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Nature Conservation Saves for Tomorrow

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Mining and Industry Projects
NSW Department of Planning & Infrastructure
GPO Box 39
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Coalpac Invincible Colliery and Cullen Valley Mine Modifications Part 3A Modification 4 – Invincible Mine Extension (07_0127 MOD 4) and Part 3A Modification 2 – Cullen Valley Mine Extension (DA 200-5-2003 MOD 2)

1. BMCS' position

BMCS is strongly opposed to these modifications and rejects them in their entirety.

The original Coalpac Consolidation Proposal (CCP), of which the current modifications are part, was rejected by the Planning Assessment Commission Review Report, and by the Director-General's Report (NSW Department of Planning & Infrastructure – DP&I). It was also deemed a Controlled Action under the federal government's *EPBC Act.*

The Coalpac Modifications (C-Mods) are a component of the original CCP and contain all the elements (except the number of hectares impacted) which made the CCP so convincingly unacceptable.

In the Society's view, it is outrageous that the C-Mods have not been classified as a Controlled Action under the *EPBC Act*. Indeed, either the Federal Department of Energy (DoE) seemingly has no regard for its duties under the *EPBC Act*, or it has been mesmerized by the C-Mods' reduced size (compared with the CCP) and by the apparent invitation in the Director-General's Report[1].

The Society firmly contends that should the C-Mods be approved, it will make a mockery of the DP&I assessment processes. Let's just make the proposal smaller; it will be approved and nudge-nudge/wink-wink further small extensions will be granted should that become necessary. A total farce!

[1] *Director General's Assessment Report, Coalpac Consolidation Project (10_0176), 4th October 2013 https://majorprojects.affinitylive.com/public/d378f3a9a670ed3cc49f6c1e8c0a339d/1.%20Coalpac%20Consolidation%20Project_%20Director-General%27s%20Report_Summary.pdf.*
It suggests that the DP&I might be amenable to "…allowing a smaller extension that avoids the most sensitive parts of the site. This would enable some of the remaining coal resources to be extracted, the existing mining voids to be filled and appropriately rehabilitated, and a suitable final landform created that integrates with the surrounding landscape."

2. General comments and concerns

2.1 Coalpac's miscalculations

This C-Mods gambit is an attempt by Coalpac to rescue itself from the gross miscalculations related to its handling of the CCP.

The miscalculations involved Coalpac:

- initially presenting an inadequate Environmental Assessment which was returned to it by the Department of Planning for rectification – the amount of much-needed additional work resulted in a major delay before the revised documents were submitted;
- then using a new consulting group which was charged with subcontracting specialised consulting organizations to produce the voluminous documents which comprised the revised EA – Brisbane- and Singleton-based Hansen Bailey[2], with a history of zealously favouring the coal industry[3], adopted the costly saturation principle aimed at submerging government and non-government organizations in electronic paper;
- failing to appreciate the strength of the environmental and social opposition to the CCP and the role of the Minister in referring the decision (in what was termed a 'hands-off' process) to the NSW Planning Assessment Commission;
- failing to understand the amount of time needed for all the stages in the process of: (i) having the federal government decide whether or not the CCP constituted a controlled action (ref. no 2010-5776), (ii) the documents going on public exhibition and submissions being made by a vast number of organizations and state government departments, (iii) Coalpac (through its spectrum of consultants) responding to the various submissions and the time needed for the originators of the submissions to consider and reply to Coalpac's responses and any new material, (iv) the Planning Assessment Commission carrying out its investigations and public hearings as a prelude to completing its review, (v) submissions to the Department of Planning by all concerned (including Coalpac) in relation to the outcomes from the PAC Review, (vi) further submissions to Planning in relation to various modifications to its CCP by Coalpac, and (vii) awaiting the Director-General's report to the second stage of the PAC, the latter being charged with making a decision on the Minister's behalf;
- extracting its previously approved tonnage at too rapid a rate and attempting to use arguments that haste was needed because the existing mines were exhausting the approved coal resource and would need to shut down;
- persisting with this form of economic and social blackmail and then actually having to shut down, lose the associated revenue stream, and seemingly default on its rehabilitation commitments;
- in the face of a rejection of the proposal in the Director-General's report, opting to withdraw the CCP application rather than face absolute rejection by the second PAC; and then,
- entering voluntary administration so that it can effectively defer or avoid commitments while working towards a new proposal (C-Mods – the 'son of CCP') which will benefit a foreign-owned company (Energy Australia) to the detriment of the environment, resident's well-being, and ecotourism.

There is little doubt that this history of miscalculation, partly reflecting a belief that superficial economics will always trump the opposing environmental and social impacts, has brought Coalpac to its present somewhat desperate position of voluntary administration. But let's not rock the boat and notice that Coalpac miscalculated and blames everyone but itself for the protracted assessment of the CCP. Let's sugar-coat everything and disregard Coalpac's responsibility for failing to better manage its affairs. Hansen Bailey

[2] *http://www.hansenbailey.com.au/assets/pdfs/Hansen-Bailey-Company-Profile.pdf*
[3] *http://www.smh.com.au/environment/conservation/agency-for-massive-mine-muddies-independent-waters-20110624-1gjmc.html*

provides a prime euphemistic example[4]: *"Due to the delay in obtaining a major new planning approval for the long term continuation of mining, both mines have recently been placed on care and maintenance, placing pressure upon the Mount Piper Power Station which relies on the mines for a significant proportion of its competitively priced fuel supply requirements. Further to this, the unforseen objections to the continuation of both mining operations have reduced the ability to create an optimal free draining final landform in rehabilitating the existing disturbed areas."* What utter 'pap'! And by the way, as well as Centennial (the power station's principal supplier) not welcoming the opportunity to fill the minor loss of supply, we were so inconvenienced as to be unable to meet rehabilitation requirements.

The big question is whether government will squander the good will achieved through its rejection of the CCP, by capitulating to the poorly founded 'needs' of these local coal and power industries?

2.2 Inadequate antisocial public exhibition periods

Coalpac, the Administrators and the big creditors (ANZ and Energy Australia) have had months to evaluate the company's position and decide on the plan of action which resulted in the Referral (by Cumberland Ecology, 28 February 2014) to the federal DoE, and the Environmental Assessment (by Hansen Bailey, March 2014). DP&I treated the matter expeditiously and opened it for public exhibition over the period 4 – 28 April, 2014.

It seems standard practice for companies to take months to prepare documents which, in the sheer volume of electronic paper, take weeks for government to digest and check. Yet companies feel hard done by and castigate government for inefficiency. They have also created an apparent acceptance by government that a protracted exhibition period is an onerous imposition upon them. Such a view has little regard for the facts that: (i) most non-government organizations (NGOs), principally environmental and community-based groups, are run by volunteers with differing degrees of expertise, (ii) many claims made by companies and their consultants necessitate field-checking, and (iii) finding and organizing independent consultants to field-check and evaluate aspects of the proposed actions is extremely time-consuming and difficult within the allocated exhibition period. For the reasons itemised, the Society has called, and continues to call for longer more realistic exhibition periods. **But money talks and government listens, so NGOs continue to scramble to make submissions in the allocated periods.**

The Society has previously complained about exhibition periods over public holidays. In the case of the C-Mods, the exhibition period embraces two public holidays. The DP&I will be aware that with Easter and the Anzac Day holiday close to each other, many have elected to turn the period into a 10-day break. It may be argued that as volunteers and with many of us retired, this should not be a problem. Well strange as it may seem, we do have extended families (children, grandchildren, etc.) which work and see this period as an opportunity to visit. Furthermore, having independent consultants complete work, write reports and prepare hard copies is also impacted.

BMCS again calls for the DP&I to adopt longer and less antisocial exhibition periods[5] rather than bowing to the dictates of business.

2.3 The C-Mods should have been a Controlled Action

The one-stop shop bilateral agreement[6] between the NSW and Federal governments creates a single environmental assessment process which will supposedly satisfy the New South Wales and Federal requirements for environmental regulation. The agreement was signed on December 20, 2013 and is due to come into force by September 2014.

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[4] *Environmental Assessment for Coalpac Pty Limited (Administrators Appointed), March 2014, prepared by Hansen Bailey, Section 1.1, p1.*

[5] *Subsequent to writing this part of the submission, the submission date was amended to May 2, 2014 – no reason was given, but it is likely that the mutterings on the grapevine filtered through to the DP&I.*

[6] *http://www.environment.gov.au/minister/hunt/2013/mr20131220.html*

Although the bilateral agreement is not finalised, the Federal government's finding that the C-Mods are not a Controlled Action might conceivably influence the NSW government's assessment. The Society will therefore list its principal contentions below.

Contentions:

"BMCS is firmly of the view that this proposal should be a controlled action under the EPBC Act. The original Coalpac Consolidation Proposal was found to be a controlled action (ref. no 2010-5776); the latest modifications warrant being a controlled action based on their impacting significant portions of the same area.

BMCS contends that Coalpac's response to Referral document Section 5.1 (Do you THINK your proposed action is a controlled action?) should in all conscience be YES!

The Society therefore contends that Section 5.3 should be changed accordingly by placing an 'X' against:
Listed threatened species and communities (sections 18 and 18A)
A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)."

An abridged version of the submission to the DoE is in *Appendix A*. It attempts to show why the contentions are justified and provides an assessment pertinent to Section 3 of the present submission.

3. CCP versus C-Mods – is there a difference?

The Director General's Assessment Report indicated that the DP&I might be amenable to *"...allowing a smaller extension that avoids the most sensitive parts of the site. This would enable some of the remaining coal resources to be extracted, the existing mining voids to be filled and appropriately rehabilitated, and a suitable final landform created that integrates with the surrounding landscape"*[7].

To what extent do the C-Mods conform with this loophole touted by DP&I? To answer this, BMCS will firstly refer to the principal values on which the PAC Review Report (PACRR)[8] and the DP&I Director General's Assessment Report[9] (DGAR) rejected the CCP (Section 3.1), and then evaluate the C-Mods in terms of its impact on those values (Section 3.2).

3.1 CCP rejection – principal values and concerns

3.1.1 PAC Review Report (PACRR)

The PACRR p157 stated: *"... when the merits of the project are considered as a whole, the benefits of the project are substantially outweighed by the breadth and potential magnitude of the impacts. The Commission therefore recommends that the project should* ***not be approved****."*

This is elaborated upon in relation to impacts on the pagoda landforms and the biodiversity in PACRR Executive Summary piii (as abridged): *"Biodiversity impacts are divided into those affecting the pagoda landform and those affecting other aspects of the ecology of the project area…No mining induced damage should be permitted to these features. The Commission recommends that highwall mining in the vicinity of the pagodas be prohibited and that the minimum setback for mitigating blasting risk to the pagodas be increased significantly from the proposed 50m… a setback of 300m would provide 70-75% of the foraging area required and should be adopted as an absolute minimum."*

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[7] *Refer to p1 footnote 1*

[8] *The report will be identified as PACRR in this submission – the full report is at located on Planning's website at https://majorprojects.affinitylive.com/public/a7891537218338b99edc7515628f6485/11.%20Coalpac%20Consolidation%20Project_%20PAC%20Review%20Main%20Report.pdf*

[9] *Director General's Assessment Report, Coalpac Consolidation Project (10_0176), 4th October 2013*
https://majorprojects.affinitylive.com/public/d378f3a9a670ed3cc49f6c1e8c0a339d/1.%20Coalpac%20Consolidation%20Project_%20Director-General%27s%20Report_Summary.pdf.

Similarly, PACRR p77 recommendation 45 is that: *"…the pagodas and the associated escarpments be considered natural features of special significance and that they be fully protected from any mine-induced impacts."*

In relation to the extent of the destruction of Ben Bullen State Forest PACRR, Executive Summary, piii notes that: *"The project will clear 957.98ha of vegetation – mostly in Ben Bullen State Forest. There is sufficient doubt over the accuracy of the biodiversity assessment for there to be uncertainty about levels of impact, the significance of impacts and the suitability of proposed offsets. Edge effects, have not generally been factored into the impacts. Given the very fragmented nature of the project site this will mean that the real impact of the project on native vegetation will be much greater than the area to be directly impacted by clearing."*

"The project area contains numerous species listed under the State and Commonwealth threatened species legislation…the real value of the area from a biodiversity perspective is that it contains a wide diversity of vegetation associations and a very high species richness."

Concerns about the destruction of vegetation were exacerbated by doubts about the adequacy of the information provided by Coalpac's consultant. PACRR p93 recommendation 49 crystallises this: *"The Commission recommends that concerns about the adequacy of the flora assessment and identification of the vegetation associations present in the project area be resolved to the satisfaction of OEH* ***prior to approval of any extension to open-cut mining in the project area and prior to any assessment of adequacy or otherwise of the biodiversity offset package.****"*

The need for better baseline biodiversity data and concerns over the nature of the proposed biodiversity offsets were registered in PACRR p104, Recommendation 55: *"The Commission recommends that, until the baseline biodiversity characteristics of the site have been resolved to the satisfaction of OEH, assessment of the adequacy or otherwise of the revised offset package should not proceed. The Commission also recommends that particular attention be given in the assessment to the essential nature of the trade-off being proposed, i.e. it is a proposal designed to exchange a number of fragmented areas that generally require extensive rehabilitation work and are currently not considered suitable for reservation, for a single area of high quality habitat that adjoins other areas of high quality habitat and is already proposed for reservation."*

The Commission also addressed concerns it had with rehabilitation. In PACRR pp98 and 101, recommendations 53 and 54, it stipulated that: (i) rehabilitation cannot restore the current habitat and its ecological balance; and (ii) rehabilitation to mature woodland has yet to be proved in NSW; whilst in PACRR, Executive Summary, piii it noted that *"The Proponent has placed substantial emphasis on rehabilitation as a mitigation strategy for impacts on biodiversity. There is considerable uncertainty about the validity of the claims."*

The issue of cumulative impacts in relation to past, current and proposed open-cut and underground cumulative impacts in the context of other open-cut proposals was also considered. PACRR p97 recommendation 52 required that the cumulative impacts on the biodiversity values from the CCP, the proposed Pine Dale Stage 2 Extension, and other envisaged projects be considered before any assessment of the CCP was finalised.

3.1.2 Director General's Assessment Report (DGAR)

The DGAR p2 concluded that issues of air quality, noise, blasting, and water resources can be adequately managed and controlled through appropriate conditions. However, it conversely found that *"…the conservation values of the site as a whole are significant, and that the project (in its current form) would essentially destroy these values, and significantly compromise the conservation significance of surrounding areas. The Department considers these impacts to be unacceptable and cannot be mitigated."*

In the DGAR Initial Addendum[10] it is noted that (p9): *"…the majority of the site for the Coalpac Consolidation Project is fundamentally unsuitable for an open cut coal mining operation; from a use planning perspective, the highest and best use of the site should be for conservation purposes; the mitigation and rehabilitation measures proposed by Coalpac do not overcome the inherent incompatibility of open cut mining with preserving the significant conservation values of the site; and the environmental consequences of extracting*

[10] *https://majorprojects.affinitylive.com/public/b508bc887566a110f8140a9d94e982c9/3.%20Coalpac%20Consolidation%20Project_Director-General%27s%20Report_Initial%20Addendum%20Report.pdf*

the 86 million tonnes of coal from the site are proportionally much more significant than extracting the same volume of coal from a mine with a more conventional open cut design or from an underground mine."

This question of environmental values is further considered in the DGAR Final Addendum[11] where it is indicated that (pp3-4): *"…there has been considerable focus on the impacts on the pagoda rock formations and associated habitat in the assessment of the project. While the Department believes the pagodas on the site should be protected, it considers* ***that it is more appropriate to consider the conservation significance of the site as a whole.*** *ln this regard, the Department believes the conservation values of the site are significantly higher than the values of other sites in NSW where open cut mining is being proposed."*

"Overall, the Department believes that the project in its current form would essentially destroy the conservation value of the site, and significantly compromise the conservation significance of the surrounding areas."

"…the Department notes that the project involves 'contour strip' mining along the base of the area's relatively steep topography that is not typical of conventional or contemporary open cut mine plans in NSW. This would remove the vegetation from the base of the large pagoda rock formations on the site, ***and create a series of fragmented vegetation remnants or habitat islands that would have limited biodiversity value****."*

"…the Department's assessment in this case is based on the project's impacts on the conservation significance of the site as a whole, not solely its impacts on the pagoda rock formations. ln the Department's view, the site has ***unique characteristics*** *that make it largely unsuitable for large scale open cut mining proposals."*

3.1.3 Values/concerns summary

Based on the information in 3.1.1 and 3.1.2 above, it is clear that the PACRR and the DGAR were of a similar view in that **both of them**:

- appreciate the 'uniqueness' of the CCP site and its surrounds;
- recognise the importance of the pagodas and cliff lines, but go beyond this to acknowledge the conservation values of the entire CCP site and recognise that the impacts on these values could not sensibly be mitigated;
- emphasise the area's biodiversity in terms of the numerous listed species, the overall species' richness, and the diverse vegetation communities as a function of landform changes;
- have concerns about diminishing conservation values through fragmentation and destruction of habitat and the associated ecological communities; and,
- are unconvinced about the capacity to rehabilitate the site in terms of truly re-establishing its landforms, hydrologic regime and complex values.

The PACRR expressed additional concerns about the inadequacy of the flora assessment, the identification of vegetation communities, and the poor quality of the proposed offsets.

3.1.4 Ben Bullen Pagoda Land System (BBPLS)

The 'uniqueness' of the CCP site and its surrounds, as largely encompassed in item (c) dot-points1-3 above, is best expressed in terms of a 'land system' in which each of a limited set of land units comprises a tract of country showing a high degree of uniformity in landform, parent material, soil, climate, and vegetation[12]. The advantage of this approach is that the many environmental factors, such as topography, geology, pedology, climate and vegetation, are integrated to the extent that their interaction yields distinctive and mappable patterns. In essence, the pagodas and their lithology, scenic value and ecosystems, together with the overlying rock type and ecosystems of the plateau areas, and the underlying rock types and ecosystems of the slopes

[11] *https://majorprojects.affinitylive.com/public/63e017bb69a9f7b08b1111fe0a312575/2.%20Coalpac%20Consolidation%20Project_Director-General%27s%20Report_Final_Addendum.pdf*
[12] *http://vro.depi.vic.gov.au/dpi/vro/gbbregn.nsf/pages/gbb_landform_landsys*
http://www.publish.csiro.au/?act=view_file&file_id=LRS34.pdf

leading down to the valley floors can collectively comprise a 'land system' termed the Ben Bullen Pagoda Land System (BBPLS)[13].

The BBPLS has three well-defined land units which, from top downwards, are the *Cullen Plateau Unit*, *Ben Bullen Range Pagoda Unit*, and *Tablelands Grassy Woodland Complex Unit*. The details of these are available in the reference in footnote 13.

Cumberland Ecology attempted to discredit the scarcity of the BBPLS by presenting a map of what it termed the BBPLS and concluding that the mapping shows (p10-12, Fig. 3)[14] *"…the Permian geology co-occurs with Triassic sandstones and pagoda outcrops in many areas of the region, and confirms that it is far more widely spread than just in close proximity to the Project Boundary."* This implication was comprehensively rejected[15]. Indeed, as per Figure 1 on p8, **a simple glance at Cumberland Ecology's map affirms that the three land units are only juxtaposed in the vicinity of the CCP**.

Of the three units, the *Tablelands Grassy Woodland Complex Unit* is poorly reserved, so three points are made:

- The *Tablelands Grassy Woodland Complex* should and must be protected as it is poorly reserved in its own right and, at a more detailed scale, contains many poorly reserved vegetation mapping units[16].

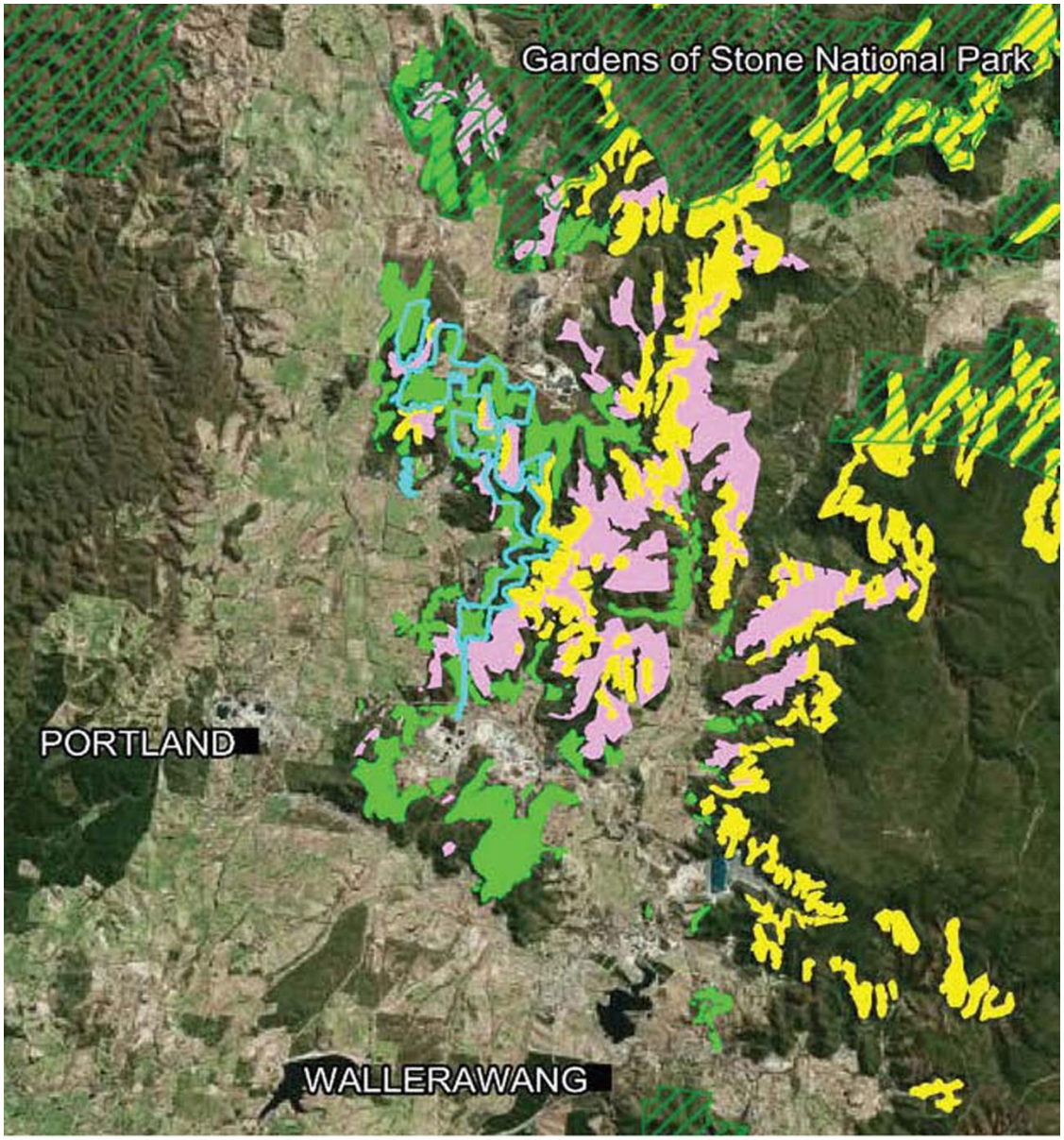
[Deliberately vacant]

[13] *https://majorprojects.affinitylive.com/public/66d22a9c94ef429ffcc0304b88c2ce6e/Coalpac%20Consolidation%20Project_Special%20Interest%20Submission%20on%20PAC%20Merit%20Review_Env%20NGOs.pdf*

[14] *https://majorprojects.affinitylive.com/public/06f5db0334cdebc6d53d6963c07656a1/Coalpac%20Response%20to%20PAC%20Review%20Submissions.pdf*

[15] *https://majorprojects.affinitylive.com/public/71bb8f1cd841a5126162f44fb6af9d94/Coalpac%20Consolidation%20Project_%20Part%201%20of%204%20Joint%20Response%20from%20BMCS%20and%20LEG%20on%20the%20Coalpac%20Response%20to%20the%20Further%20Submission.pdf*

[16] *https://www.colongwilderness.org.au/files/pages/Colong_PAC_reply_to_Commissioner.pdf - pp1-3*



Cumberland Ecology Mapping of the Ben Bullen Pagoda Land System in the Region

Legend

Contracted Project Disturbance Boundary

National Parks and Reserves

Ben Bullen Pagoda Land System (as described in joint submission)

Ben Bullen Range Pagoda Unit

Tablelands Grassy Woodland Complex Unit

Cullen Plateau Unit

Figure 1

- The *Tablelands Grassy Woodland Complex Unit* is an essential component of the BBPLS, of which little remains, so any loss of the *Tablelands Grassy Woodland Complex Unit* correspondingly compromises the BBPLS.
- Any destruction of the *Tablelands Grassy Woodland Complex Unit* and the 'unique' BBPLS is tantamount to environmental vandalism.

3.2 C-Mods – are they an improvement?

3.2.1 Reduced destruction of vegetation and its implications

It is noteworthy that the C-Mods are in accordance with a suggestion made in the DGAR Initial Addendum (p9)[17]: *"…it may be possible to obtain approval for a more modest extension involving limited mining to the east of the Invincible Colliery and to the west of the Castlereagh Highway. Such a proposal has some merit in that it would largely avoid the pagoda landform complex, enable the existing mining voids on the site to be appropriately filled and rehabilitated, and create a suitable final landform."* Clearly, Coalpac has acted on the suggestion from the DP&I, so despite the 'spin' placed on the C-Mods in the current proposal (p4 and Section 3 pp18-21)[18], the reality is very much a case of taking what was seemingly 'on offer'.

The relationships between the CCP boundaries and those of the new proposal envisaged in the C-Mods is shown in Fig. 2 p10.

The obvious difference in Fig. 2 is the reductions in areas of the proposed open cut and highwall mining. The numerical data (in ha) are not easily extracted from the various versions of the original CCP and the various changes to the CCP, so in Table 1 they are omitted unless of relevance. The C-Mods data are from the current proposal (footnote 18).

Table 1: Area comparisons in relation to Coalpac proposals

Coalpac's Proposals	**ha within the Project boundary**	**ha of vegetat -ion within Project boundary**	**ha of vegetat -ion cleared for o/c min -ing**	**ha affected by HW mining**	**ha of o/c min-ing in existing approval****	**ha of HW mining in existing approval**
CCP original	2484	1952	958 (835)*	-	-	-
CCP preferred	-	-	762	-	-	-
CCP final contracted project	-	-	665	-	-	-
C-Mod Invincible	-	-	88	86	152	56
C-Mod Cullen Valley	-	-	62	79	362	68
*Figure cited on p193 of Vol 1 of the March 2012 Environmental Assessment ** That is carried over from the previous approvals						

Compared with the original, preferred and contracted proposals, the C-Mods **directly** involve destruction of 150 ha of native forest and woodland. This is a reduction of 84% (82%)*, 80% and 77% respectively. This is numerically impressive, but if one assumes that **the existing open cut approvals will not go ahead should the current proposal be refused, the effective saving of native forest and woodland is (150 + 514) = 664 ha; this in fact is equivalent to the damage to habitat by the final contracted project.** The effective percentage reductions are therefore 30% (20%)*, 13% and 0%.

Is this the contracted project by stealth?

[17] *https://majorprojects.affinitylive.com/public/b508bc887566a110f8140a9d94e982c9/3.%20Coalpac%20Consolidation%20Project_Director-General%27s%20Report_Initial%20Addendum%20Report.pdf*

[18] *https://majorprojects.affinitylive.com/public/612898f35e606e5a132b824ffc10d20e/01.%20Cullen%20Valley%20MOD%202%20EA%20-%20Main%20Text.pdf*

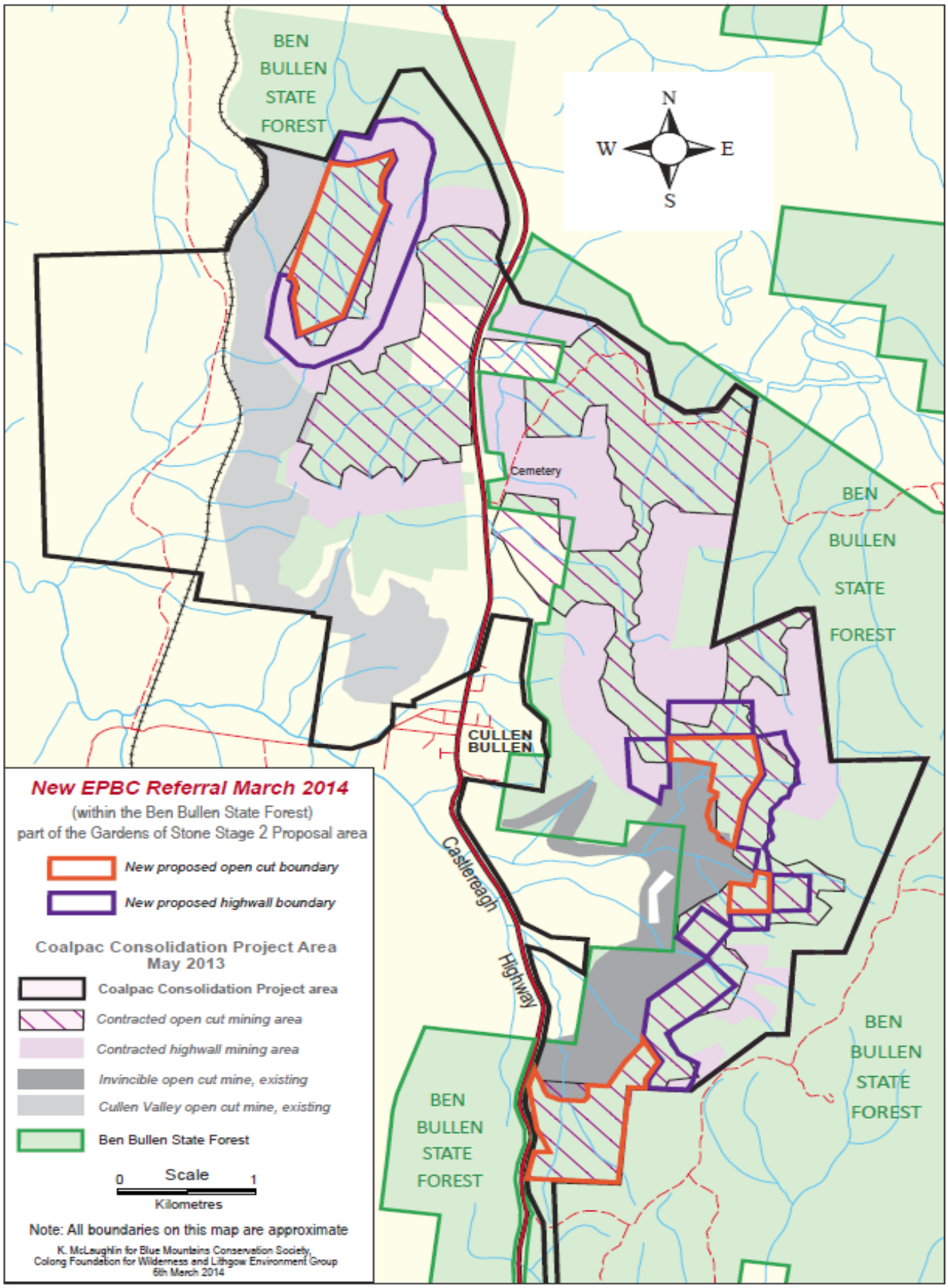

BEN
BULLEN
STATE
FOREST
N
W
E
S
Cemetery
BEN
BULLEN
STATE
FOREST
CULLEN
BULLEN
Castlereagh
Highway
BEN
BULLEN
STATE
FOREST
BEN
BULLEN
STATE
FOREST
New EPBC Referral March 2014
(within the Ben Bullen State Forest)
part of the Gardens of Stone Stage 2 Proposal area
New proposed open cut boundary
New proposed highwall boundary
Coalpac Consolidation Project Area
May 2013
Coalpac Consolidation Project area
Contracted open cut mining area
Contracted highwall mining area
Invincible open cut mine, existing
Cullen Valley open cut mine, existing
Ben Bullen State Forest
0
Scale
1
Kilometres
Note: All boundaries on this map are approximate
K. McLaughlin for Blue Mountains Conservation Society,
Colong Foundation for Wilderness and Lithgow Environment Group
6th March 2014

Figure 2

It is emphasised that, in terms of impacts on flora and fauna habitat, the analysis based on hectares of destroyed habitat neither takes edge effects, setbacks and stand-offs into account, and nor does it consider any impacts from highwall mining activities. To avoid repetition in relation to edge effects and the like, **reference should be made to *Appendix A*, Sections 4.1(a) and 4.2.**

A second and more substantial matter is related to fragmentation of habitat. Consideration of Figure 2 shows that the original contracted open-cut mining area describes a tract of country which, being of similar elevation and broadly following the strike of the coal-bearing stratigraphy, is likely to have similar habitat as may be assessed by examining March 2012 Environmental Assessment, Volume 1 Fig. 41 p185[19]. Clearly, the three discrete Invincible open-cuts and the Cullen Valley open cut along what was once the continuous contracted open cut must fragment the continuity of the uncleared habitat, and thereby destroy parts of the *Tablelands Grassy Woodland Complex Unit* of the unique BBPLS.

The above leads into the third and most substantial concern, that being the integrity of the BBPLS. The Society finds it totally inconceivable that the DP&I, having made a courageous decision by rejecting the CCP, largely based on the uniqueness of the BBPLS, is in any way contemplating destruction of parts of the *Tablelands Grassy Woodland Complex Unit,* this being the least reserved and most vulnerable unit within the BBPLS.

The case for preserving the integrity of the BBPLS is overwhelmingly based on the PACRR and DAGR findings in Section 2.4.1 (a) and (b), and the evaluation in Section 2.4.1 (c) and (d). As this was very much the main reason for rejecting the CCP, it should accordingly be the main reason for rejecting the C-Mods. In fact, the logic supporting such a rejection is so irrefutable that discussing other ecological aspects should be deemed unnecessary. Nevertheless, at the risk of becoming boring, I again cite from the DAGR initial Addendum (p6)[20]: *"…the Department is satisfied that the vast majority of the project site is properly characterised as a 'pagoda landform complex'. This landform comprises a complex arrangement of habitats characterised by a convoluted line of towering rock faces that give way to rocky steep slopes and these in turn give way to forested slopes and valley floors dominated by various eucalypt vegetation communities.* ***All components contribute to the overall significance of the pagoda landform complex, and any impacts to components of the landform complex have the potential to compromise the significance of the landform complex as a whole."***

I rest my case!

3.2.2 What does the future hold?

Should the modifications be approved despite strongly held beliefs (cited above), the mines will be re-opened, coal will be supplied to the power station (assuming that the power station has not reached a better agreement with Centennial in the interim), and Coalpac will probably be taken over by Energy Australia through a deal with the Administrator (or whatever). This then begs the following questions:

- Will Energy Australia (or Coalpac if still in the saddle) be satisfied with completing the rehabilitation and shutting the mines down, or will it in a few years' time be seeking further extensions with ultimate aim of linking the various open cuts and creating 'son of CCP'? Common sense says that having once had a successful outcome, it will not shy away from trying again. After all, **each open-cut nibble will create more need for rehabilitation until such time as the *Tablelands Grassy Woodland Complex Unit* is fully destroyed and the BBPLS is no more.**
- Will the Department of Planning & Environment (?) under a new minister and with a different Director-General be able to withstand the economic pressure to abandon its strongly held view about the uniqueness of the BBPLS and countenance even more desecration? Difficult to know, but the trend under the previous

[19] *This is obviously a generalization which should not be subjected to an undue level of detail.*
[20] *https://majorprojects.affinitylive.com/public/b508bc887566a110f8140a9d94e982c9/3.%20Coalpac%20Consolidation%20Project_Director-General%27s%20Report_Initial%20Addendum%20Report.pdf*

Premier and the Planning and Environment Ministers was to weight matters in favour of economic outcomes at the expense of environmental, social and heritage concerns. Even now the Draft Biodiversity Offsets policy weights the assessment processes strongly in favour of a proposal being approved; everything can be offset in one of the many ways outlined in the Draft. **The probable conclusion is that bureaucratic courage will be severely challenged, but will hopefully prevail!**

Obviously there are no simple answers, but the message to be learnt is that once a concession is made regarding a small part of a large proposal, it will be increasingly difficult to reject subsequent extensions.

4. A pictorial approach to environmental values

Few who have not been to the field will have much idea of the types of scenery and vegetation affected by the C-Mods, and the distance between the highwall boundaries and pagodas. As the main reasons for refusing the C-Mods are based on the unique character of the BBPLS and the scenic value and biodiversity of its lower and middle units (respectively the *Tablelands Grassy Woodland Complex Unit* and the *Ben Bullen Range Pagoda Unit*) it is important to overcome such deficiencies. This is the purpose of the maps and booklets referred to in Section 4, but they will also be of assistance to Section 5.

4.1 Photo-enhanced maps

These photo-enhanced maps are presented in ***Appendix B*** for the Cullen Valley and Invincible open cut and highwall mining areas. The Cullen Valley map is ***Appendix B(a)***, while the one for Invincible is ***Appendix B(b).*** It is again emphasised that all the areas shown are in the publicly-owned Ben Bullen State Forest.

Appendix B has been submitted as an e-file separate from the e-file for the main text of this submission.

4.1.1 Cullen Valley – *Appendix B(a)*

This should be considered in conjunction with Fig. 13 in the C-Mods proposal[21] and Figs. 3.1 and 3.2 in Appendix C of that proposal. The quality of the legend/map correlation is extremely poor in Fig. 13, to the extent of being indecipherable; it is a little better in Fig. 3.1. It is disturbing that such poor quality has been accepted by the DP&I. The Society is of the opinion that the DP&I should request replacements.

The matters of importance are:

- Photos 1, 2, 7-10 are of the *Tablelands Grassy Woodland Complex Unit* and variously classified by Cumberland Ecology (CuE) in its Fig. 3.1 as MU34 Tableland Slopes Brittle Gum – Broad-leaved Peppermint Grassy Forest (1, 2, 8-10), and MU 32 Tableland Scribbly Gum – Narrow-leaved Stringybark Shrubby Open Forest (7).

  Photos 7-10 are in the open-cut area. Approximately 470 *E. cannonii* (Vulnerable listing) will be destroyed by the open cut according to the C-Mods proposal Appendix C p3.22. [This aspect will be discussed more in Section 4.1.2 below].

- In ***Appendix D*** (pp33-34)**,** the existence of small linear developments of the Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland EEC are referred to. It is noted that the developments *"…are arguably present in the area proposed to be cleared for the* [Cullen Valley] *open-cut mine"*; also, that *"…investigation of the extent of this community in the area of the proposed mine is warranted using ground-truthing."* Furthermore, it is suggested that the potential direct loss of Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland should be highlighted and that any indirect effects of the open-cut mining proposal on this community where it occurs offsite should be considered.

- Photos 1 and 2 are in the highwall area. On CuE Fig. 3.1 the CEEC MU20 Capertee Rough-barked Apple - Red Gum - Yellow Box Grassy Woodland occurs in the highwall area to the west of photo 2, while

[21],

MU20a Capertee Rough-barked Apple – Red Gum – Yellow Box Woodland – non grassy is southwest of photo 1 in the open-cut area. The matter of 'Box-Gum Grassy Woodland' is referred to in ***Appendix A*** Section 4.3(a) p22 and receives further consideration in ***Appendix D*** pp31-32, where it is suggested that even if the 'Blakely's Red Gum' community *"…is most sensibly considered Tableland Grassy Forest, this would not preclude the possibility that the Red Gum-dominated subunit can be treated as 'Box-Gum Grassy Woodland'.*

- It is noteworthy that: *P. marginata* occurs throughout the northern third of this area scheduled for open cut and highwall mining (see ***Appendix A*** pp22-23). In ***Appendix D*** pp35-36 Dr Douglas states: *"…greater regard should now be given to the conservation status of this species, and what measures might be undertaken if this substantial area of known habitat is destroyed by mining…To the best of my knowledge, there is not currently a reliable means of translocating P. marginata or reintroducing it into a reconstructed habitat after mining…this species is genuinely under-conserved and…warrants reservation of as much of its habitat as is feasible…the plant is more abundant than has been previously estimated, but whilst more occurrences have been found, population size remains small, and threat levels, including from mining, remain high and may be escalating."*
- Photos 3-6 are of the *Ben Bullen Range Pagoda Unit* within CuE Fig. 3.1 terms MU30 Exposed Blue Mountains Sydney Peppermint - Silvertop Ash Shrubby Woodland.

  The principal matter here is that the highwall mining entirely undercuts excellent examples of pagodas. This is to be avoided as it potentially dries out and degrades the moist forests on the slopes located below the escarpments, and impacts cliffs, pagodas and Aboriginal heritage at risk of being damaged through subsidence during and following such coal mining. The latter was extensively addressed in a previous submission by BMCS regarding highwall extraction under the CCP proposal[22]. The pertinent section is included as ***Appendix E.***

4.1.2 Invincible – *Appendix B(b)*

As with ***Appendix B(b)***, this should be considered in conjunction with Figs. 3.1 and 3.2 in Appendix C of the C-Mods proposal (see footnote 21).

The matters of importance are:

- Photos 1-3 are in the *Ben Bullen Range Pagoda Unit*. Photo 1 is at the north-western point of the highwall area. The pagodas here form part of a north-trending ridge which is best seen on the C-Mods proposal (footnote 21) Figure 18 p96. The highwall mining here will definitely undercut the pagodas and the associated ridge.

  On Figure 18, a north-trending pagoda-bearing ridge bisects the northernmost highwall area; this is photo 2. Pagodas may also be seen in photo 3, despite there being nothing obvious in the equivalent position on Figure 18. This effectively shows that the stand-off distance for the pagodas has not been adequately ground-truthed. Pagodas are also present (based on Fig. 18) at the southeast corner of the southernmost highwall area. Highwall mining was supposed not to impact on any pagodas!
- Photos 4-7 and 12-14 are in the proposed open cuts and are part of the *Tablelands Grassy Woodland Complex Unit.* The open-cut areas are variously classified by CuE in its Fig. 3.1 as MU13 Tableland Gully Ribbon Gum Blackwood Applebox Forest in a 'sea' of MU30 Exposed Blue Mountains Sydney Peppermint – Silvertop Ash Shrubby Woodland, and an area below photo 6 of MU34 Tableland Slopes Brittle Gum – Broad-leaved Peppermint Grassy Forest. Photos 6 and 7 are hosted by MU13 Tableland Gulley Ribbon Gum Blackwood Applebox Forest.

  In the southern open cut, Appendix C Figure 3.1 shows a thin NNE-trending strip of non-listed MU35 DNG Tableland Gully Mountain Gum Broad-leaved Peppermint Grassy Forest Derived Native Grassland. In contrast, the C-Mods proposal document (footnote 21) Figure 13 p59 shows this as MU20 Capertee Rough barked Apple - Red Gum - Yellow Box Grassy Woodland EEC. This change, which results from

[22] *https://majorprojects.affinitylive.com/public/12f80aafdd2513dbc9723277fe07f640/Coalpac%20Consolidation%20Project_%20Blue%20Mountain%20Conservation%20Society%201%20of%206.pdf*

a reassessment by CuE, was considered in ***Appendix A*** Section 4.3(a). The Society's consultant was unable to visit this location due to the limited time available before the submission date.

- Photos 8-11 also belong to the *Tablelands Grassy Woodland Complex Unit* but are in the highwall areas. The vegetation units are mapped by CuE (Fig. 3.1) as minor patches of MU32 Tableland Scribbly Gum – Narrow-leaved Stringybark Shrubby Open Forest on higher spurs, a predominance of MU30 Exposed Blue Mountains Sydney Peppermint – Silvertop Ash Shrubby Woodland, MU37 Cox's Permian Red Stringybark - Brittle Gum Woodland in the northwestern area, and MU34 Tableland Slopes Brittle Gum – Broad-leaved Peppermint Grassy Forest with riparian MU35 Tableland Gully Mountain Gum - Broad-leaved Peppermint Grassy Forest towards the southern end.

  Appendix D p32 suggests that MU35 is rated by OEH as having most remnants in a 'moderately disturbed' condition, and only a very small percentage as being in the 'low disturbance' condition. OEH's information indicates that MU35, whilst much generally more abundant than MU20, warrants recognition as vulnerable. OEH is clear that this vegetation should be conserved, irrespective of its current lack of any clear TSC/EPBC legal status.

- *E. cannonii* is listed as Vulnerable under the TSC Act, and also has a Rare or Threatened Plant (ROTAP)[23] listing as 2Vci (C-Mods proposal Appendix C[24] pp3.21-3.22). Some 4,500 individuals are predicted (by CuE) to be within the C-Mods combined open-cut and highwall proposals and approximately 2,300 of these would be removed by the C-Mods combined open-cut proposals; approximately 1830 individuals are supposedly in the three Invincible open cuts, so the combined highwall areas must account for 2200 Clearly this is a problem for at least the top and bottom open cuts based on the distribution of *E. cannonii* in Appendix C Fig. 3.2.

- *E. aggregata* (Black Gum) primarily occurs in the Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland community which is noted in Section 4.1.1 dot-point 3. C-Mods proposal Appendix C pp3.28-3.29 indicate that this eucalypt grows in the lowest parts of the landscape on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and that approximately 20 trees were recorded within a cleared valley floor pasture at the location on Appendix C Fig. 3.2.

  In ***Appendix D*** p34 it states: *"The species is at or near the northern limit of its distribution in this area, and is threatened by further clearing, fragmentation, weeds, direct and indirect effects of mining, grazing that prevents recruitment, altered hydrology, genetic 'swamping' from proximate species, and by climate change."* Dr Douglas concludes in the ***Appendix D*** Executive Summary (p27): *"The occurrence of Black Gum in the region (esp. Wallerawang) may merit listing as an Endangered Population and is of sufficient significance to warrant consideration in relation to the Critical Habitat provisions of the TSC Act."*

  There would have been a significant possibility of *E. aggregata* being found in and downslope from the open cuts in both the Cullen Valley and Invincible Modification areas; this still applies to the Cullen Valley site, but at Invincible, downslope is represented by the existing Invincible open cut.

4.2 Photo-booklets

The two photo-booklets are produced separately as hard copies or sequentially for electronic transmission. They collectively comprise ***Appendix C. Appendix C(a)*** is for the Cullen Valley Modifications and ***Appendix C(b)*** deals with the Invincible Modifications.

Appendix C is submitted as an e-file separate from the e-file of the main text.

These are booklets of large photographs. The photo-booklets are an attempt to convey some of the ecological values impacted by the Coalpac Modifications proposed for the Cullen Valley and Invincible coal mines near Cullen Bullen at the foot of the western escarpment of the Blue Mountains. One covers the proposed Cullen

*23 The significance of ROTAP species and their listing is emphasised in the Report by Dr Douglas in **Appendix D** pp12-14.*
24 Please note that 'Appendix' when not in bold italics refers to C-Mods Proposal appendices; bold italics signifies appendices to the BMCS submission.

Valley Modifications, the other deals with Modifications at Invincible; each has a map of the proposal at the beginning.

There is less focus on the MU (mapping unit) vegetation classifications encountered in Section 4.1. But there is a stronger focus on the current appearance of the open-cut, highwall and pagoda areas, and what might be seen after they have been impacted and now rehabilitated.

The proposed Modifications involve more open cut and highwall mining in the publicly-owned Ben Bullen State Forest. The Cullen Valley proposal is for one open cut with highwall mining on three sides and bounded to the west by the existing Cullen Valley mine. The Invincible proposal is more fragmented. It comprises three open cuts separated and partly bound by eight sections of highwall mining, and abutted on the western side by the existing Invincible workings.

Each of the booklets has four subsections: one covers native forest in the proposed open cut areas, the second shows native forest in the highwall areas, the third features pagoda landscapes potentially impacted by highwall mining, and the fourth focuses on existing rehabilitation. Open cuts totally destroy native forest and all associated habitat. Examples of rehabilitation are given because the company claims to mitigate its actions by rehabilitating the areas of destroyed landform and native forest. But a cosmetic veneer will never replicate what has been trashed!

It is intensely disturbing that the Modifications will partly destroy and otherwise impact the area recognized by the Department of Planning & Infrastructure (DP&I) and also a Planning Assessment Commission Review Report (PACRR) as having a unique landscape (termed the Ben Bullen Pagoda Land System - BBPLS) and significant levels of biodiversity.

The PACRR recommended that[25] *"…the pagodas and the associated escarpments be considered natural features of special significance and that they be fully protected from any mine-induced impacts."*

The DP&I noted[26]: *"…the project site is properly characterised as a 'pagoda landform complex'. This landform comprises a complex arrangement of habitats characterised by a convoluted line of towering rock faces that give way to rocky steep slopes and these in turn give way to forested slopes and valley floors dominated by various eucalypt vegetation communities. All components contribute to the overall significance of the pagoda landform complex, and any impacts to components of the landform complex have the potential to compromise the significance of the landform complex as a whole."*

The photos in the open cut and much of the highwall areas are within the slopes and valley part (*Tablelands Grassy Woodland Complex Unit*) of the BBPLS, whereas those featuring pagodas and cliff-lines are within the *Ben Bullen Range Pagoda Unit*. The photos aim to show the general nature of the native forest and the scenic value of the pagodas. Although some photos may have a general title or a species may be named, formal identification of every aspect is not intended and would require more detailed fieldwork.

Some noteworthy features in the booklets are:

- The character of the *Tablelands Grassy Woodland Complex Unit* in the open cuts and parts of the highwall areas – the understorey varies from grassy to sparsely shrubby with interspersed leaf, twig and bark litter and exposed soil areas – the understorey is the 'larder' for foraging species which retreat to the pagodas and cliff-lines for overnight protection and breeding purposes.
- The relationships of pagodas and cliff-lines to the highwall boundaries – in the Cullen Valley area there is clearly no setback distance (it should be 300 m as recommended by PACRR) – in the Invincible area there is still some encroachment of 'highwalling' in places but it is far less blatant – this undermining of pagodas and cliff-lines is unacceptable.

[25] *https://majorprojects.affinitylive.com/public/a7891537218338b99edc7515628f6485/11.%20Coalpac%20Consolidation%20Project_%20PAC%20Review%20Main%20Report.pdf*
[26] *https://majorprojects.affinitylive.com/public/b508bc887566a110f8140a9d94e982c9/3.%20Coalpac%20Consolidation%20Project_Director-General%27s%20Report_Initial%20Addendum%20Report.pdf*

- Take time to compare the natural botanical beauty of the native forest showing divers bark colours and patterns with the scenic beauty and rugged geomorphology of the pagodas and cliff-lines of the *Ben Bullen Range Pagoda Unit.*

- Let your eyes, hearts and minds see the outcomes of rehabilitation after native forest and the geological substrate is trashed by open-cut mining – the cosmetic veneer has little diversity as the plantings follow a linear pattern, an understorey is lacking, and the fauna species have left the neighbourhood – it might look more like forest (but a different forest) in 50 to 100 years' time!

5. Specific concerns

These will not necessarily be dealt with extensively because many aspects have been covered in responses to the original CCP, in submissions to the PAC and in responses to the PACRR, and in other submissions made to the DP&I regarding various modifications to the CCP. These documents will not be referenced here because they are all on the DP&I major projects register under Coalpac.

The Society notes that the majority of the consultants' reports presented in support of the Modifications proposed for the Cullen Valley and Invincible Mines were those developed for the CCP. In fact very little new work has been done beyond Hansen Bailey putting together the C-Mods proposal. For example, most of the ecological work was done in 2011, with a few extra bits in 2013, and very little of it in terms of the quadrats actually took place in the C-Mods areas. Likewise, the same claims are being made in relation to economic benefits, the needs of Energy Australia and electricity prices; these were assessed by the DP&I in determining that the environmental values outweighed them.

Obviously it is not unreasonable to use the CCP data as much as is practicable, but it should be appreciated that much of the data has been questioned in numerous submissions by government departments and NGOs, before it was rejected in the PACRR and then in the DGAR and its Addenda. Nothing has changed other than the size of the proposal. The Environmental Assessment is still failing to protect the pagodas and the BBPSL, is continuing to promote ineffectual approaches to stand-offs, setbacks and edge effects, has failed to have an independent organization evaluate many of the 'claims', and regrettably remains intent on destroying the amenity of local residents.

5.1 Other flora and fauna

5.1.1 Vegetation communities and flora

These have been addressed in ***Appendix A*** Section 4 pp21-25 (particularly Sections 4.1 and 4.3), and then they have been evaluated in ***Appendix D*** pp33-40.

Appendix A shows that Coalpac, as advised by Hansen Bailey and Cumberland Ecology (CuE), has minimised the significance of the C-Mods to flora and fauna. **The Society expressed extreme concern about such seemingly unjustified claims being made in a formal document to the Department of the Environment.** This process of minimisation and disregard of reality continues into the C-Mods proposal document[27] and in the Appendix C to that document.

Thus, in C-Mods Section 6.6.3 p65, having recognised that *"…the Capertee Rough-barked Apple Red Gum Yellow Box Grassy Woodland and Derived Native Grasslands represents a form of White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box Gum Woodland), which is listed as an Endangered Ecological Community (EEC) under the TSC Act and a Critically Endangered Ecological Community (CEEC) under the EPBC Act"* **it is emphasised that the community only exists in the highwall areas and will not be subject to any direct or indirect impacts. This is wrong on two accounts:** (i) CuE's own mapping places the community in the southernmost Invincible open cut (C-Mods Appendix C Fig. 3.1 – despite this being controversial and re-assessed in Appendix C p4.1) and ***Appendix D*** presenting a different

[27] *https://majorprojects.affinitylive.com/public/612898f35e606e5a132b824ffc10d20e/01.%20Cullen%20Valley%20MOD%202%20EA%20-%20Main%20Text.pdf*

opinion about the community's presence in the Cullen Valley open cut; and (ii) there is every possibility that highwall mining will affect the hydrologic regime and therefore induce an indirect impact.

Again, C-Mods Appendix C p2.14 states: *"Cumberland Ecology is satisfied that the conservation significance of the flora, condition and viability of vegetation communities and likely impacts of the Modifications on native vegetation has been satisfactorily assessed."* And on p2.15: *"…the fauna surveys of the study area were comprehensive enough to record the majority of the vertebrate species that occur in the study area, and to allow the suitability of the habitat within the study area for fauna species to be adequately assessed."* This all sounds good, but fails to deal with the large numbers of *P. marginata* missed in the Cullen Valley open cut, the failure to resolve the issue of 'Box Gum Woodland', the failure to address the possible presence of the Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland EEC in the Cullen Valley proposal (See ***Appendix D***), and the effective disregard of impacts on fauna and flora from edge effects around the open cuts.

With the above in mind, some of the species merit further comment.

Persoonia marginata – Appendix A Fig.1 shows the distribution mapped by LEG (Chris Jonkers). Additional occurrences have been recorded in the Cullen Valley open cut subsequent to producing the map. It is likely that the LEG submission will have an updated map. Regardless, failing to find this number of a species when they are an extension of a population (mapped by CuE) in the highwall area is at best incompetent!

Thesium australe – Appendix A and D have covered much about this species. It is a small, cryptic plant listed under both the TSC and EPBC Acts. It has now been recorded in the nearby Neubeck Creek open-cut proposal. This greatly increases the likelihood of it being present within the areas of the C-Mods proposals and requires that this **potential habitat be treated as actual habitat**.

Bursaria spinosa ssp. Lasiophylla (critical habitat for ***Paralucia spinifera*** the Bathurst Copper Butterfly) – ***Appendix A*** provides some comment as several populations of this species exist in the Invincible and Cullen Valley mine regions. This plant is critical to the Butterfly which has a vulnerable listing. However, an ant species serves the same function as the Butterfly – this has enabled the consultants to downplay the possible existence of the Butterfly in the area.

Eucalyptus pulverulenta (Silver-leaved Mountain Gum) – listed as Vulnerable under the EPBC Act and TSC Act, grows in shallow soils as an understorey plant in open forest, and has been recorded a few km away. Habitat comprises the Exposed Blue Mountains Sydney Peppermint, Silvertop Ash Shrubby Woodland and Tableland Scribbly Gum Narrow-leaved Stringybark Shrubby Open Forest vegetation communities. A substantial amount of these exist in the C-Mods areas. Repeated targeted surveys failed to locate the species. This is rather surprising.

Prasophyllum sp. Wybong – Appendix A p24 provides information on this orchid – as with many orchids, *Prasophyllum* is difficult to find unless in flower. It is classified as CE and has a moderate likelihood of being present in the areas of habitat to be destroyed by the C-Mods. Habitat clearance linked to mining is a major threat, yet little seems to have been done to check whether it is present.

ROTAP species – CuE seems to be strongly of the view that if something is not listed then it can be disregarded – this may be the case from a Federal viewpoint, but it is wrong to ignore ROTAP species. ***Appendix D*** Executive Summary makes the following statement: *"Unless competently assessed and found otherwise, ROTAPs that are not currently listed as threatened under the Acts should be treated as environmentally important and, in accordance with the precautionary principle, as potentially threatened. Their Rare and/or Poorly Known status is indicative that they may be at risk: most have simply not been further assessed. They should* ***not*** *be disregarded in the impact assessment of open cut mining".* **The DP&I must ensure that ROTAPs are properly assessed**

Targeted surveys – these were conducted for a range of threatened plants with potential to occur within the C-Mods boundaries (C-Mods Appendix C p2.4). In most cases the species were not found, but in this context the Society has lingering concerns about the implementation of the surveys.

5.1.2 Fauna

Aspects of threatened fauna are considered in ***Appendix A*** Section 4.

Threatened fauna consist of the endangered Regent Honeyeater, Swift Parrot and Spotted-tailed Quoll, and the vulnerable Broad-headed Snake, Large-eared Pied Bat, Grey-headed Flying-fox and the Bathurst Copper Butterfly; the latter is dealt with in relation to *Bursaria spinosa* above. Numerous other threatened fauna species either likely to occur or with potential to occur are discussed in the C-Mods Appendix C Section 3.5.2 pp3.34-3.48. The assessment relative to the C-Mods is that no threatened fauna species have been recorded within the C-Mod areas, although some are likely to occur or have the potential to occur.

The Society is of the view that the level of impact on fauna species has been dismissed too lightly (see ***Appendix A*** pp21-22).

5.2 Air quality, noise, health

The Society is firmly opposed to the levels of noise, air quality reduction, and impacts on health which will be **re-imposed** on the citizens of Cullen Bullen should the C-Mods proposals be approved. The facts are that mining stopped in late 2013 and residents have had the opportunity to experience the improved amenity.

The usual expert consultants have been used to produce assessments of impacts. Unsurprisingly, the work shows that the residents' quality of life will not be impacted because the bureaucratically determined criteria will not be exceeded. The Society has on many occasions pointed out that the various criteria are determined by government in discussion with companies and consultants, and looked at in the context of overseas practice. Unfortunately, the people who are the 'beneficiaries' of the impacts are rarely listened to; perhaps because the difficult ones are bought out, or will lose their jobs, or are poorly organized relative to the companies. And perhaps because people differ in their responses to these impacts as a function of individual health (or lack of it!), perception of noise irritants, and varying responses to particulates as a function of genetic make-up.

The Society also notes that, in the case of the CCP, many of these factors were deemed manageable! Yet the questions remain: would you want your grandchildren to go to school in Cullen Bullen? Would you want to live in Cullen Bullen if the mining starts up again and continues for up to 7 years (but longer if additional extensions are granted)? Do you believe that there are totally safe levels of fine dust ($PM_{2.5}$) and is it cumulative? Finally, who decided that an **average** PM_{10} of 10.5 µg/m3 is non-injurious and that anything less than an **average** of 30 µg/m3 is safe? NSW Health was unimpressed and suggested that there are no such things as safe levels of ingestion of fine particulates – presumably 'dust' is unable to determine when it is 'average'!

5.3 'Highwalling'

Refer to the C-Mods proposal Sections 6.7.3 and 6.7.4.

The previous work by the first consultant, the second consultant doing the peer review and the third consultant giving an expert overview has been trotted out to provide assurances that an FoS of 1.3 is satisfactorily conservative; and this will ensure that surface subsidence does not exceed 20 mm.

The Society addressed these matters in previous submissions and pointed out that: rock mass has heterogeneous mechanical properties, rocks at surface (e.g., as parts of cliffs and pagodas) have tilting and tumbling instabilities which can be triggered by even small degrees of subsidence, and mining engineers see the types of failure which induce small collapses as being manageable by adjusting their parameters. In other words, there shouldn't be any problems, and if minor ones arise and **do not delay production**, then everything is 'sweet'!

Preservation of pagodas and cliff-lines involves a different set of parameters from those attuned to maintaining production! Approving 'highwalling' under pagodas and cliff-lines will inevitably result in minor rock falls – and when this happens, what remediation will be possible? Out with the epoxy resin and stick it all back together? I think not!

5.6 Mitigation, Rehabilitation and Offsets

Mitigation of an impact relies on various commitments to monitor things and take actions if needed (typically under various management plans), or to implement progressive trials to see at which stage damage eventuates. Both options (and the various shades of these options) are forms of 'trial and error'/'suck it and see'. The

engineer sees this as practical problem solving, others might class it as adaptive management, but BMCS sees it as the environment incurring the risks and suffering various impacts, while the company sees it in terms of maximising production.

Rehabilitation is put forward on the basis that it mitigates the destruction of natural landforms and the habitat embodied in native forests. BMCS has previously discussed rehabilitation in submissions about the CCP.

The brief story is that:

- An open cut coal mine is a hole in the ground from which coal seams and much interlayered sandstone, siltstone and shale have been removed – the coal is taken for processing and the 'rubbish' (or mulloch) is stockpiled.
- When the time comes to rehabilitate the land, the disordered (jumbled) rock and soil are returned to the hole (make-up fill may be needed to compensate for extracted coal) and machine tamped.
- The fill is then contoured to a 'suitable' shape, covered with a clay cap, and then topsoil.
- Once the moulded landform has settled, native species are planted and tended over many years (in theory).

Four things will never be re-created: (i) the rock layering and structure which was once there; (ii) the gradational relationships from rock, through weathered rock into a soil cover; (iii) the hydrologic regime of groundwater and surface water and their inter-relationships; and (iv) the original native forest and its evolved habitats.

The bottom line is that rehabilitation is a fancy term for cosmetically and superficially improving a trashed volume of rock and soil; it is an improvement over doing nothing! But rehabilitation of superficial damage must never be grounds for approving the creation of more damage.

Biodiversity offsets (see ***Appendix A*** Section 5.3) are a necessary outcome when approval is given to create adverse environmental outcomes. The Federal Policy is that measures aimed at providing environmental offsets, compensation or off-site benefits CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act.

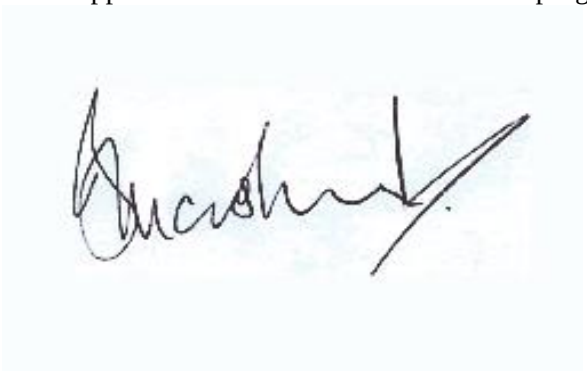
As there is now a bilateral agreement on the assessment of State and Federal developments, the Society hopes that the NSW Government will not allow offsets to enter the treatment of a proposal until a decision has been made to approve a proposal on grounds other than offset criteria.

In the current C-Mods proposal and that of the CCP, offsets were used to mitigate anticipated environmental damage (in fact almost to 'buy' a favourable outcome). **The Society is totally opposed to such cheque book driven assessments, regardless of any legislated subterfuge.**

[Conclusions next page]

6. Conclusions

- The original CCP was an immensely destructive concept which was sensibly rejected from environmental, social and heritage viewpoints.
- The C-Mods proposal is a contrived commercial arrangement between Coalpac, creditors and a company driven by self-interest; it should sensibly be rejected.
- Approval of the C-Mods proposal (the infant son of CCP) will be the end of the unique Ben Bullen Pagoda Land System (BBPLS) as it encourage more applications for extensions, each of which will be easier to approve because the BBPLS will have progressively lost its integrity.



Dr Brian Marshall,
For the Management committee.

[Main text and 5 Appendices,
2 of which are separate pdfs]

APPENDIX A

BMCS' submission to the DoE in relation to the EPBC Referral Reference Number: 2014/7147

Abridged version[28]

2. The proponent's new proposal

Coalpac places emphasis on (Referral document Section 2.1 p10) *"…backfilling and rehabilitation of the residual final voids resulting from existing mining operations and the rehabilitation of areas affected by subsidence from historic underground mining operations in the area"* and facilitating (Referral document Section 2.2 p10) *"…the complete rehabilitation of both the proposed and existing mining…at the conclusion of the Modifications' mining activities."*

The above sounds good, but the Society is concerned because all previous operations should surely have been subject to rehabilitation requirements and involved a bond to ensure that the work's anticipated cost was covered? Is Coalpac…suggesting that, should the application be refused, none of the work will be done? If so, this is a severe endictment of the whole process and a totally unjustified basis for any government making a determination.

The Society is further concerned about the statements that (Referral document Section 2.2 p10) *"No feasible alternatives to the Proposed Action are available"* and the *"…primary need for the Modifications is to ensure the short term continued supply of competitively priced coal to the domestic power generating facilities at the nearby Mt Piper Power Station whilst other strategies for longer term fuel supplies can be explored."*

The first part of the quotation is…only from Coalpac's viewpoint. Alternatives do exist. The Administrator, government and creditors should not be swayed by Coalpac's self-interests.

The second section of the quotation may be Coalpac's primary need for the new proposal, but an ongoing coal supply is available from Centennial, which is the current supplier. Energy Australia (EA) is a foreign-owned company which…may increase its profit margin if it can access dirt-cheap poor quality coal, but this is neither in the best interests of the impacted residents of Cullen Bullen, nor of the environment. These aspects were…decided in favour of social and environmental interests by the PAC review and the Director-General's report. Coalpac is asking for the interests of residents and the environment to be put aside so that EA…can benefit from its dealings with Coalpac, whilst concurrently exploring strategies for longer term fuel supplies!

EA (through ownership of Enhance Place) is already pursuing other options in the region…Through what might become effective ownership of Coalpac, it will benefit through Coalpac doing the work and receiving approval for its new proposal. EA would then be in a position to push for…a succession of modifications…

…why should mining in this environmentally and socially critical region be allowed to progress through successive encroachments when the overall concept was comprehensively rejected?

4. Assessment of the proponent's claim – flora and fauna

4.1 Cumulative concerns

In a submission relating to the CCP EPBC Referral 2010-5776 the Society noted in Section 2.4[29] that:
"The histories of the Cullen Valley and Invincible Mines are complex….The Cullen Valley Mine evolved through consolidation of mines…extending back to the late 1800's. The Invincible Mine commenced as an underground operation in 1901 and evolved via a second underground operation until the late 90's when open-cut extraction commenced. Both Mines have been intermittent as a function of coal-price fluctuations.

The salient points are that the region firstly experienced progressive consolidation of underground mines, and then witnessed movement to open-cut and high-wall mining with larger surface areas adversely affected. The region is now threatened by further consolidation and enlargement of the impacted surface areas. This has protracted and cumulative impacts on groundwater, surface water, and fauna and flora through destruction of habitat..."

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[28] *This is why the numbering in Appendix A commences at Section 2, omits Section 3, and then moves on to Sections 4 and 5. The full document may be obtained from Admin <bmcs@bluemountains.org.au> or Brian Marshall <briannamar@bigpond.com>*
[29] *CoalpacCons'tion2010-5776_BMCSSubmission_101227.doc available from Admin <bmcs@bluemountains.org.au>*

Disregard of cumulative impacts and/or seemingly cynical minimisation of their importance characterises various parts of the Referral document (RD)[30]. Examples are...

(a) In relation to the [proposed] 150 ha of totally removed habitat and 165 ha of potentially impacted habitat, the cumulative impact…from previous operations by Invincible and Cullen Valley [mines] are either disregarded or treated as a positive factor…RD p18 notes that the areas encompassed by the disturbance boundaries[31] provide potential habitat for a range of species, including some threatened species…[but] the habitat is of minor significance relative to large areas of similar habitat in the nearby region…that due to being adjacent to existing Cullen Valley and Invincible approved workings…[the disturbance] will not induce habitat-fragmentation and [the habitat] is likely to be already impacted…

These suggestions are outrageous because they: (i) involve classical minimisation and ignore the fact that the new proposal is extending the destruction of habitat by the existing mines; (ii) disregard the time- and space-cumulative impacts of past, present and future mines on habitat along the tract of the western escarpment; (iii) are wrong about fragmentation (particularly in the Invincible area)[32] as may readily be seen on…RD, Attachment A, Part 1, Fig. 4a; and (iv) [while recognising] that the existing open cuts cause impacts beyond their boundaries,…apparently see this as in some twisted way justifying the new open cuts – but each additional cut extends the damage envelope.

(b) Four CE and E species are listed in RD Tables 3.2 and 3.3 as having a moderate likelihood of being present in the areas of removed habitat and potentially impacted habitat; they are a critically endangered leek orchid (*Prasophyllum sp. Wybong*), and the endangered Regent Honeyeater, Swift Parrot and Spotted-tailed Quoll. RD pp19-20 [suggest] that...*the removal of this area [138.8 ha] of potential foraging habitat is unlikely to impact the availability of foraging habitat for these species in the locality."* The leek orchid is disregarded.

…these species are dismissed too lightly: (i) 138.8 ha versus the amount of habitat in the nearby Parks is again minimisation; (ii) the habitat removal is one small part of a cumulative problem, both locally at the scale of the new proposal and existing mining operations, and also more regionally as emphasised in (a)(ii) above; and (iii) there is negligible consideration of what happens to the species when the particular areas of habitat which they visit are destroyed or in other ways impacted – when dealing with endangered or critically endangered species, what level of disruption and risk is deemed to be acceptable?

…the foraging argument has less validity when dealing with mammals such as the rare Quoll, and no validity when dealing with a critically endangered orchid.

(c) …vulnerable species…with moderate to high likelihood of occurrence comprise…Silver-leaved Gum, Clandulla Geebung, Austral Toadflax…Broad-headed Snake…Large-eared Pied Bat, Grey-headed Flying-fox and the Bathurst Copper Butterfly.

In relation to…these, it is stated (RD pp20-21):
"The species have not been recorded and therefore (are) *not known to exist within the Disturbance Boundary, however…suitable habitat features occur for them within the Disturbance Boundary..."*
"...no important population of these species occurs within the Modification Boundaries. Accordingly, the proposed action will not reduce the area of occupancy of an important population."
"...no important population of these species occurs within the Disturbance Boundaries…The Disturbance Boundaries are located directly adjacent to the existing Invincible Colliery and Cullen Valley Mine, and therefore no fragmentation of habitat will occur."
"The Proposed Action will remove a relatively small area of potential habitat for these vulnerable species when compared with the available areas in nearby conservation areas…The action will not impact habitat to the extent that any vulnerable species known or predicted to occur will decline."
"It is not considered likely that any vulnerable species would be significantly impacted by the Proposed Action."

…the potential existences of these species within…the disturbance and modification boundaries are dismissed in a too cavalier fashion…the BMCS responses in (a) and (b) above are also applicable here, but to elaborate: (i) cumulative impacts are ignored; (ii) minimisation is rife; (iii) there is negligible consideration of what happens to the species when the particular areas of habitat which they visit or occupy are destroyed or in other ways impacted; (iv) fragmentation is distinctly possible as may readily be seen on…RD, Attachment A, Part 1, Fig. 4a…; (v)…at least one of the species has been recorded within the disturbance and modification areas, is part of an important

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[30] *From here onward, the Referral document will be denoted as RD.*
[31] *And realistically this also applies to the areas between the disturbance and modification boundaries…shown in the RD, Attachment A, Part 1, Figs. 4a and 4b*
[32] *The only way it wouldn't be fragmentation is if, through additional extensions over time, the original CCP ribbon open cut is envisaged; there would then be no habitat to fragment!*

population, and would certainly decline if this new proposal is approved; and (vi) the last of the above quotes is…absolute nonsense.

4.2 Edge effects, setbacks and stand-offs

The analysis of impacts…treats the disturbance boundary as absolute to the extent that there will be…no impact beyond it…edge effects will be nil. This…seems to follow on from the belief that hardly anything of significance exists in the modification boundary, yet RD, Attachment A, Part 1, Fig. 3 shows that this is incorrect in relation to *P. marginata*…

There is clearly a need to address edge effects, setbacks from potential breeding habitat and clusters of threatened populations, and stand-offs in the context of cliff-lines and pagodas.

BMCS is firmly of the view that these matters must be covered in any environmental assessment of the new proposal…

4.3 Specific concerns – threatened ecological communities and species

(a) ***The CEEC comprising 'Box Gum Woodland'***…in RD Section 3.1(d) p18 it is stated that: *"The proposed action will not remove any Endangered Ecological Community (EEC) or habitat for EEC's"*; and that *"Box Gum Woodland (listed under the EPBC Act as a CEEC) occurs nearby but does not occur in the Modification Disturbance Boundaries and will not be impacted."*

This is clarified in RD Section 3.3(e) p27: whereas the CEEC (Capertee Rough-barked Apple – Red Gum – Yellow Box Grassy Woodland, MU20)[33] was originally identified by Cumberland Ecology within the Invincible Colliery modification boundary, it has been re-assessed. Cumberland Ecology now believes that the vegetation better conforms with a variant of the dominant surrounding community, Tableland Gully Mountain Gum – Broad Leaved Peppermint Grassy Forest (MU 35)[34].

…it is clear from this reclassification that identifying these differing vegetation assemblages requires much expertise and leaves room for a degree of subjectivity [e.g., as discussed in The Vegetation of the Western Blue Mountains, Sections 4.1.10, 4.1.14, 4.1.15, 4.2.1 (Tables 4.1 and 4.2), 4.5 and 4.6][35].

…identifying vegetation communities was also raised in the Planning Assessment Commission's Report on the CCP and cited by Keith Muir in his current submission[36] as follows: *"…given the controversy over this issue, any further survey work to establish the occurrence and distribution of vegetation communities on the site should be fully independent or directly oversighted by OEH at the Proponent's cost"*…Cumberland Ecology has not opted for independent oversight in the preparation of the referral document (RD).

(b) ***Persoonia marginata*** (Clandulla Geebung)…Figure 1 below…should be considered in conjunction with RD, Attachment A, Part 1, Fig. 3 which shows the distribution of *P. marginata* according to Cumberland Ecology.

RD Section 5.2 p31 states: *"Silver-leaved Gum, Austral Toadflax and* ***Clandulla Geebung*** [BMCS emphasis] *have not been recorded from within the Disturbance Boundaries and the habitat present is not considered to be critical for their survival. No important populations of threatened species are likely to be impacted by the Proposed Action."*

RD Section 2.5 p12 states: *"…targeted surveys were undertaken at Cullen Valley Mine for Clandulla Geebung (Persoonia marginata)…Before each subpopulation was sampled, the boundary of the subpopulation was walked to find the limit of outlying individuals...All areas within the currently approved disturbance area for Cullen Valley Mine where Persoonia marginata were identified have been conserved."*

RD Section 3.1(d) pp20-21 state: *"These vulnerable species have not been recorded from the Modification Boundaries and no important population of these species occurs within the Modification Boundaries. Accordingly, the proposed action will not reduce the area of occupancy of an important population."* And: *"The habitat to be removed is not considered to comprise critical habitat for any species occurring or with potential to occur on the site."*

None of these quoted claims withstand closer examination…and even in terms of RD, Attachment A, Part 1, Fig. 3 by Cumberland Ecology…the Clandulla Geebung (*P. marginata*) is part of a significant population within the

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[33] *http://www.environment.nsw.gov.au/resources/nature/vegBlueMntnsVol220.pdf*
[34] *http://www.environment.nsw.gov.au/resources/nature/vegBlueMntnsVol235.pd*
[35] *http://www.environment.nsw.gov.au/resources/nature/vegBlueMntnsVol106.pdf*
[36] *Muir K, Reference Number: 2014/7147, Coalpac Invincible Colliery and Cullen Valley Mine Modifications, near Cullen Bullen 25km north of Lithgow NSW, Colong Foundation submission, March 12 2014*

modification boundary. **It is reprehensible that Coalpac, presumably as advised by Cumberland Ecology, has made such seemingly unjustified claims in a formal document to the Department of the Environment.**

Fig.1: Cullen Valley Modification (blue boundary line); green pins show locations of *P. marginata* x number of plants observed; the large yellow pin marks the location of 3 plants within the proposed open cut (i.e., inside the disturbance boundary)

The Society is particularly conscious of the broader distribution of *P. marginata* in relation to the existing Cullen Valley Mine workings (Fig. 1)…the existing mine workings [seem to] have fragmented and perhaps destroyed part of the *P. marginata* population…any additional mine-related work will seriously impact this vulnerable species.

(c) ***Prasophyllum sp. Wybong…***[37]: this critically endangered (CE) orchid has a moderate likelihood of being present in the areas of habitat to be destroyed (RD, Table 3.2). The Department of the Environment website notes that this terrestrial orchid grows to approximately 30 cm high when in flower but that it otherwise (in winter and spring) comprises a single, tubular, fleshy, dull-green leaf. A principal threat to the species stems from the difficulty of identifying it, other than when in flower, and comprises habitat clearance from mining activities…one population apparently occurred in a proposed open-cut coal mine site!

…this CE species receives no further attention…the Society would have at least expected a clear statement about whether it was subject to a targeted action or in any other way specifically investigated.

(d) ***Hoplocephalus bungaroides*** (Broad-headed Snake – BHS): RD Section 3.1(d) p21 says *"The habitat to be removed is not considered to comprise critical habitat for any species occurring or with potential to occur on the site."* And also: *"As no important populations of these species are known or predicted to occur on the site, the breeding cycle of an important population will not be impacted."*

This vulnerable species received…little consideration…despite [being sighted and photographed] in the broader area[38]…the species is present in the general area above the proposed open cut and could well forage in the defined open cut and highwall areas during the warmer months…

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[37] *http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=81964*

[38] *Muir K, Reference Number: 2014/7147, Coalpac Invincible Colliery and Cullen Valley Mine Modifications, near Cullen Bullen 25km north of Lithgow NSW, Colong Foundation submission, March 12 2014*

Mr Muir[39] has…drawn attention to advice by OEH that the stand-off distance for a BHS should be 500 m…the 50 metre stand-off zone…[had] little ecological basis and provided an inadequate level of protection.

(e) ***Other species recorded and/or disregarded by the RD***…the Society highlights the following species…

- ***Thesium australe*** (Austral Toadflax) – ***V*** (vulnerable) with a moderate likelihood of occurrence; this and other vulnerable species were covered…in Section 4.1(c) items (i)-(vi)…a targeted survey should be conducted for this species as it has been recorded at Pine Dale Mine and the Neubeck Coal Project…a little to the south of the existing Invincible Mine.
- ***Prostanthera cryptandroides subsp. crytandroides*** (Wollemi Mint Bush) – **V** and with a reasonable chance of being within the areas delineated by the disturbance and modified boundaries; this and other *Prostanthera* species have essentially been ignored…
- ***Paralucia spinifera*** (Bathurst Copper Butterfly) – **V** and with a moderate likelihood of occurrence…several populations of *Bursaria spinosa ssp. Lasiophylla* (critical habitat for the Butterfly) exist on the Invincible and Cullen Valley mine sites and were recorded on the NSW Wildlife Atlas in 2011[40]; the amount of…habitat is understated in RD Table 3.3 p16.
- ***Chalinolobus dwyeri*** (Large-eared Pied Bat) – V and with a high likelihood of occurrence…bat species require stand-off distances of 500 m from breeding sites according to OEH; they are directly impacted by noise, dust and strong lights and will become collateral damage should the new proposal be accepted; they are essentially disregarded…

5. Assessment of the proponent's claim – avoidance, mitigation and compensation

5.1 Avoidance

RD Section 4 p30 emphasises that: *"…the mine plan proposed for the Modifications has been modified to avoid environmental impacts. The proposed disturbance area has been reduced to avoid impacts on known occurrences of Box Gum Woodland CEEC, upon a known population of Persoonia marginata (listed as vulnerable under the EPBC Act), upon sandstone outcrops and habitat areas that provide overwintering habitat for the Broad-headed Snake."*

The above is amusing in its degree of ineptness…

- The plan has been modified to avoid impacts on the *Box Gum Woodlands CEEC;* this would be impressive were we not told elsewhere (RD Table 3.1, RD Section 3.1(d) p18, RD Section 3.3(e) p27) that…has in fact been reinterpreted as Tableland Gully Mountain Gum – Broad Leaved Peppermint Grassy Forest…
- The plan was also modified to avoid populations of *P. marginata*…the areas encompassed by the disturbance and modification boundaries contain several hundred *P. marginata* plants…
- Ensuring the open cuts avoided the BHS's 'overwintering' cliffs and rocky outcrops is sensible…it would have been better to entirely exclude such breeding habitat from highwall mining and to stipulate the stand-off distances.

5.2 Mitigation

…the RD commonly emphasises that destruction of habitat…will be temporary because of the progressive rehabilitation programme. BMCS has, in submissions related to the CCP, intensely criticised the mining industry's approach to rehabilitation and does not resile from it…when something is trashed, one has to clear up the mess, but cosmetic improvements are far different from the habitat and landforms which were destroyed.

…rehabilitating damage from the existing operations is put forward as a reason for approving the new proposal…granting extensions to a mining operation on the basis that past damage will be rectified is ridiculous. Actions of this type should not be required if appropriate bonds are taken by government and ongoing rehabilitation is practised and properly policed.

5.3 Offsets

…RD Section 4 p30 in blue font: *"…measures aimed at providing environmental offsets, compensation or off-site benefits CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act."*

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[39] Muir K - ditto

[40] *Jonkers C, LEG EPBC Submission - Coalpac Pty Ltd - March 2014.pdf*

BMCS fully endorses this position. Offsets should not be on the table until the Federal department has discharged its obligations under the *EPBC Act*…

If the Principles of Ecologically Sustainable Development are properly applied the need for offsets will be infrequent. The conflicts over offsets arise because they are not 'like for like', the discussions about offsets become part of the decision-making process rather than a consequence following on from making the decision, and the divisions of government charged with protecting the environment become embroiled in determining the details of the offset process.

Dr Brian Marshall,
For the Management Committee.

APPENDIX D

Ecological Surveys & Planning

Dr Steven Douglas (BSc. M.Env.Plan. PhD.), Principal

NSW OEH license number SL100367

Report to Blue Mountains Conservation Society examining a subset of ecological concerns regarding the proposed extensions of Cullen Valley and Invincible Mines

Prepared by Dr Steven Douglas
Assistance provided by Chris Jonkers, Julie Favell, and Brian Marshall

April 2014

Executive Summary

- A form of the threatened 'Box-Gum Grassy Woodland', namely the open, grassy (not *Joycea*) woodland dominated by Blakely's Red Gum, occurs in the study area but is masked by aggregation at mapping scales that are apparently too coarse to reveal it;

- Whilst OEH view the broader unit in which the Blakely's Red Gum Woodland occurs as Tablelands Grassy Forest, this does not preclude the Red Gum-dominated subunit being treated as 'Box-Gum Grassy Woodland' at a suitable scale of mapping and analysis;

- Irrespective of whether the contentious vegetation is MU20, MU35 (of DEC, 2006) and/or a variant of 'Box-Gum Grassy Woodland', it clearly has at least State significance due to it being of a class that is over-cleared, under-conserved, and significantly threatened;

- It is grossly incorrect to assume that communities, species (including R and K ROTAPs) or populations that are not currently listed as threatened under the TSC and/or EPBC Acts could not be listed were they to be assessed and nominated. The lists of threatened biota under those Acts are far from comprehensive;

- Unless competently assessed and found otherwise, ROTAPs that are not currently listed as threatened under the Acts should be treated as environmentally important and, in accordance with the precautionary principle, as potentially threatened. Their Rare and/or Poorly Known status is indicative that they may be at risk: most have simply not been further assessed. They should not be disregarded in the impact assessment of open cut mining;

- A form of Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland EEC is present in the area proposed to be cleared for the Cullen Valley open-cut mine, but is currently obscured by aggregation at the map scales that have been used. The extent of this EEC in the area of the proposed mine should be investigated using ground-truthing;

- The occurrence of Black Gum in the region (esp. Wallerawang) may merit listing as an Endangered Population and is of sufficient significance to warrant consideration in relation to the Critical Habitat provisions of the TSC Act;

- Unless surveys for *Thesium australe* within the subject area occur at the same time as the recently confirmed proximate population is in flower, any credible potential habitat should be deemed actual habitat for this very cryptic plant. Plant numbers and densities should be presumed to be the same as at the proximate site unless there are significant differences in site conditions. This species may warrant nomination as Endangered and the local occurrence as an Endangered Population (if the species remains listed as Vulnerable);

- The population of *Persoonia marginata* is significantly larger and more extensive in the study area than claimed by Cumberland Ecology. Greater regard must be given to the conservation status of this species, and the consequences for it at the species and population scales if this substantial area of known habitat were destroyed by mining.

Introduction

Ecological Surveys & Planning was originally engaged by BMCS to review documentation and to undertake brief fieldwork to determine the extent, if any, to which *Capertee Rough-barked Apple – Red Gum – Yellow Box Grassy Woodland* (MU20 as per DEC 2006) is present in areas proposed for open-cut mining within the proposed extension to Cullen Valley Mine. The primary purpose of this investigation was to clarify uncertainty about the presence, local form and extent of MU20 because consultants (Cumberland Ecology, herein, CE) for the mine proponent and officers from NSW Office of Environment & Heritage (OEH) have expressed differing views on this issue. MU20 is seemingly accepted by both of those parties as within the scope of a threatened ecological community informally known as 'Box-Gum Grassy Woodland' listed under both State and Federal laws.

In undertaking the review of relevant documentation, it became apparent that there are additional ecological issues relevant to the interest of BMCS, including the need to consider another threatened ecological community and associated species detected nearby; the flawed rationale used by CE in downplaying / dismissing 'R'-coded Rare Or Threatened Australian Plants (ROTAPs) in assessments for the proposed mine extension (and other earlier related assessments); and an apparent lack of mapping of hollow-bearing trees that are potential habitat for threatened fauna, and that if removed, require suitable substitution.

Methods

BMCS and/or Lithgow Environment Group (LEG) provided links to websites or emailed attachments with the intent that the author read relevant sections to become suitably informed about the matters under investigation. To gain an adequate understanding of the ecological issues at the core of this report, numerous documents were read, and some are not specific to the current proposed extensions to Cullen Valley and Invincible Mines. Some of the key information relates to ecological assessment in relation to the now defunct Coalpac Consolidation Project (CCP) that was far larger in scale than what is currently being considered, but that dealt with the same or at least related issues.

No statistical analysis of vegetation mapping information or any revision of aerial photo interpretation (API) was undertaken for this report. Fieldwork was brief and targeted, and was directed by LEG delegates, Chris and Julie. The first site visited was east of Cullen Bullen Cemetery, and was used to examine an area of vegetation where there were differing opinions as to how best to classify it, specifically, whether any of it could sensibly be considered to be MU20. The second, third, and fourth sites were all within the proposed open cut mining area east of the railway. The fifth site was in the area that Invincible Colliery will reportedly soon clear as that mine expands upslope parallel to the highway. Most site inspections involved walking only a short distance from the vehicles. Only one substantial transect was undertaken, and this was commenced at the NE corner of an existing open-cut within Cullen Valley Mine, then progressed upslope roughly parallel to a shallow drainage depression until it was determined that there was no longer scope for Box-Gum Grassy Woodland or other communities of note to occur.

Research findings

Box-Gum Grassy Woodland and allied communities

Under-sampling and variability

MU20 is described in DEC (2006) and is shown to have been subject to only three quadrat samples within that large study area (Western Blue Mountains). DEC (2006) states that communities with very low sampling density are likely to be less well defined relative to those with higher sampling densities. Three quadrats is a very low sampling density, and it is also evident that the type form of the community is from the Capertee Valley, which DEC acknowledges has a relatively unique set of abiotic parameters. It is therefore feasible that MU20 only occurs in the Capertee Valley in the strict form in which it was originally described, and that other variants of it outside that area could, subject to adequate sampling, be recognised as another allied community, or a distinct variant of MU20 that may, for example, contain a different mix of canopy species but have a very similar understorey and structure on the same geology.

The situation is strongly evident in the NSW Southern Highlands where the listed Endangered Ecological Community (EEC) Southern Highlands Shale Woodland (a concept originally derived from basic 1:100,000 scale mapping), has several forms, some of which are so distinct that they can sensibly be recognised as different communities, not just sub-communities or variants, depending on the scale of assessment. Thus, the scale of assessment and mapping is critical to consideration of whether MU20 is valid in the study area and how similar any related vegetation would need to be to the described form to be sensibly deemed to comply with it. The Colong Foundation and others have commented on this issue.

Problems of scale

It does not appear that either OEH (formerly DEC) or CE have undertaken mapping within the Cullen Valley and Invincible mine areas at a fine enough scale to be optimal for assessing the ecological effects of the proposed mine extensions, which are considerably smaller than the CCP. It is not OEH's job to provide project-scale mapping, but because of controversy about the alleged deficiencies of CE's mapping, OEH has reviewed and updated information based on DEC (2006), and provided this information in a response to the CCP Planning Assessment Commission (PAC).

In the various commentaries on this wider issue, OEH states that CE mapped a Tableland Open Forest, some of which features Blakely's Red Gum, and considered it to be 'Box-Gum Grassy Woodland'. OEH later used 3D high resolution imagery to assist its mapping, and concluded, aided by fieldwork, that CE's Tableland Open Forest is outside the scope of 'Box-Gum Grassy Woodland' because the dominant canopy species is Mountain Gum, +/- Bridge's Apple Box, with Blakely's Red Gum sometimes present, and sometimes locally dominant. OEH considers this vegetation to be Tableland Grassy Forest. The issue here is the decision by OEH to aggregate all local variants of this Tableland Grassy Forest, and through this aggregation, conclude that the vegetation is largely outside the scope of 'Box-Gum Grassy Woodland'. Finer scale mapping could/would have determined that whilst most of the Tableland Grassy Forest in contention isn't 'Box-Gum Grassy Woodland', one

subunit of it is: **namely the open, grassy (not *Joycea*) woodland dominated by Blakely's Red Gum.**

Thus the problem remains one of aggregation, which in this case, has resulted in OEH forming the view that there isn't any 'Box-Gum Grassy Woodland' in the area proposed to be cleared for the mine extension. Note that this is OEH's conclusion, not CE's, and that CE earlier took a view similar to mine (but perhaps even broader) and identified part of its Tableland Open Forest as 'Box-Gum Grassy Woodland' EEC.

The Colong Foundation has commented on the wider issue of map scale and interpretation in which it sees that CE's mapping (apparently coarser than DEC's 2006 regional work at 1:25,000) has tended to aggregate some of DEC's communities, giving the impression that the vegetation of the subject area is less diverse at the community scale, and perhaps more problematically, that there is a larger area of the well-conserved communities and a smaller area of the poorly reserved units. It seems that CE's mapping is coarser than DEC's 2006 work, and whilst not as coarse as the 1:100,000 map by Benson & Keith (1990), still involves some aggregation of map units initially created at 1:100,000 scale. This seems odd. It suggests that, at least at that time, CE was not using mapping at an appropriate project scale (even allowing for the fact that the project area was relatively large) and/or that there are deficiencies in how the mapping team interpreted earlier maps, aerial photos, and ground-truthing. It may be that in addition to issues of method, the team lacked sufficient familiarity with the techniques and may not have put in sufficient time on-ground or otherwise to produce a suitably competent result.

Project-based mapping would normally be expected to split map units derived from coarse scales such as 1:100,000 and 1:25,000. I suggest that CE's mapping should sensibly be at something closer to 1:5000, and were it so, it would very likely deal with subunits mentioned but not mapped by DEC (2006). Presumably, CE now has access to the ADS40 imagery and associated equipment as used by OEH. If so, it seems reasonable that it use that imagery to review its map, that it adopt a suitably fine scale of mapping with a heavy emphasis on fieldwork. Known or potential threatened ecological communities or those of other conservation significance should be mapped on-ground by walking their boundaries with DGPS. This seems sensible given the size of the area that would be cleared or otherwise potentially put at risk by the proposed mine extensions.,

In summary, OEH ruled out the presence of 'Box-Gum Grassy Woodland', at least in part as a function of aggregation at the particular scale of their mapping and analysis.

The lack of a clear mapping standard

Many consultants are constrained by the budgets (time and money) imposed by their client and/or the competitive tendering process. In CE's work for the CCP EA, it sampled 44 vegetation quadrats for use in mapping. This may have been based on the process of stratification whereby the consultant examines existing vegetation maps and on-ground attributes to conclude how many likely vegetation communities or types are likely to be present, then determines how many quadrat samples would reasonably be needed to obtain statistically adequate data for each of them (this may vary where there are existing datasets that the consultant can access, in which case, far fewer samples may be required). In cases where I have been involved in vegetation mapping, the bare minimum, or less, is funded, and this can produce a suboptimal result which is readily critiqued by external observers or those who don't appreciate the severity of constraint that under-funding can impose on accuracy. Vegetation

mapping is a labour-intensive process. Doing it well is very expensive and some clients won't pay to do the job properly.

MU20, MU35, 'Box-Gum Grassy Woodland' or an unlisted vulnerable community?

Whilst this project brief placed much emphasis on the extent of MU20, the important question is whether any vegetation compliant with the 'Box-Gum Grassy Woodland' listings is present. On that basis, it is suggested that any 'hair-splitting' as to whether MU20 is present or not, or whether communities that are similar to MU20 are close enough to be treated as MU20 or not, isn't the core issue. From my limit observations and readings, I suggest that BMCS focuses on making the case that some of the Tableland Open Forest mapped by CE, which is classified as Tableland Grassy Forest by OEH, should be regarded as part of the 'Box-Gum Grassy Woodland' EEC.

Fieldwork revealed that a vegetation community that is seemingly compliant with the broad scope of Box-Gum Grassy Woodland occurs in the subject area beyond that currently mapped by CE, and probably beyond that classified by OEH. The dominant canopy species are Blakely's Red Gum and Red Box, with Rough-barked Apple and Yellow Box being absent. The understorey is clearly different from that of the surrounding Scribbly Gum / Stringybark Forest/Woodland, in that it contains little or no Red-anther Wallaby Grass, but instead contains a suite of lower, more palatable grasses and herbs, with little or no shrub layer. This Blakely's Red Gum community was seen in subtle drainage depressions, first order watercourses, and rarely spreading from those wetter sites into a more bench-like form that is likely associated with a particular geological stratum and/or higher groundwater.

OEH mention this vegetation type (here called the Blakely's Red Gum community) in a wider context in their response to the PAC for the CCP (Appendices A to E, Enclosure 3, e.g. p13, 3.1 para 2). OEH state that within their study area, four vegetation types are identifiable on undulating Permian sediments.

The one containing a subunit that is seemingly within the scope of Box-Gum Grassy Woodland is described in their paragraph 2:

> "The gently undulating footslopes at the base of hills, or in smaller drainage lines with less developed alluvial flats, support a grassy forest with Mountain Gum, often with Apple Box and sometimes with Blakely's Red Gum (*E. blakelyi*). The ground layer is grassy with palatable species such as Snow Grass, *Themeda*, *Echinopogon*, *Microlaena* dominating, and coarser grass such as Red-anther Wallaby Grass (*Joycea*) are relatively uncommon or absent. This is equivalent to Tableland Mountain Gum / Broad-leaved Peppermint vegetation type mapped by Cumberland Ecology."

OEH has placed the above-described vegetation outside the scope of 'Box-Gum Grassy Woodland', and apparently in response to OEH's review, CE revised its approach, leading to a reduction in its mapped extent of this most contentious vegetation type. The primary basis on which OEH excluded this community from 'Box-Gum Grassy Woodland' is that much of the canopy is non-compliant, and only rarely does Blakely's Red Gum become a significant canopy component.

I haven't looked at this issue as widely as OEH, and have only viewed a component of the area proposed for open cut mining, but I believe **that even if we accept OEH's view that the subject community is most sensibly considered Tableland Grassy Forest, this would not preclude the**

possibility that the Red Gum-dominated subunit can be treated as 'Box-Gum Grassy Woodland'.

In its reply to the CCP PAC, OEH do not provide sufficient evidence to convince me that this is not a reasonable conclusion. For example, OEH has not said that the understorey is outside the scope of 'Box-Gum Grassy Woodland' or that abiotic factors such as location, geology, and climate would exclude it. OEH's decision seems to be somewhat arbitrarily based on the issue of canopy composition and the relative rarity (in their view) with which Blakely's Red Gum becomes a significant canopy component. I suggest that BMCS pursue this further. If OEH has a good case to exclude the vegetation from 'Box-Gum Grassy Woodland', it is important that this be made known and in adequate detail.

OEH equate the subject vegetation that includes the Blakely's Red Gum community with MU35 in DEC (2006). DEC's (2006) figures indicate that MU35 would appear to be 'vulnerable' as long as its status in the Hawkesbury-Nepean catchment is representative or less threatened than across its wider range. MU35 is also rated as having most remnants in a 'moderately disturbed' condition, with a very small percentage rated as being in the 'low disturbance' condition. OEH's information indicates that MU35, whilst much more abundant in the DEC (2006) study area than MU20, warrants recognition as vulnerable. OEH is clear that this vegetation warrants conservation irrespective of its current lack of any clear TSC/EPBC legal status. Just because a community isn't listed on the TSC or EPBC Act is no indication that it isn't of conservation significance and wouldn't warrant listing if appropriately researched and nominated.

It appears that MU35 and very likely a wider unit of allied communities would warrant listing as a threatened ecological community, at least under the TSC Act. BMCS could contemplate resourcing a nomination of MU35 and allied communities as threatened under the TSC Act. Humane Society International has been preparing such nominations internally, and has also funded me to prepare several nominations of threatened communities, all of which have been successful or are in the process of being further researched by the Department of Environment.

Even though OEH has opted to exclude the Blakely's Red Gum community from the 'Box-Gum Grassy Woodland' EEC, it notes that the community is poorly reserved, especially outside the south of their range, and that because two of the local forms within this broad class occur on "more fertile, undulating sites" (they) are likely to have been subject to clearing (more so than is generally the case for the wider vegetation class). OEH states, "impacts to these vegetation types within the Project Area should be avoided" because of their high level of clearing and low level of reservation. ***Thus, irrespective of whether the contentious vegetation is MU20, MU35 and/or a variant of 'Box-Gum Grassy Woodland' it is still clearly of at least State significance.***

The conservation status of unlisted communities

CE indicates that communities that are not threatened under the TSC or EPBC Acts do not warrant consideration as threatened. OEH effectively makes the contrary point in relation to Tablelands Grassy Forest and other communities that are either not listed in their own right or are not within the scope of wider listings. It is concerning that CE have apparently assumed that the absence of a threatened status means that a community does not warrant formal listing. This assumes that there has been a state-wide, or at least in this context, regional or catchment-based assessment of the status of all mapped communities, and that any which would warrant listing as threatened under the TSC and/or EPBC Acts have been listed. That this is demonstrably not the case would be confirmed by

OEH and the NSW Scientific Committee and the Commonwealth Threatened Species Scientific Committee. OEH does not have internal funding or external grant funds to undertake such an assessment and nomination process.

In its reply to the CCP PAC, OEH describe various communities as being of conservation significance, and warranting protection because they are over-cleared, in generally poor condition, and under-reserved. This is evidence that they are at least 'vulnerable'.

Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland EEC

OEH's description of the vegetation types on undulating Permian sediments is broadly consistent with what I have seen during my fieldwork for this report. OEH indicates that the more low-lying terrain with larger alluvial flats support(ed) a community which CE terms Tableland Ribbon Gum / Blackwood / Apple Box. Much of this community has been cleared in the region because it is relatively accessible and arable. Part of this community could be within the scope of the Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland EEC, especially in frost hollows and sites where cold air drainage and ponding is a significant factor. Increasing elevation yields CE's Tableland Mountain Gum / Broad-leaved Peppermint community which is apparently equivalent to DEC's MU35. Further increases in elevation generate drier communities with progressively less palatable grassy understorey, i.e. an increasing prevalence of *Joycea*.

In the subject area, it seems that MU35 generally occurs higher in catchments, most likely in more sheltered sites and/or areas that are perhaps wetter due to their receiving more runoff from the pagodas and perhaps more groundwater seeping through strata, including coal measures. MU35 may then grade down-catchment into MU20 or at least a more grassy woodland form where abiotic factors favour a community which is much less a montane grassy forest and instead more of a tablelands / slopes woodland. Fieldwork supported such a transition, but it was less dichotomous and rather more complex. Thus, in one subcatchment, a community which could be considered MU35, transitioned into a narrow drainage line-associated community with affinities to Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland (e.g. *E. viminalis*, *E. dalrympleana*, *E. rubida*, *E. pauciflora*); in turn this became less montane and more open with Blakely's Red Gum becoming dominant for a section; then as the first order ephemeral stream began to incise and a streambed developed, Bridge's Apple Box phased in and became a significant canopy component, while the moist, grassy/herbaceous ground stratum decreased in significance, presumably because the incision of the stream (or more accurately, erosion, probably due to earlier land uses) meant that there wasn't as much relatively moist soil to support this vegetation. The narrow, riparian Bridge's Apple Box community also supports Blakely's Red Gum and Red Box, with Brittle Gum and Broad-leaved Peppermint on its fringes where it begins to intergrade with the drier, surrounding Scribbly Gum / Stringy Bark Forest/Woodland.

In the areas examined, a community arguably within the scope of 'Box-Gum Grassy Woodland' is present in small sections associated with subtle drainage depressions. These areas may be too small to have been mapped by OEH and perhaps by CE but they can be sensibly mapped. The extent to which this community broadens lower in the landscape is unknown (fieldwork was restricted to the upslope side of the railway), but it seems likely that it would extend downslope until it may be replaced by Ribbon Gum-dominated communities or other allied vegetation associated with lower-lying and colder riparian and floodplain environments. Most of that lower-lying vegetation has been cleared for

agriculture / pastoralism, and a subset of it is now listed as the Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland EEC.

Small, linear areas of Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland are arguably present in the area proposed to be cleared for the open-cut mine. One such area is described above in the transition from MU35 to the Red Gum grassy woodland. It is unlikely to be evident from aerial photo interpretation, and lacks one or more components typical of the community, but still warrants consideration as an example of the EEC. It is noteworthy that CE does not appear to have dealt with this community in its ecological assessment, perhaps because its extent in the subject area is very small, and it can't be mapped remotely. However, investigation of the extent of this community in the area of the proposed mine is warranted using ground-truthing.

I recommend that BMCS highlight the potential direct loss of Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland, and that it consider any indirect effects of the proposal on this community where it occurs offsite (downstream/downslope).

Species of particular note

Black Gum

The threatened tree species, Black Gum (*Eucalyptus aggregata*) primarily occurs in the Tablelands Snow Gum, Black Sallee, Candlebark, Ribbon Gum Grassy Woodland community (and is listed as a component in the Final Determination). Both the community and this species occur nearby. The indirect risk from mining is through alteration of surface and subsurface hydrology. At least some sites supporting this habitat are likely to be groundwater dependent.

BMCS could consider nominating the local occurrence of Black Gum as an Endangered Population. It is one of only three large populations across its range in NSW, VIC and ACT. The species is at or near the northern limit of its distribution in this area, and is threatened by further clearing, fragmentation, weeds, direct and indirect effects of mining, grazing that prevents recruitment, altered hydrology, genetic 'swamping' from proximate species, and by climate change. Note that this species is currently under review for potential listing as Endangered, and that if this happens, the listing of an Endangered Population is automatically precluded because that status is restricted to species below the threat level of Endangered.

Whilst OEH has become extremely reluctant to use the Critical Habitat provisions of the TSC Act, BMCS could nominate an area or areas of Critical Habitat for Black Gum in the region. The significance of the regional or at least local population, especially around Wallerawang, is already documented, and because it is one of only three large populations, and perhaps the largest (the others are in the Braidwood and Black Springs areas), it has extra weight as potential Critical Habitat.

Thesium australe

This is a small, cryptic plant, listed under both the TSC and EPBC Acts. Until recently, it had not been recorded in the Lithgow LGA, but has been detected not far from the current proposed mine extension as noted in the EPBC Act Referral for the Neubeck mine proposal. This species is very poorly understood, and would readily go undetected unless in flower. It is believed to be at least hemi-

parasitic on the roots of grasses, and is most strongly associated with Themeda. It is known to occur in highly disturbed sites that may be so seemingly degraded that most ecologists wouldn't look there or would devote very little survey effort to such areas.

CE earlier asserted that the species hadn't been recorded in Lithgow LGA based on BioNet Atlas records, and that it was unlikely to be present in the study area. This is another example of CE's either profound misunderstanding of how datasets like the Atlas and ROTAP codes operate, or of unprofessionally selective misuse of information. Proposing that a species is unlikely to be present simply because there are (were, in this case) no proximate Atlas records fails to consider that the Atlas is not a database of comprehensive, systematic survey results, and that many, indeed most areas, have not been surveyed for threatened biota, especially something as cryptic as *Thesium australe*. Oddly, in another context, CE uses something of a contrary argument by rightly pointing out some of the limitations of Atlas data when arguing against a view that Atlas data can be used to a) predict the presence of a community and/or b) determine the relative biodiversity of an area. CE clearly understands that the Atlas isn't comprehensive, and that the absence of a species in its records means virtually nothing because of the general paucity of survey data available. The perversity of CE's reasoning in this regard is revealed in the Neubeck EPBC Act referral that shows that the species is now confirmed from the region in two substantive populations.

Thesium australe is strongly associated with *Themeda* grasslands and could occur in native grassland, derived grassland, and grassy woodland/forest. CE apparently hasn't performed targeted surveys for this species. This may be especially warranted given how cryptic the species can be (especially if surveyed outside of flowering time), and because at least one of the proximate records was found in 'highly disturbed areas', which may be so poor that CE and others wouldn't have looked there or given the area much attention. In the absence of thorough survey at a time when the proximate populations are flowering, I suggest treating potential habitat as actual habitat using the same sort of numbers and densities as occur at the proximate site unless there are significant differences in site conditions. This would result in an over-estimate of actual habitat, not least because the species doesn't seem to occur in areas where it would often be predicted based on what is known of its habitat requirements.

My preliminary assessment is that this species warrants upgrading to Endangered, at least in one or more States, even if it remained Vulnerable nationally.

Persoonia marginata

Chris Jonkers showed me information that confirms this species occurs well outside the area in which CE has mapped it. I was shown two such occurrences, along with a map of Chris's new records of this plant. In the latest information that I have seen, CE claims that the current form of the proposed open cut extension to the Cullen Valley mine excludes all occurrences of *P. marginata*. This is now demonstrably incorrect, and not by a small margin, as according to Chris's data, there are numerous plants within the proposed open cut. This species is not cryptic like *Thesium* or many orchids or other tiny or highly seasonal plants. It is a small to medium sub-shrub to shrub that is readily observed and identified. Even allowing for all of the situations that could cause ecologists to miss significant plants, I'm confounded as to why CE has so severely under-recorded this species. But irrespective of this, CE's information and associated claims are now shown to be defective, and substantially so. This needs to be addressed, and greater regard should now be given to the conservation status of this species, and what measures might be undertaken if this substantial area of known habitat is destroyed by mining.

To the best of my knowledge, there is not currently a reliable means of translocating *P. marginata* or reintroducing it into a reconstructed habitat after mining. I believe this species is one of several threatened *Persoonias* where, beyond the issue of direct habitat loss, it is not clear what the causes of decline are and/or how these can be readily managed (problems associated with honey bees and the absence of native fauna critical to seed germination are theorised). I suspect that this species is genuinely under-conserved and that it warrants reservation of as much of its habitat as is feasible. Further surveys at the level of intensity undertaken by Chris Jonkers would greatly assist OEH and others to understand the species' distribution, abundance, and threat level. Chris's information reveals that the plant is more abundant than has been previously estimated, but whilst more occurrences have been found, population size remains small, and threat levels, including from mining, remain high and may be escalating.

Eucalyptus cannonii

The now accepted name of this taxon is synonymous with the earlier name, *E. macrorhyncha* ssp. *cannonii*. The taxon is listed as Vulnerable under the TSC Act and until recently, held the same status under the EPBC Act. It appears to have been one of many default listings under both Acts due to its ROTAP status (2VCi), which in the Federal case, saw it listed by default on the earlier Endangered Species Protection Act. The trigger for its removal from the EPBC Act is unknown. However, based on similar removals or attempted removals in recent years, I believe the motivation was a departmental policy to remove default ROTAP listings of Vulnerable species that may not have warranted listing had they been subject to current assessment standards. I don't believe the delisting was driven by an external nomination.

My reading of the decision to delist this species from the EPBC Act is that the determination is inadequately informed, out-dated, and that it could readily have been challenged at the time that public submissions could be made. The claim that the species is not actively threatened is demonstrably inaccurate given the situation with mining in the Cullen Bullen area and beyond. The original EPBC Act Listing Advice for the species also lists threats such as too frequent fire, grazing, and logging (esp. for firewood), along with the non-specific threat of land clearing. The determination to delist the species does not provide evidence that these threats have diminished or ceased to operate. Furthermore, there is abundant evidence of landscape-scale decline of stringybarks, most notably *E. macrorhyncha s.l.*, apparently due to moisture stress and potential over-abundance of insect pest species associated with the most recent thirteen-year drought.

E. macrorhyncha has been widely reported to have experienced extensive deaths and die-back (loss of foliage, death of limbs etc.) across the tablelands and western slopes of south-eastern Australia. Evidence of this is still abundant. *E. cannonii* is closely related to *E. macrorhyncha* and may well have suffered the same stresses and decline.

On the basis of current and potentially continuing threats, including from mining and from drought that is officially accepted as having been magnified by climate change, there seems to be a case for nominating *E. cannonii* to be relisted as Vulnerable on the EPBC Act. Equally, there is sufficient cause to retain its status under the TSC Act. I doubt that OEH or the NSW Scientific Committee would seriously contemplate removing this species from the TSC Act based on the evidence available and on assessments of other Vulnerable species that have been had their status evaluated in detail.

The proposed removal of a substantial number of *E. cannonii* to accommodate the mine extension will clearly only weaken the species' conservation status, which I believe is legitimately Vulnerable. The

magnitude of this threat needs to be assessed in the context of an accurate appraisal of the local population and its significance for the conservation of the species across its range. Vulnerable species are often prone to incremental erosion of their conservation status because they are not at imminent risk of extinction, and may be locally common. Assessment of the effects of the proposed mine extension on this species should have full regard to the risk of incremental endangerment through a series of decisions to remove habitat associated with forecast mining, forestry (especially plantation development), road works, etc., as well as considering the best available information about the effect that climate change may have.

'R' ROTAPs and their conservation status

It was brought to my attention that CE has allegedly downplayed the conservation significance of Rare Or Threatened Australian Plants (ROTAPs) that aren't currently listed on the TSC or EPBC Acts. Having read at least some of the relevant material, particularly in the PAC correspondence, I agree that there is a genuine issue here. As noted earlier in this report, CE has demonstrated a tendency to misunderstand and misuse information and concepts in a manner that is scientifically naïve at least, or professionally dubious at worst. If the latter, CE may think that by such endeavours, it is favouring the interest of its client, which superficially it may be, but in the current level of scrutiny, this approach makes CE's assessment look less than credible, and arguably brings the consultancy industry into disrepute. I respectfully suggest that any competent ecologist operating at a level where they are undertaking major surveys and assessments for projects of the scale of the CCP, would understand the limitations of BioNet Atlas data; of OEH and other mapping projects in relation to the legal status of ecological communities; and of the ROTAP lists and codes. Unfortunately, for whatever reasons, CE has tried to make it appear as though any species or community not currently listed under the TSC or EPBC Act is known not to be threatened. This is seriously misleading if it is a deliberate attempt to deceive consent authorities and the public, or at the very least, it is profoundly naïve. I note that OEH, in its reply to the CCP PAC (Report Appendices A to E, Enclosure 2. p9), does not accept CE's argument in this regard:

> "Although the four ROTAP species are not listed as threatened, considering their restricted distribution and the general lack of information on the reservation status of three of these species, OEH considers that potential impacts to them are of concern. Moreover in the absence of detailed assessment information, OEH cannot gauge the significance of predicted or potential impacts resulting from the Project."

The four ROTAPs mentioned are *Acacia asparagoides* (2R), *Leionema lamprophyllum* ssp. *orbiculare* (2R-P3), *Leucochrysum graminifolium* (2R), *Philotheca obovalis* (3RCa).

Contrary to CE's perspective, most species and communities, even if there is published material indicating or confirming that they are in some way 'vulnerable', have not been assessed to determine whether they would warrant listing under those Acts. Underfunding of OEH and the NSW Scientific Committee is the main issue, but it may not be politic or in other ways appropriate for OEH to nominate threatened biota. Indeed, some may see a conflict of interest if OEH were known to be nominating threatened biota for listing or upgrading, whilst it is also a concurrence/consent authority.

Nominations are now largely a matter for experienced professionals with access to key data sources, some of which require licenses. Given such circumstances, it is not at all surprising that most

ROTAPs not already listed under the Acts, have received very little or more often no attention in terms of assessing their potential suitability for adding to the Acts. Instead, at the Federal level, some resources have evidently been directed to researching and supporting internal nominations **to remove** from the EPBC Act biota previously listed as threatened. Note that it does not follow that biota removed from the EPBC Act are also removed from the TSC Act, as is apparently the case with *Eucalyptus cannonii*. This may be because the biota has a higher threat level in NSW than nationally. The removal of some biota from both Acts is warranted simply because the original default listing may have been in error and/or because new information has emerged such that the original default listing is redundant and unsupportable. However, it seems odd that there is currently public funding to remove biota from the EPBC Act, when there is so little funding to research and support additions.

It is also noteworthy that the original lists of threatened plants under the TSC and EPBC Acts were not generated by a process of research and nomination as CE would seem to believe, or at least want us to believe. They were, and to a degree still are, lists derived from the ROTAP schedules. For example, the Vulnerable plants listed under the TSC Act were originally just V-coded ROTAPs within NSW. They were added by default, and equally, ROTAPs with codes other than V and E e.g. K (poorly known) and R (rare) were left off the original TSC and EPBC Acts. This was not because they were deemed to be less than threatened, but simply because there was insufficient information to automatically list them as threatened under the Acts.

Although listing (and delisting) of species under both Acts are wider issues, they provide insight into why ROTAPs not in the Act remain largely unlisted but far from immaterial in terms of their need for protection.

CE should assess any relevant ROTAPs currently outside the Acts, to determine their actual status, not just their out-dated status under ROTAP. Conversely, if CE opts not to do this, ROTAPs' environmental significance must certainly not be disregarded. Indeed as a guide, the precautionary approach indicates that Rare or Poorly Known species be treated as threatened (at least Vulnerable) unless there is sufficient information to conclude otherwise. Furthermore, it is essential that the consent authorities in DP&I be aware of this importance and not be misled by consultants who seem to suggest otherwise.

Recommendations

1. OEH to specify a scale and other parameters that CE can use to generate a vegetation map that all parties can agree is of an appropriate scale and level of reliability suitable for this project. The Director-General's Requirements can and should specify factors such as mapping methods, including scale. OEH has published Threatened Biodiversity Survey and Assessment Guidelines for Development and Activities, and CE has stated that it complies with this publication and with the Department of SEWP&C's (now DoE) guidelines for identifying the EPBC Act-listed 'Box Gum Woodland'. It would be useful if OEH (and probably DoE) were to add guidelines or requirements for vegetation mapping that help consultants to more accurately quote on and provide that information. Setting such standards would provide a benchmark that consultants will need to meet if not exceed.

2. MU20 was defined by DEC based on 3 quadrats. This could and should be improved by more sampling. To assist this, even if there is now little or no MU20 in the current project area, CE could and should supply their quadrat data to OEH as per OEH's request. CE are arguably obliged to supply their survey data, including quadrat data, to OEH under the terms of their Scientific License to collect flora samples. License holders are reminded annually by OEH of their obligation to upload their flora data to the BioNet Atlas, though it is widely believed that few do this because the time to do the work isn't directly funded, and OEH has little means to know which licensee has generated any data. In this case, because OEH know that CE has undertaken vegetation fieldwork, OEH should insist that CE supply the associated data as a condition of its license.

3. In the context of matters raised in the original brief for this report, BMCS should focus its attention on the basis on which OEH determined that CE's Tableland Open Forest and OEH/DEC's Tableland Grassy Forest is not 'Box-Gum Grassy Woodland' EEC. . Based on my observations, OEH has not convinced me that their conclusion is sound.

4. BMCS consider resourcing a nomination of MU35 and appropriately aggregated communities (all or part of Tablelands Grassy Woodland) as threatened under the TSC Act and potentially under the EPBC Act.

5. BMCS consider resourcing research and if appropriate, nominations for at least the four 'R' ROTAPs already identified as relevant to the proposal, along with the poorly known *Epacris purpurascens* var. *onosmiflora* that has been identified near the Invincible Colliery.

References

Benson DH & Keith DA (1990) 'Natural vegetation of the Wallerawang area'. *Cunninghamia* 2(2) pp:305-335.

DEC (2006) *The vegetation of the Western Blue Mountains*. Department of Environment & Conservation, Hurstville.

OEH (2012) *Response to Planning Assessment Commission review of the proposed Coalpac Consolidation Project* (Enclosures 2 and 3). Unpublished correspondence, NSW Office of Environment & Heritage, Sydney. On-line at http://www.pac.nsw.gov.au/Projects/tabid/77/ctl/viewreview/mid/462/pac/238/view/readonly/myctl/rev/Default.aspx (2012 11 06 - OEH Response to PAC.pdf)

APPENDIX E[41]

3.1 CCP v1 S2.5 Geology

3.1.1 S2.5.1 Stratigraphy

Irrespective of the reference sited on p18, the Coal Measures and underlying Berry Formation are Permian in age. The Permian is unconformable upon a 'basement' in which the only Carboniferous rocks are late granitic and dioritic intrusions. This basic error from a consulting organization has presumably been accepted by Enhance Place which has worked in the region for many years; **it does not inspire confidence.**

The seven coal seams and intercalated rocks are shown in Figure 4 (p20). BMCS appreciates that Figure 4 is 'indicative' but Coalpac has much more stratigraphic data as it has stipulated a reserve of 108 Mt of ROM coal (S2.5.2). The provision of vertical dip-parallel sections to scale or, better still a panel diagram, would have provided a basis for seeing how seam thicknesses vary over the region to be mined. Such data have bearing in relation to estimates of coal-foregone (CCP v1 pxxiii).

3.1.2 Omitted structural data

Highwall mining is an integral part of this proposal. **It is therefore disturbing that no information is provided regarding fracture systems and faulting in the region of the pagodas. It is even more disturbing that there is no regional map of the principal fracture systems or even an airphoto interpretation of lineaments**[42].

3.2 CCP v1 S8.1 Highwall (HW) Mining
CCP v2F Geonet stability and subsidence assessment

3.2.1 S8.1.1 Background
S8.1.2 Methodology
S2F.1-3 Introduction, Geotechnical information and SHM pillar dimensions

BMCS notes that the Geonet study is a **preliminary assessment** based on assumptions. These include: using rock-mass data from the Ulan Seam, said to be analogous to the Lithgow-Lidsdale Seam and to have given adequate results for Cullen Valley and Invincible Mines; and stipulating that the four seams are unweathered, of uniform thickness, lack structural disruption by faulting, and hold no groundwater. Absence of groundwater certainly does **not** apply to the Lithgow-Lidsdale Seam, and insufficient information is provided (or is as yet unavailable) to evaluate the other items (e.g. S2F.3.1 p20 *"Characteristic highwall conditions of topography and seam thickness are variable over the proposed highwall mining blocks in the Coalpac Consolidation Project mining area."* The selected FoS of 1.3 is able *"…to cope with local variations in coal seam geology and material strength"*).

BMCS concludes that the vast majority of the information provided in the sections (as specified in the Section 3.2.1 title) is controlled by:

- The maintenance of safe mining conditions as any collapse would be on to parts of the Superior Highwall Minor (SHM) equipment.
- Pre-selection of a minimum operating FoS of 1.3 as the stability criterion – this is recommended as standard practice in an ACARP-funded CSIRO report (S2F.3.2 p23).
- Empirical determination of pillar span and width/height dimensions consistent with maximum overburden height for each seam and a FoS of 1.3 – this provides operational safety but it may not ensure long-term stability (S2F.3.2 p23).

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[41] *Excerpt, adjusted formatting, from the submission at: https://majorprojects.affinitylive.com/public/12f80aafdd2513dbc9723277fe07f640/Coalpac%20Consolidation%20Project_%20Blue%20Mountain%20Conservation%20Society%201%20of%206.pdf*

[42] *BMCS is aware that a little more information is provided in CCP v2F pp10-16 (also duplicated in CCP v1 S8.1 p105) – on p10 one learns that the dip-directions reflect a very open NE-trending syncline, most faults trend NNW or NNE (though dips vary from sub-vertical to low-angled), and that "It is* ***anticipated*** *that the major rock-mass jointing will follow the same orientations". BMCS hopes that there is more information than this* ***'anticipation'.***

- The SHM machine configuration and dimensions which, despite the superficial complexity in S2F.3 pp10-27, impose practical constraints – in consequence, *"…SHM spans of 3.5 m will be made for mining in the Katoomba and Lithgow seams and spans of 3.0 m will be designed in the…Moolarben and Irondale seams."*

Finally, and effectively emphasising that the design criteria are little more than a first-pass exercise, *"…more detailed highwall mining design and geotechnical analysis is carried out for each highwall mining panel as part of the evaluation and approval process by DTIRIS-MR"* Also, *"…until the open-cut areas have been excavated, the full extent of previous mining operations will not be known, and further detailed analyses will include the as-mined conditions…to effectively evaluate each highwall panel…"* (S8.1.2 p106).

3.2.2 S8.1.2 Methodology
S8.1.3 Subsidence
S2F.4-9 Geomechanical assessment of SHM Pillars

The main aim of this 2-D and 3-D modelling was to further assess the stability of the pillars, modify the pillar geometry if necessary, determine the probable amount of subsidence, and make recommendations regarding barrier pillars and their implications. As with any such modelling, assumptions were made about stress distributions and geological data, the latter being supplied by the company.

The principal finding was that the maximum subsidence of landscape ridges would be less than 20 mm, whilst in areas overlying previous underground mining of the Lithgow Seam it would be from 10-15 mm.

Largely because of the cliff-edge instability demonstrated by the simulations both before and subsequent to open-cut mining (see S2F.5.2-4), the final highwall position will be located a minimum of 50 m from pagodas and escarpments (S8.1.3 p107).

3.2.3 BMCS comments

- The empirical data (S3.2.1), as further refined by the modelling (S3.2.2), demonstrate that, **subject to the utilized assumptions being correct**, highwall mining with an FoS of 1.3 and the identified pillar geometry will have long-term stability and induce less than 20 mm of subsidence.
- The value of these predictions is **reduced** by the frequent reference to the need for additional plans within a Mining, Rehabilitation and Environmental Management Plan[43] (S8.1.5 p108) to be developed in consultation with DTIRIS-MR[44] - this process will inevitably exclude input from NGOs.
- Concerns continue to be the lack of detailed knowledge of the structural geology, and uncertainty regarding the state of saturation of the Lithgow-Lidsdale Seam and its impact on highwall extraction.
- The highwall step-back of 50 m from pagodas and escarpments, **providing that the step-back is from the spur points and does not enter the intervening valleys,** may protect these landforms from being undercut by highwall instability, **but it is insufficient –** there will still be visual, noise and general proximity impacts from the viewpoints of human amenity and that of other fauna – **pagoda-topped cliff-defined spurs will overlook open-cut devastation.**
- The above step-back still means that highwall mining will extend for some 250 m beneath pagodas and escarpments, **and subject them to up to 20 mm of subsidence** – 20 mm is **NOT** a magic number such that 19 mm is harmless whereas 21 mm is catastrophic – **S2F.5.2 clearly demonstrates the type of pre-mining instability which could be prone to subsidence-induced collapse – BMCS believes that the step-back should be at least the full distance of horizontal mining**
- **All this for just 1.9 Mt of coal –** CCP v1 S4.2.2 p36 states that the area can't be economically mined by underground methods because of *"…reduced seam-thickness, limited reserve size, sensitive overlying topography (including the presence of pagodas and publicly-visible sandstone cliffs), poorer coal quality and other contributory factors…"* – **this sounds like an excellent argument for leaving it in the ground in deference to the superb environmental and scenic values.**

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[43] *This is to supersede what we previously called Subsidence Management Plans in the context of LW mining – the details of how this new type of planning will operate place emphasis on flexibility – see http://www.dpi.nsw.gov.au/minerals/environment/mining#Mining-Rehabilitation-and-Environmental-Management-Process-%28MREMP%29 – this does not fill me with confidence.*

[44] *One of the principal deficiencies of the SMP process was its control by Mineral Resources and the effective facilitation of ongoing mining through compliant consultants' reports in the face of obvious mining-induced damage.*