
| | | | | Using BBAM Eqn 13[1] | After EA App. C Table 3.1 | Using BBAM Eqn 14[2] |
| ***Zieria ingramii*** | 727 | individuals | 0.650 | 11,185 | 11,185 | 1,864 individuals |
| ***Tylophora linearis*** | 9 | individuals | 0.125 | **720** | **692** | 120 individuals |
| ***Homoranthus darwinioides*** | 227 | individuals | 0.675 | **3,363** | **3,338** | 560 individuals |
| ***Acacia ausfeldii*** | 200 | individuals | 0.125 | **16,000** | **15,385** | 2,667 individuals |
| ***Chalinolobus dwyeri*** (breeding) | 2 | ha | 0.125 | **160** | **154** | 27 ha |
| ***Chalinolobus dwyeri*** (foraging) | 1,400 | ha | 0.750 | 18,667 | 18,667 | 3,111 ha |
| ***Botaurus poiciloptilus*** | 9 | ha | 0.750 | 120 | 120 | 20ha |

[1] BBAM Equation 13: *species credits required = (habitat area or number of individuals lost / Tg) x 10.*

[2] BBAM Equation 14: species *credits generated at offset = current species habitat area or number of individuals at offset x proportional habitat gain x 10* (note, in absence of proportional habitat gain, default = 0.6); therefore *offset area or number of individuals required = species credits required / 6.*

**Table 2. Species credit offset requirements and estimated outcomes.**

(Outstanding or residual offset requirements are shown in bold).

| Species | Species Credit Offset Requirements | | Estimated Offset Outcomes[3] | | Residual Offset Requirements[4] | |
|---|---|---|---|---|---|---|
| | Species Credits Required[1] | Offset Required[2] | Species Credits | Offset | Species Credits Required | Offset Required |
| ***Zieria ingramii*** | 11,185 | 1,864 individuals | 2,148 | 358 individuals | **9,037** | **1,506 individuals** |
| ***Tylophora linearis*** | 720 | 120 individuals | 0 | 0 individuals | **720** | **120 individuals** |
| ***Homoranthus darwinioides*** | 3,363 | 560 individuals | 0 | 0 individuals | **3,363** | **560 individuals** |
| ***Acacia ausfeldii*** | 16,000 | 2,667 individuals | 330,000 | 55,000 individuals | - | - |
| ***Chalinolobus dwyeri*** (breeding) | 160 | 27 ha | 30 | 5ha | **130** | **22ha** |
| ***Chalinolobus dwyeri*** (foraging) | 18,667 | 3,111 ha | 19,200 | 3,200ha | - | - |
| ***Botaurus poiciloptilus*** | 120 | 20ha | 121 | 20ha | - | - |

[1] Using BBAM Equation 13.

[2] Using BBAM Equation 14.

[3] After Table 4.6 (EA App. C, p. 28).

[4] Note: "Credits required" in Table 4.6 have been adjusted according to Table 2 of this document; this affects required species credits, which differ from those shown in Table 4.7 (EA App. C, p. 31).