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Greg Hunt
Minister for the Environment
Canberra
1st June 2014

Review of Maules Creek mine approved offset properties

Dear Mr Hunt

I am writing on behalf of the Northern Inland Council for the Environment to present you with damning findings about the assessment, decision-making and offsetting regarding the Maules creek mine project. We are appalled that the federal government has approved the offsets for the Maules Creek and Boggabri coal mines, and attach an in-depth response to the "independent review" of the offsets. We assert that the conditions, in spirit and letter, of the approval for this mine have not and cannot be met and that its approval was an error that you must now take action to rectify.

The Australian public would be equally appalled to learn the requirements of the EPBC Act 1999 have been misconstrued to aid Whitehaven coal mine to destroy 1665 ha of Leard State Forest, acknowledged to be irreplaceable. There is literally no other area of forest that can compensate for the loss of the extent and condition of woodland proposed to be cleared for this mine.

You would have seen that clearing in the forest over winter and spring has been temporarily halted by a voluntary undertaking by Whitehaven Coal, while awaiting the court case into the legality of clearing during key hibernation and breeding seasons. We urge you to take this opportunity to correct the mistakes that have been made by the Federal Government with regard to this project.

Every step of the environmental considerations for these projects has been seriously flawed. More specifically:

- You have received numerous reports detailing how the offsets are not like for like, or equal to or better, and the extent of the critically endangered ecological community has been grossly exaggerated, and yet the mines have still received approval. The Departments acceptance of the Greenloaning report without scrutiny of the detail presented in it is yet another example of the low standards you have allowed for the Maules Creek mine approval. That fact that review was done by an associate of Cumberland Ecology and paid for by Whitehaven was reason enough for close scrutiny.
- It has now been proven (validated by Greenloaning) that Cumberland Ecology presented false and misleading information in the impact assessment. Four hundred and ninety two hectares of Critically Endangered Ecological Community (CEEC) were deleted by Greenloaning, and yet you have chosen to drop the investigation into the false Cumberland Ecology vegetation mapping.

- The review by Unwelt confirms that the definition of the critically endangered ecological community that was used by Greenloaning was too broad and was inconsistent with the Threatened Species Scientific Committee listing advice.
- Umwelt does *not* confirm that the vegetation offered as offset for the project meets the requirements of the approval conditions. Only further field assessment can determine the accuracy of the results presented in the reports. The desktop consideration of methodologies in the Umwelt peer review, and the limited field work undertaken by Greenloaning have patently failed to fulfil the conditions of the Maules Creek approval that required thorough review and verification of the offset properties.
- It is absolutely imperative that the Department of Environment commission thorough field assessment of the offset properties to address the allegations of serious breaches of trust, process and rigour that we believe has occurred.
- We need clear concise answers as to how the Government has interpreted "like for like" and "equal to or better condition and habitat" to determine what is acceptable as offsets.
- We need and deserve a proper face-to-face explanation from your department in the field. You and your department should be accountable for your decisions.
- We have new evidence that proves the Greenloaning independent review of the new offset properties of Onavale, Wongala and Roseglass are also wrong, and there is still a large area of the northern offsets on the properties of Mt Lindesay and Wirradale that are not the critically endangered ecological community as claimed to be.
- We express our frustration at the Government's failure to protect the threatened plant *Tylophora linearis* and the Large-eared Pied Bat. Both of these nationally threatened species are present in Leard State Forest. Neither was admitted to be present by the proponent or the Government during the formal assessment process. It took the unpaid efforts of local ecologists and community groups to expose this failure and the Government has not acted to protect these species and suspend the approval until they are adequately considered and protected.
- We have searched NSW Flora Atlas database and found the area of the Northern offsets has been surveyed by Office of Environment and Heritage State-wide Vegetation Mapping Program, their plot data further validates that Cumberland and Greenloaning mapping is not correct.
- It appears that this draft vegetation mapping was wilfully ignored by both state and federal governments during the approval process; it provides further evidence for our allegation that the information presented by the proponent was false and misleading.

Botanists aware of this controversy are appalled that you have dropped the investigation into the use of false and misleading information to gain development approval. Your decision certainly has nothing to do with the quality of the evidence available. It appears you have chosen to turn a blind eye to what is one of the worst examples of professional misconduct, contrived misuse of the Box-Gum critically endangered ecological community definition and blatant abuse of the requirements of the EPBC Act 1999.

Conservation groups have fought to see justice for Leard State Forest, they are intent on seeing a proper and thorough assessment of the offsets, and they will continue to take action against both Whitehaven and Boggabri mines until a proper scientific assessment is conducted.

Yours sincerely
Philip Spark

President of the Northern Inland Council for the Environment

Contents

1-0. Introduction

North West Ecological Services has read the Greenloaning review of the Maules Creek offsets, and the Umwelt peer review commissioned by the Federal Department of Environment.

It is our contention, based on this analysis, that the condition of the Maules Creek approval requiring independent review and verification of the offsetting arrangements for Maules Creek has not been fulfilled.

It remains our contention that the proponent of this mine provided false and misleading information to obtain approval under the EPBC Act, and that the Department of Environment has not adequately responded to these allegations.

The Department commissioned a peer review of the Greenloaning report earlier this year, from ecological consultants Umwelt. The results of the Umwelt peer review cannot be used to determine whether the strength of the evidence is good enough to prove Cumberland Ecology and/or Whitehaven Coal provided false and misleading information to the Government in order to obtain the approval for Maules Creek. Nor are the reports by North West Ecological Services (NWES), The Envirofactor and Hewlet Hunter adequate to provide the maximum strength of evidence available, as they were rapid assessments to demonstrate serious inconsistencies in vegetation mapping and the interpretation of the determining criteria for the CEEC.

Nevertheless, the three ecologists' reports should have raised alarm bells sufficient for the Federal department to respond to the serious allegations with its own field assessment.

The review by Umwelt does not confirm the vegetation offered as offset for the project meets the requirements of the approval conditions. Only further field assessment can determine the accuracy of the results presented in the reports. What it does identify is that the definition of the CEEC used by Greenloaning was too broad and inconsistent with the Threatened Species Scientific Committee listing advice. Greenloaning have identified 492 ha of the Cumberland Ecology mapping within the northern offset areas as not conforming to the CEEC using this broad definition. It is therefore highly likely that should a more literal interpretation, consistent with the TSSC listing advice be applied, that additional field work would identify further areas of vegetation within the northern offsets that do not constitute the CEEC.

The Umwelt report makes clear that it is purely a desktop exercise as the authors have no field experience in the project area or how the methodology was implemented, hence cannot offer comment on the accuracy of the findings of the Greenloaning review, as the authors have no direct field experience of the area in question. What their review has done is identify where the implications of applying a certain methodology or interpretation of policy would lead to potentially inaccurate outcomes.

The extensive and detailed review of Whitehaven's offset properties undertaken by local experts who have freely given their time and have nothing to gain have been ignored in favour of accepting advice from coastal consultants paid by the mines to deliver a predetermined outcome.

The three local ecologists have over 70 years of experience of identifying what is and isn't this CEEC. The aim of their investigations was to cover as large an area of the offsets as quickly as possible to confirm or otherwise inconsistencies in the vegetation mapping. To have included full floristic plots in the methodology would have taken twice the time, and for the purpose of exposing the need for further investigation was not warranted.

Although preliminary, these studies provide strong and indisputable evidence of misrepresentation of the offset vegetation communities. Further detailed field work is required to collect full floristic descriptions and provide evaluations of how each diagnostic criterion for the CEEC are met at each waypoint site. The government should be contracting its own truly independent suitably qualified and experienced person to do that. If not, conservation groups will provide that information, however before it is done there must be assurance that the investigation will proceed all the way to a court verdict.

There has been no attempt by either the Federal or State governments to resolve this matter, apart from Whitehaven purchasing four more offset properties. Neither has made the slightest attempt to meet with conservation groups to work through their concerns. The public have been kept in the dark while government departments and the mines nut out deals that suit the mines; there has been zero transparency in the process.

We need clear concise answers as to how the Government has interpreted “like for like” and “equal to or better condition and habitat” to determine what is acceptable as offsets.

We need and deserve a proper face-to-face explanation from your department in the field. We have new evidence that proves the Greenloaning independent review of the new offset properties of Onavale, Wongala and Roseglass are also wrong, and there is still a large area of the northern offsets on the properties of Mt Lindesay and Wirradale that are not the critically endangered ecological community as claimed to be.

The public have as much right or more rights than the mines to be informed and included; it is a public forest that is going to be destroyed leaving a legacy of two big holes in the ground forever.

If the department is confident with the accuracy of the vegetation and habitat mapping there is no reason why they shouldn’t convey that confidence to conservation groups in the field.

We are now aware that the NSW Office of Environment and Heritage have draft vegetation mapping that concurs with our mapping for the northern offsets. That OEH draft mapping was wilfully ignored by both state and federal governments during the approval process.
The Department of Environment’s own internal review of the offsets found them to be inadequate for the Corben’s Long-eared bat. (See Appendix B). The Government appears to have accepted that very marginal habitat of Stringybark open forest will provide suitable habitat for the Corben’s long-eared bat, Regent Honeyeater and Swift Parrot. This is in contravention of expert opinion.

The Greenloaning report *increased* the area of suitable habitat for those species from 1456ha to 1637ha on Mt Lindesay and from 1942ha to 2400ha on Wirradale. These three species prefer box ironbark woodlands. There is no adequate explanation of how the consultant hired to complete the review came up with an increased area, especially given that the review reduced the area of Box – Gum woodland CEEC by 492 ha. Anyone who is familiar with these species and is familiar with that landscape will know those figures are vastly exaggerated and that Mt Lindesay has very little suitable habitat for them, and only the southern end of Wirradale at lower elevation would be considered suitable.

2-0. Summary of the Greenloaning Reports Dec 2013 and April 2014 detailing results from the independent review of the offsets

North West Ecological Services (NWES) recently (May 2014) inspected the offset properties of Wongala, Wallandilly and Onavale, and Dr John Hunter mapped the vegetation of the property Roseglass. The property Bimbooria was assessed from the boundary and aerial images.

The finding of those field assessments raise serious questions about the accuracy of the information presented in Alison Martin's reports and question why her reports were accepted. She should have been requested to present updated vegetation maps for all properties and present updated tables of all the vegetation types and areas of each vegetation type present. Circling vague red lines on old maps and using out of date tables from Cumberland's reports should not have been acceptable.

Martin's report for Wirradale and Mt Lindesay appears to have included extensive areas of open forest as CEEC that would not naturally be woodland, and areas of open forest and woodland have been included in CEEC where the indicator species Yellow box, White box and Blakely's Red gum are not dominant or co-dominant, but sub-dominant. Martin has not presented data to indicate that percentage canopy cover was measured to determine canopy tree species dominance. A point also identified in the Umwelt review.

To come up with the results which Martin has reported in Table G1. "Comparative Summary of Original Offset Estimates and Final Offset Outcomes" would have required that she remap the vegetation to measure areas for each vegetation type, and re-determine what areas fit the definition of the CEEC.

To do that she would have to know the dominance of each canopy species at each survey point, yet she provides no evidence to show that she has done that. It appears she did not want to show the public how she came up with the results, probably because it would have shown how blatantly incompetent the Cumberland Ecology reports have been.

The other major deficit in the reports is that there are no grid references for the waypoints given, and there are no numbered locations provided on maps to show her plots numbers where she has described the vegetation and habitat for the properties of Wongala, Onavale, and Bimbooria.

There are waypoint numbers mapped for the locations described for Roseglass, and some for the eastern and western offsets including Wallandilly, and the northern offsets Wirradale and Mt Lindesay; however those locations have no grid references provided to enable them to be revisited.

The reports appear to be rushed jobs with typos throughout, the December 2013 report presented offset results which were changed again in the April 2014 report, and the blank pages in the reports are questionable. Have the public been given modified versions with deleted pages? Or did she intend to show her updated vegetation mapping and revised vegetation tables?

In both reports Alison Martin presented the now discredited Cumberland Ecology tables of vegetation types and hectares, why did she do that when she had changed all the mapping and areas to come up with her Table G1. It was pointless presenting the Cumberland vegetation maps and tables when she had obviously changed the mapping.

Martin drew red circles around areas she changed without being specific as to what she had changed the Cumberland communities to, or where the new boundaries of the vegetation communities lie. It

is likely this was done to conceal how different her vegetation types and mapping were to that done by Cumberland.

An added difficulty to be critical of the mapping is that the keys used to describe the different vegetation types on the maps are very similar and difficult to discern. In particular for the derived grassland types, which are not discernable enough to be critical of them as to what is CEEC and what isn't CEEC.

3-0. Extracts from Umwelt peer review

The extracts below from the Umwelt peer review below explain that Martins interpretation of the definition of the CEEC has been too broad, saying that it would result in including vegetation that was never intended to be included in the EPBC Box – Gum CEEC listing, which concurs with the interpretation and findings of NWES, Hewlet Hunter and The Envirofactor.

Section 4-0 page 28

- Broad interpretation of aspects of the listing advice likely to result in the inclusion or omission of areas in a manner that is not consistent with the box – gum woodland community definition;

Section 3.4.3 pages 23 – 24

Despite this, there appears to be a broad interpretation of the issue of dominance and co-dominance in the canopy in addition to the extent to which forest communities should be accepted as part of the listed box – gum woodland (p. 3.7). Without field data to review it is not possible to identify whether there are any inconsistencies in the way these aspects of the listing advice have been applied. However, an area mapped as the box – gum woodland community should be dominated by the diagnostic canopy species and principally of a woodland form, or likely to have met this criterion if now in the derived woodland form. In addition to other criteria determining patch size, lower strata composition and cover as well as ground layer composition and floristics, this is the intent of the description in Section 2 of the listing advice (TSSC 2006).

While the listing advice allows for co-dominance by identified associated species, the circumstances where this occurs should be the exception and not the rule as indicated by the use of the term 'occasionally co-dominant'. This allows for variations to the composition of the canopy as a result of localised effects. Similarly, consideration of the crown separation and community structure should recognise that the forest form is typically not part of the listed box – gum woodland community; it is the exception as opposed to the rule as indicated by the term 'generally'.

While the methodology described in the report is unambiguous and based on a correct interpretation of the listing advice, the latitude given in application of the methodology, allowing for the inclusion of otherwise marginally compliant communities in the definition of what comprises box – gum woodland is not clear. The principle issue here is whether communities that are regularly co-dominated by the associated species are being included in the mapped extent of box – gum woodland. In such circumstances, these vegetation communities would not be consistent with the listing advice that establishes co-dominance by species other than the diagnostic canopy species is generally not indicative of the listed community. Although allowance needs to be made for localised variation in dominance, where the non diagnostic species form a consistently co-dominant component of the canopy, this represents another vegetation community that cannot be included in the box – gum woodland definition.

The meaning of the term co-dominant is important to the understanding of the criteria that defines what is or is not the CEEC. Dictionary.com defines it "in Ecology as being one of two or more species that are equally dominant in a biotic community : a forest in which oak and hickory are co-dominant". Extensive areas have been included as CEEC where the diagnostic species of White box, Yellow box, and Blakely's Red gum are sub-dominant and co-dominant and not occurring in a woodland form. All those areas must be identified and removed.

Section 3.4.3 pages 23 - 24

> Although the report includes an earlier discussion of how the listing advice was interpreted in undertaking the work, how the criteria above have been applied is not clear, particularly in relation to the second, third and fourth items. As previously noted, there is concern about the extent to which the community is defined as being present when diagnostic species are consistently co-dominant. Equally, circumstances where the presence of 'regeneration' has been used as the deciding factor in identifying the listed community are not clarified, nor are the criteria used for determining the original species composition in the canopy to conclude that the diagnostic species were previously dominant.
>
> These points in addition to the extent to which a broad interpretation of the listing advice has been applied are the likely cause of differences of opinion, or at least in interpretation of the listing advice between the various reports considered in this review. Points of difference between the four reports comprising the scope of this review are summarised in **Section 4**.

Table 4.1 page 31
"broad interpretation of the listing advice may have resulted in identification of areas that a more literal interpretation of the listing advice would not have included or alternatively excluded."

Section 5-0 Conclusion page 33

> Resolution of the approach to identification of box – gum woodland would resolve the majority of points of difference between the reports. While allowance should be made for stochastic events and localised or temporal disturbances, interpretation of the listing advice should closely follow the intent of the language used. This would ensure that areas considered to be box – gum woodland are generally of a woodland form dominated by the diagnostic species, but occasionally with other associated species being co-dominant.
>
> In order to verify the manner in which the listing advice has been interpreted, data representing key aspects of the community's identification should be provided in ecological assessments. This should include data representing the proportion of each canopy tree species at points or plots assessed in addition to other metrics corresponding to the listing advice (TSSC 2006) and the box – gum woodland species list (DEH 2006).
>
> In summary, the identification of box – gum woodland must follow the listing advice (TSSC 2006), as supported by the policy (DEH 2006), and not the reverse. Persons preparing reports that seek to implement these documents for the identification of listed communities should stipulate how potentially ambiguous criteria have been addressed including the presentation of quantitative data describing community floristics, structure and vegetative cover within each stratum. This would ensure transparent reporting of the approach to assessment and enable a clear understanding of the influence of co-dominant species and other key criteria can be understood by a third party. This is important both for assessment purposes and also in permitting others to replicate field surveys and analysis where necessary. This level of detail or transparency is not apparent in any of the reports reviewed.

The Umwelt peer review picked up on the fact that Martin's interpretation of the definition of the Box – Gum CEEC would lead to including areas of open forest as CEEC that would not naturally be woodland, and areas of open forest and woodland as CEEC where the indicator species Yellow box, White box and Blakely's Red gum are not dominant, but co-dominant or sub-dominant. That incorrect interpretation is why the reports from NWES, Envirofactor and Hewlet Hunter identified far fewer hectares of CEEC on the properties of Wirradale and Mt Lindesay.

The federal government must act on this serious misuse of the CEEC definition and either independently send its own botanist to remap the offsets, or require Whitehaven to contract another independent botanist to remap the offsets.

Given the evidence of more inconsistencies identified in this report, it is highly probable that the minimum requirement for the CEEC has not been met by hundreds of hectares, which gives the minister the right to revoke the approval. If the government does have updated vegetation mapping and tables of vegetation types and areas, we request that they be made available to conservation groups immediately.

The extent of the Box – Gum woodlands has major implications for the extent of suitable habitat for the Corben's long-eared bat, Regent Honeyeater and Swift Parrot. Greenloaning increased the extent from 1456ha to 1637ha for Mt Lindesay and from 1942ha to 2400ha for Wirradale. These three species prefer box ironbark woodlands, how she came up with an increased area is perplexing, considering she decreased the area of Box – Gum woodland CEEC by 492 ha, and according to Hunters findings the 492 ha should have been reduced a lot further.

Figure 1. Whitehaven Offset properties at 3rd April 2014

new ones are yellow, blue old

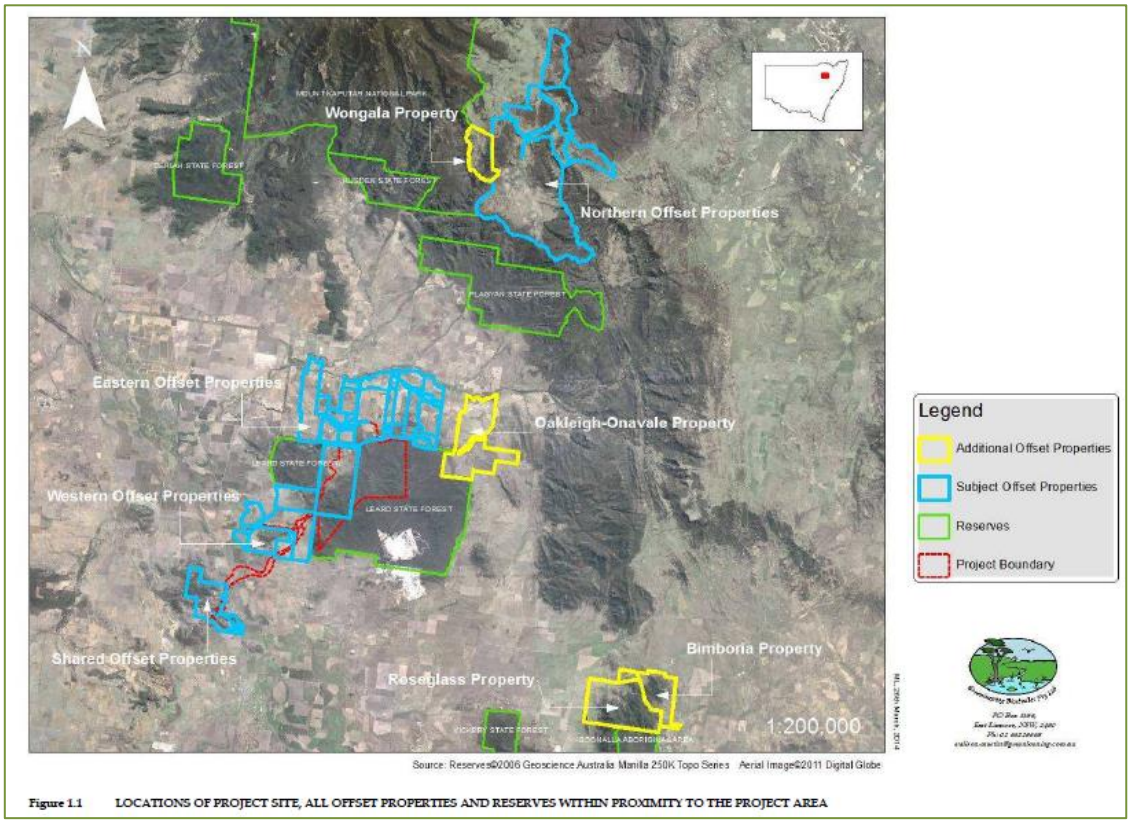


Figure 1.1 LOCATIONS OF PROJECT SITE, ALL OFFSET PROPERTIES AND RESERVES WITHIN PROXIMITY TO THE PROJECT AREA

4-0. Results of recent field assessments of the offset properties Onavale, Wongala, Roseglass and Wallandilly, and remote assessment of the property Bimbooria.

Method

The Roseglass property was mapped by Dr John Hunter, his method is discussed in the Roseglass section. The property Bimbooria was inspected from outside of the boundary and the use of aerial images. Similar vegetation that extends north along that ridge to the Manilla road was assessed.

NWES conducted a walking survey of sections of the properties Onavale, Wongala and Wallandilly as shown on the google maps for each area. The aim of the survey was to describe the ground cover, shrub cover, structure, age classes, tree species dominance, vegetation community, and the potential for occurrence of the Box – Gum CEEC community at each waypoint location.

The survey aimed to sample a cross section of elevations, aspect and topography within the offset properties, targeting the larger remnants within each property. As the maps show, the survey was limited to walking distance and access. The sites described were selected according to an approximate distance of 200m between plots, or 100 to 200 metres between plots if there was change in the vegetation community to be described.

For each offset property there is provided;

- Excerpts from Alison Martins reports describing the modification of the original mapping and final extent of derived grassland and woodland CEEC for each property
- The original vegetation map
- The original vegetation map with red circles showing areas changed
- Google map showing the waypoints were site descriptions were recorded
- A table of the descriptions at each waypoint
- And a table of the GDA grid references for each waypoint
- GPS referenced photos of each waypoint are provided via drop box links

The outcome of the survey identifies the largest potential extent of the critically endangered Box – Gum ecological community (CEEC). To determine what is and is not the CEEC requires further refinement using full floristic plot surveys to exact the determination.

Summary of NWES assessment of the new offset properties

- The assessment by NWES on 9 May 2014 found the area mapped as critically endangered ecological community on the property Onavale is exaggerated at 92.5 ha. At most there would no more than 50ha of CEEC woodland.
- The Greenloaning report found an *extra* 198 hectares of CEEC derived grassland and an *extra* 72 hectares of CEEC woodland on the offset Wallandilly. NWES inspected Wallandilly on 17th May 2014 to identify where how this could be the case, but the locations of both these new areas remains a mystery. No explanation was provided where the additional hectares had been found. NWES estimates that there are no more than 70 ha of potential woodland CEEC present.
- For the Wongala property, Martin remapped the derived grassland CEEC to 63 ha and the CEEC woodland to 219 ha, a total of 282 ha. This assessment estimated the total area of woodland

and open woodland/derived grassland to be approximately 270 ha within which there are areas of Apple box and Stringybark dominance that do not fit the CEEC.

- Essential information from the Martin report, explaining the use of crude circles to select polygons for deletion from mapping, has not been provided to the public.
- Inspection of the Atlas database found that one of the original offset areas in the Northern offsets has been surveyed by the Office of Environment and Heritage State-wide Vegetation Mapping Program and that the plot results confirm that Cumberland and Greenloaning mapping is incorrect.
- Neither Roseglass, Bimbooria nor Oakleigh/Onavale are actually owned by Whitehaven Coal, raising serious problems with the notion that these have been "verified" as offsets for the project.

Photo below shows an area of Narrow-leaved Ironbark and White Cypress woodland that was mapped as White box woodland CEEC on the offset property Onavale

4.1 Results from assessment of Onavale/Oakleigh new offset property

Alison Martin's Greenloaning report found that "Mapping of the extent of CEEC on the Oakleigh/Onavale offset property appeared to be relatively accurate" with only "minor mapping refinements" warranted.

Excerpts taken from Alison Martins reports

3.3.4 *Oakleigh/Onavale*

A number of rapid assessments conducted within areas mapped as CEEC occurring on the Oakleigh/Onavale Offset identified some areas where minor refinements to the CEEC mapping boundaries were required, as indicated in Table 3.3 below

Table 3.3 COMPARISON OF ORIGINAL QUANTITIY OF TOTAL CEEC FOR THE OAKLEIGH/ONAVALE OFFSETS CALCULATED BY CUMBERLAND ECOLOGY AND TOTAL CEEC CALCULATED AFTER MAPPING AMENDMENTS CONDUCTED BY GREENLOANING

Quantity of Box Gum Woodland mapped by Cumberland	Quantity of Box-Gum Woodland found to be present by Greenloaning	Quantity of Derived Native Grassland Woodland mapped by Cumberland	Quantity of Derived Native Grassland found to be present by Greenloaning
111.00	92.54	49.00	54.37

The locations where amendments to the mapping of the CEEC were warranted are indicated in Figure F.3, Appendix F. More comprehensive details on the extent of amendments required are provided in Table G.1, Appendix G.

iii. *Oakleigh/Onavale*

Mapping of the extent of CEEC on the Oakleigh/Onavale offset property appeared to be relatively accurate, facilitated by the comparatively open nature and moderate terrain of the site and relatively easy access to the patches of vegetation present. Some small areas, appearing to be dominated more by Narrow-leaved Ironbark than by White Box, were identified as potentially warranting minor mapping refinements.

The assessment by NWES on the 9th May 2014 found the area mapped as critically endangered ecological community on the property Onavale is exaggerated at 92.5 ha. At most there would no more than 50ha of CEEC woodland.

The map below shows the areas of Narrow-leaf Ironbark and White Cypress that have been mapped as White box woodland. The largest remnant has a narrow fringe of potential White box on the lower slope, the majority of the remnant mapped as White box – Narrow-leaf Ironbark – White Cypress open forest has no White box trees present.

The other comment is that the area mapped as open woodland is dominantly isolated trees in a derived grassland. That area is not potential CEEC as the trees present are dominantly Narrow-leaf Ironbark and Silver-leaf Ironbark.
The other finding of concern was that tropical grasses have been sown throughout most of the property and are beginning to invade into the woodland remnants and derived grasslands. These grasses are serious environmental weeds capable of displacing native groundcover, as has happened in Leard State Forest adjoining Boggabri Coal regeneration area.

Judging by the revised hectare figures presented by Martin there was more mapping changed than shown by the two small circles modified.

The original map done by Cumberland Ecology shows that botanist did not know the difference between Silver-leaf Ironbark and Narrow-leaf Ironbark, compare Fig B5 to Figure F3 map.

Below; The serious threat of tropical grass and weed invasion to conservation outcomes on Onavale, and all offset properties has not been fully acknowledged.

Likewise the threat, cost, and duration of control of White Cypress regrowth over thousands of hectares of offsets has not been acknowledged.

Figures 2. Vegetation maps of Oakleigh/Onavale

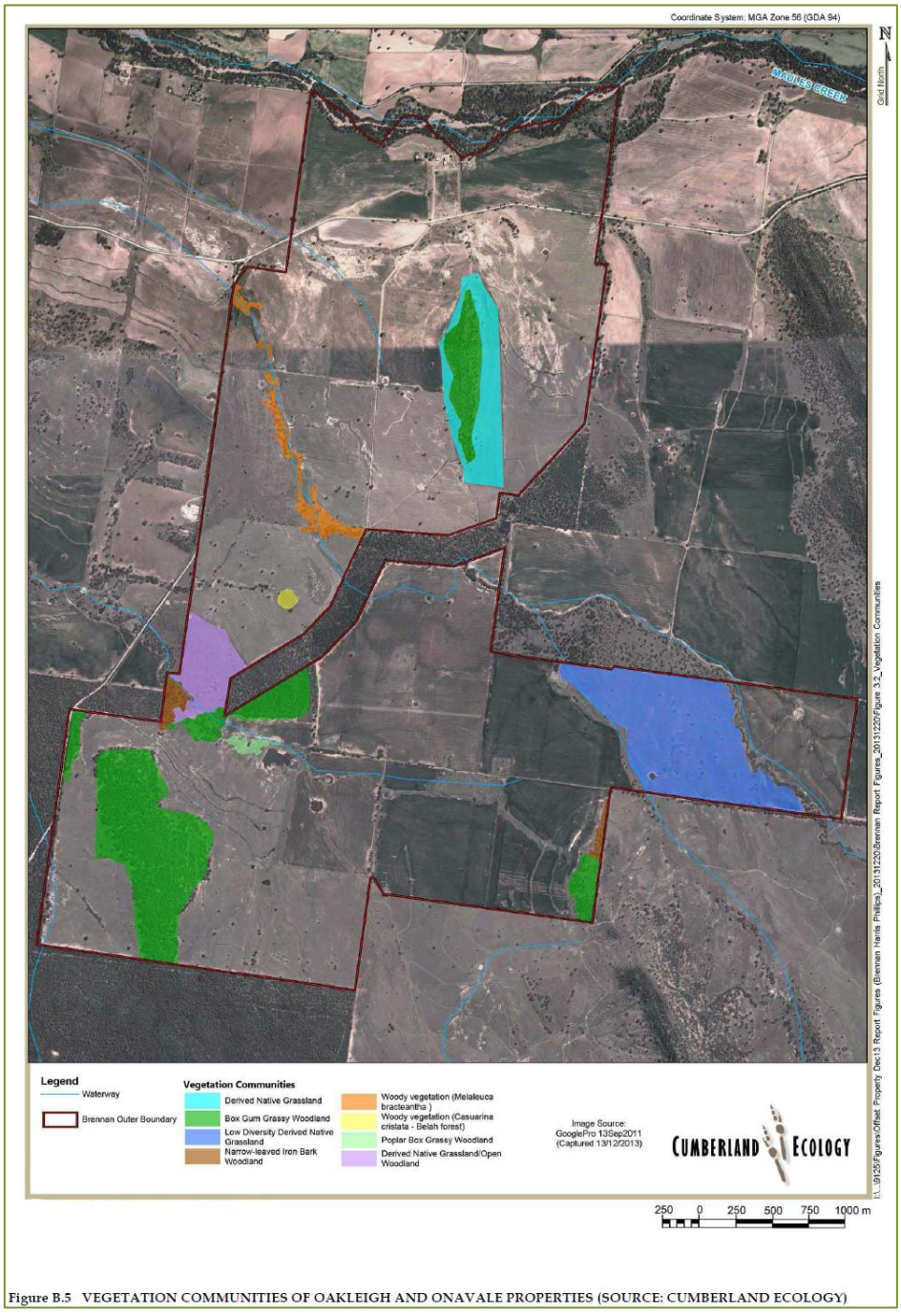


Figure B.5 VEGETATION COMMUNITIES OF OAKLEIGH AND ONAVALE PROPERTIES (SOURCE: CUMBERLAND ECOLOGY)

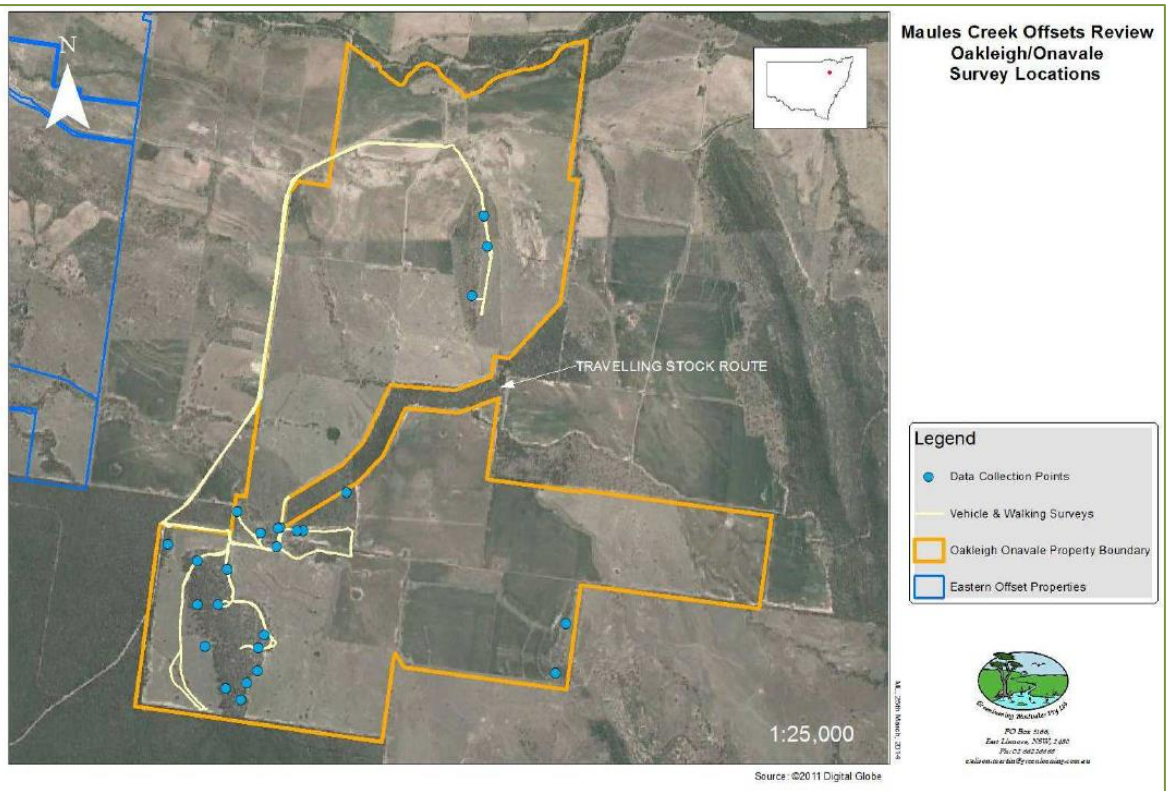


Figure C.4 GREENLOANING SURVEY LOCATIONS WITHIN OAKLEIGH ONAVALE OFFSET PROPERTY DURING THE 2014 SURVEYS

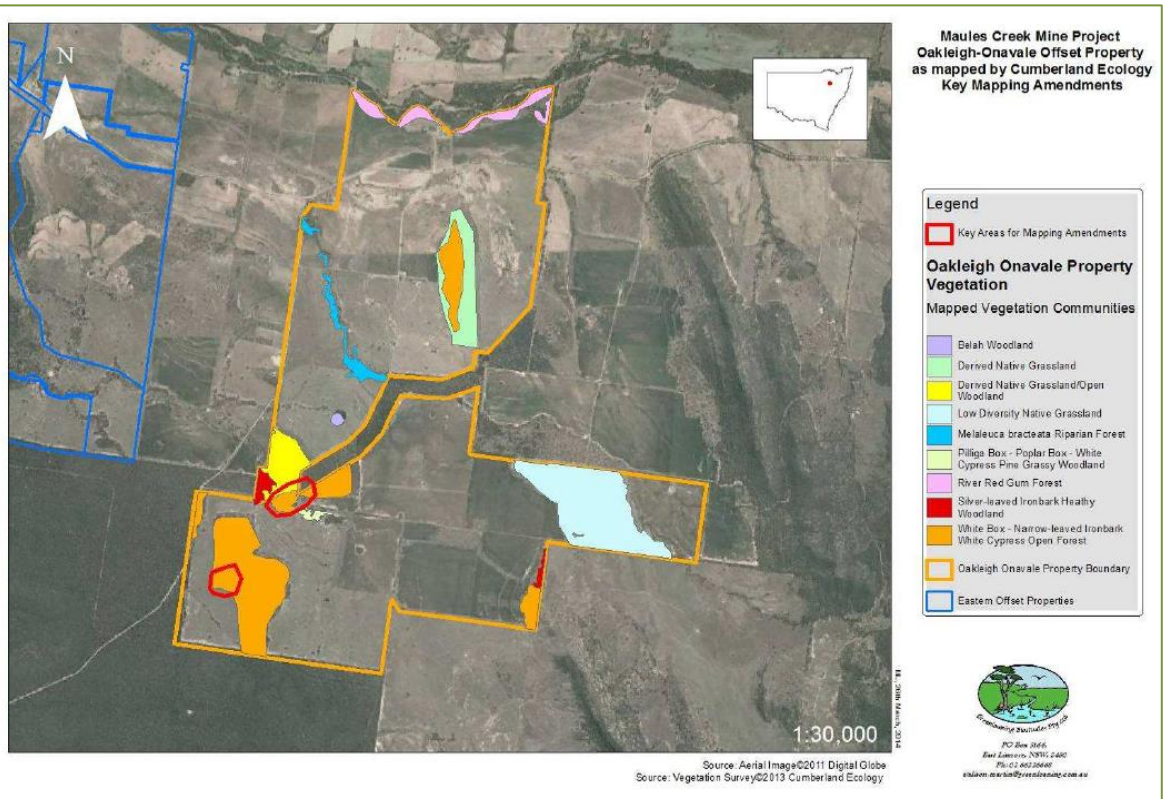


Figure F.3 KEY AREAS FOR VEGETATION MAPPING AMENDMENTS WITHIN THE OAKLEIGH ONAVALE OFFSET PROPERTY

Figure 3a. shows the Onavale waypoints described in the next two tables, the red outline shows areas that are potential Box - Gum critically endangered ecological community

Figure 3b. Enlarged view of the waypoints described, the red areas are potential Box – Gum woodland CEEC.

Table 1. Shows vegetation structure and dominant tree species at each waypoint location on Onavale

GPS referenced photos of the Onavale waypoints are available at drop box link
https://www.dropbox.com/sh/dgfxy6l2lgi8g8y/AAC9xnjzDgWYYzD8Pkk9xhqMa

Waypoint	Potential CEEC	Dominant tree species	Co-dominant tree	Sub dominant (few trees)	Structure	Age structure	Ground layer	Area
1363	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1364	No	Silver-leaf Ironbark			Woodland	Immature	grassy	
1365	Yes	White box	Blakely's Red gum	Bimble box	Woodland	Mixed	grassy	5.5ha
1366	No	Silver-leaf Ironbark	Narrow-leaf Ironbark & White Cypress		Woodland	Immature	grassy	
1367	No	Narrow-leaf Ironbark	White Cypress		Woodland	Immature	grassy	
1368	Yes	White box	Narrow-leaf Ironbark	White Cypress	Woodland	Immature	grassy	1
1369	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Regrowth	grassy	
1370	No	White Cypress	Narrow-leaf Ironbark		Woodland	Regrowth	grassy	
1371	No	Narrow-leaf Ironbark		White Box	derived grassland	Isolated immature	grassy	
1372	No	Silver-leaf Ironbark	Narrow-leaf Ironbark		derived grassland	Isolated immature	grassy	
1373	No	Silver-leaf Ironbark	Bimble Box		Open woodland	Immature	grassy	
1374	Yes	Blakely's Red gum	White Box	Bimble box	Open woodland	Mixed	grassy	Same 5.5
1375	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1376	Yes	White box		White Cypress	Woodland	Mixed	grassy	16ha
1377	Yes	White box			Woodland	Mixed	grassy	Same 16ha
1378	No	Narrow-leaf Ironbark	White Cypress		Woodland	Immature	grassy	
1379	No	Narrow-leaf Ironbark	White Cypress		Woodland	Immature	grassy	
1380	No	Narrow-leaf Ironbark	White Cypress		Woodland	Immature	grassy	
1381	Yes	White box			Woodland	Immature	grassy	1ha

Waypoint	Potential CEEC	Dominant tree species	Co-dominant tree	Sub dominant (few trees)	Structure	Age structure	Ground layer	Area
1382	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1383	No	Narrow-leaf Ironbark		White Cypress	Woodland	Immature	grassy	
1384	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1385	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1386	Yes	White box			Woodland	Immature	grassy	Same 16ha
1387	Yes	White box			Woodland	Mixed	grassy	Same 16ha
1388	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1389	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1390	No	Narrow-leaf Ironbark		White Cypress	Woodland	Immature	grassy	
1391	No	Narrow-leaf Ironbark		White Cypress	Woodland	Immature	grassy	
1392	No	Narrow-leaf Ironbark		White Cypress	Woodland	Immature	grassy	
1393	No	Narrow-leaf Ironbark	White Cypress		Woodland	Immature	grassy	
1394	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1395	No	Narrow-leaf Ironbark	White Cypress	White Box	Woodland	Immature	grassy	
1396	Yes	White box	Narrow-leaf Ironbark		Woodland	Immature	grassy	Same 16ha
1397	Yes	White box			Woodland	Immature	grassy	Same 16ha
							Mapped	24 ha
							Not mapped	17ha
							Max total	50 ha

Table 2. Grid References for Waypoints recorded at Onavale 9th May 2014 showing those with Potential CEEC vegetation

Waypoint	Potential CEEC	Zone Easting Northing in GDA	Altitude	Comments
1363	No	56 J 231241 6616433	344 m	White box sub dominant
1364	No	56 J 231748 6616397	337 m	No indicator species present
1365	Yes	56 J 231962 6616365	334 m	White box dominant
1366	No	56 J 232286 6616438	349 m	No indicator species present
1367	No	56 J 232393 6616452	352 m	No indicator species present
1368	Yes	56 J 232481 6616479	355 m	White box dominant
1369	No	56 J 232673 6616535	360 m	White box sub dominant
1370	No	56 J 232702 6616686	358 m	No indicator species present
1371	No	56 J 232135 6616683	352 m	White box sub dominant
1372	No	56 J 232052 6616695	351 m	No indicator species present
1373	No	56 J 231951 6616619	341 m	No indicator species present
1374	Yes	56 J 231899 6616544	339 m	Blakely's Red gum dominant
1375	No	56 J 231651 6616074	358 m	White box sub dominant
1376	Yes	56 J 231611 6616025	362 m	White box dominant
1377	Yes	56 J 231610 6615925	362 m	White box dominant
1378	No	56 J 231610 6615776	360 m	No indicator species present
1379	No	56 J 231688 6615673	363 m	No indicator species present
1380	No	56 J 231762 6615582	368 m	No indicator species present
1381	Yes	56 J 231869 6615512	367 m	White box dominant
1382	No	56 J 231901 6615426	369 m	White box sub dominant
1383	No	56 J 231891 6615329	371 m	No indicator species present
1384	No	56 J 231849 6615230	377 m	White box sub dominant
1385	No	56 J 231782 6615115	378 m	White box sub dominant
1386	Yes	56 J 231738 6615063	376 m	White box dominant
1387	Yes	56 J 231712 6614974	367 m	White box dominant
1388	No	56 J 231654 6615079	370 m	White box sub dominant
1389	No	56 J 231656 6615156	371 m	White box sub dominant
1390	No	56 J 231682 6615291	369 m	No indicator species present
1391	No	56 J 231634 6615412	363 m	No indicator species present
1392	No	56 J 231579 6615526	360 m	No indicator species present
1393	No	56 J 231529 6615694	354 m	No indicator species present
1394	No	56 J 231438 6615803	353 m	White box sub dominant
1395	No	56 J 231422 6615919	356 m	White box sub dominant
1396	Yes	56 J 231368 6615979	354 m	White box dominant
1397	Yes	56 J 231392 6616067	357 m	White box dominant

4.2 Results from assessment of Wallandilly, old offset property

Alison Martin reported locations where the vegetation mapping was changed with vague red circles on Cumberland maps but gave no indication what was changed, or what it was changed to, other than the total hectares shown in the table below.

Cumberland mapping			Greenloaning mapping		
Derived grassland	**Woodland CEEC**	**Total**	**Adjusted derived grassland**	**Adjusted Woodland CEEC**	**Total**
nil	**98.3 ha**	**98.3 ha**	**198 ha**	**170 ha**	**368.61 ha**

Wallandilly was inspected on the 17th of May 2014 to identify where Alison Martin found an extra 198 hectares of CEEC derived grassland and an extra 72 hectares of CEEC woodland. The locations of both those areas still remain a mystery. Because no explanation was provided where the additional hectares had been found it was difficult to be critical of the mapping. This assessment estimates that there would be no more than 70 ha of potential woodland CEEC present.

This assessment of the largest remnants on Wallandilly was conducted on foot to identify areas of potential CEEC. The dominance of White Cypress technically would exclude most of the remnant being CEEC, as White Box is sub dominant and not dominant or co-dominant.

Those sites considered to be grey areas because of White box sub dominance have still been recorded as potential CEEC but marked on the map as yellow circles indicating marginal CEEC. It is difficult to be confident what the naturally occurring community would have been without seeing the landscape 200 years ago. Observations of vegetation in the proximity suggests the stoney ridge soil type was White Cypress and Narrow leaf Ironbark with scattered White Box, not grassy Box – Gum woodland CEEC as claimed.

The mapping done by Cumberland was found to be wrong for the major remnant area as no Pilliga box were found. There was also a problem with the distinction between areas of improved pasture, cultivation, and ex cultivation. Cultivation was observed in paddocks not shown on Cumberland maps as cultivation.

It was difficult to see how the derived grassland areas have been described because the key colour is indistinct. It is likely that some of the contoured ex cultivation paddocks have been lumped into CEEC derived grassland, and cropping is occurring now in areas not mapped as cultivation.

Cypress pine regrowth is a massive problem, nearly all of the remnant area has thick young cypress regrowth, in places too thick to walk through. The management required to control White Cypress into perpetuity, and the very wishful intent to get it back to a grassy CEEC is seriously questionable, as it is highly likely that it was never dominantly grassy White box woodland.
Those areas on the northern and eastern aspect where White box is dominant in an open woodland form appears to be the result of selective clearing to retain large White box trees which has biased the description, throughout which thick White Cypress regeneration is coming up.

The section of the BMP (E1 below) that talks about ecological thinning of regrowth, fails to realise that 1,000's of hectares of the offsets will require manual thinning of White Cypress, and that management must be maintained until a mature stand of woodland like Leard State Forest is achieved which will be well over 100 years. The time and cost commitment for that duration must be fully costed and guaranteed to be funded. Without such thinning the habitat for threatened woodland species won't be enhanced and existing habitat will be degraded resulting in more net loss.

E.1 Ecological Thinning of Regrowth

Revegetation stands may require thinning at an early stage of the rehabilitation management time frame to encourage greater forest or woodland quantity and quality (Parks Victoria, 2005). Although tree stands have the ability to naturally thin out, it may take up to 50 years for the process to progress (McIntyre *et al.*, 2002). Strategic ecological thinning of selected trees may be required if areas are overstocked with same-age regrowth from the initial revegetation efforts (DSE (VIC), 2009a); the process can increase floristic diversity and structural complexity within a revegetated area and prevent poor or stunted growth of established plants (Bauhus *et al.*, 2001). It also promotes greater access of understorey species, typically herbaceous groundcovers, to resources such as space, light, and nutrients that may otherwise have been restricted by high tree densities. Thinning also increases the amount of woody debris in an area which can provide suitable habitat for ground-dwelling fauna and create microhabitats for flora (Forest Solutions, 2010).

E.1.1 Strategies

Large-scale thinning is currently being undertaken in Box-Ironbark communities in Victoria as part of long-term management and research into the viability of these forests and woodlands and as habtiat. Any thinning conducted in rehabilitation areas should refer to strategies implemented by Parks Victoria and the McIntosh Method for ecological thinning (Schirmer and Field, 2000; McIntosh, 2007; McIntosh, 2008). The process should result in *"thinning from 'above' and/or 'below' specifically designed to improve EVC benchmarks and biodiversity including enhancing and speeding the growth and development of the large tree component"* (McIntosh, 2007).

Box-Gum Woodland tree density of 30-40 mature trees per hectare is considered ecologically optimal (McIntyre *et al.*, 2002), with spacing (between mature trees) of half to two crown widths. Woodlands with lower densities were found to be of lower genetic diversity.

Ecological thinning principles in Box-Gum Woodland, as outlined in the 'Ecological thinning of eucalypts' Information sheet 15 from DSE (VIC) (2009a) include:

- Retain mature and senescing trees;
- Retain trees with hollows or that are occupied;
- 'Thin from below' by removing the youngest and smallest trees from a group;
- Thin so remaining trees are distributed as a patchy mosaic over the whole area;
- Retain all felled trees and branches for ground debris to form habitat.

How Cypress regrowth is managed will determine what enhancement of habitat is achieved on the ridge offset properties for both Boggabri and Maules Creek mines. Without ongoing thinning for 100 + years the supposed biodiversity benefits will not be achieved. The NRC has investigated the cost of ecological thinning in State Conservation Areas as between $ 320 to $ 575 per hectare over a seven year period. It could be expected that thinning Cypress to achieve a mature woodland or open forest over one hundred years will cost $1,000 per ha.

The area between Back Creek and Leard State Forest, which has not long been cleared, is dominantly Bimble box and White Cypress, it is not White box derived grassland. There is some CEEC of Yellow box and White box on the lower slopes north of Back Creek, again with thick White Cypress coming up through it.

The long term security of offsets on Wallandilly is questionable, as rumour suggests that beneath it is 400 million tonnes of coal.

Figure 4a. Map of Wallandilly from Cumberland Ecology BMP 2013

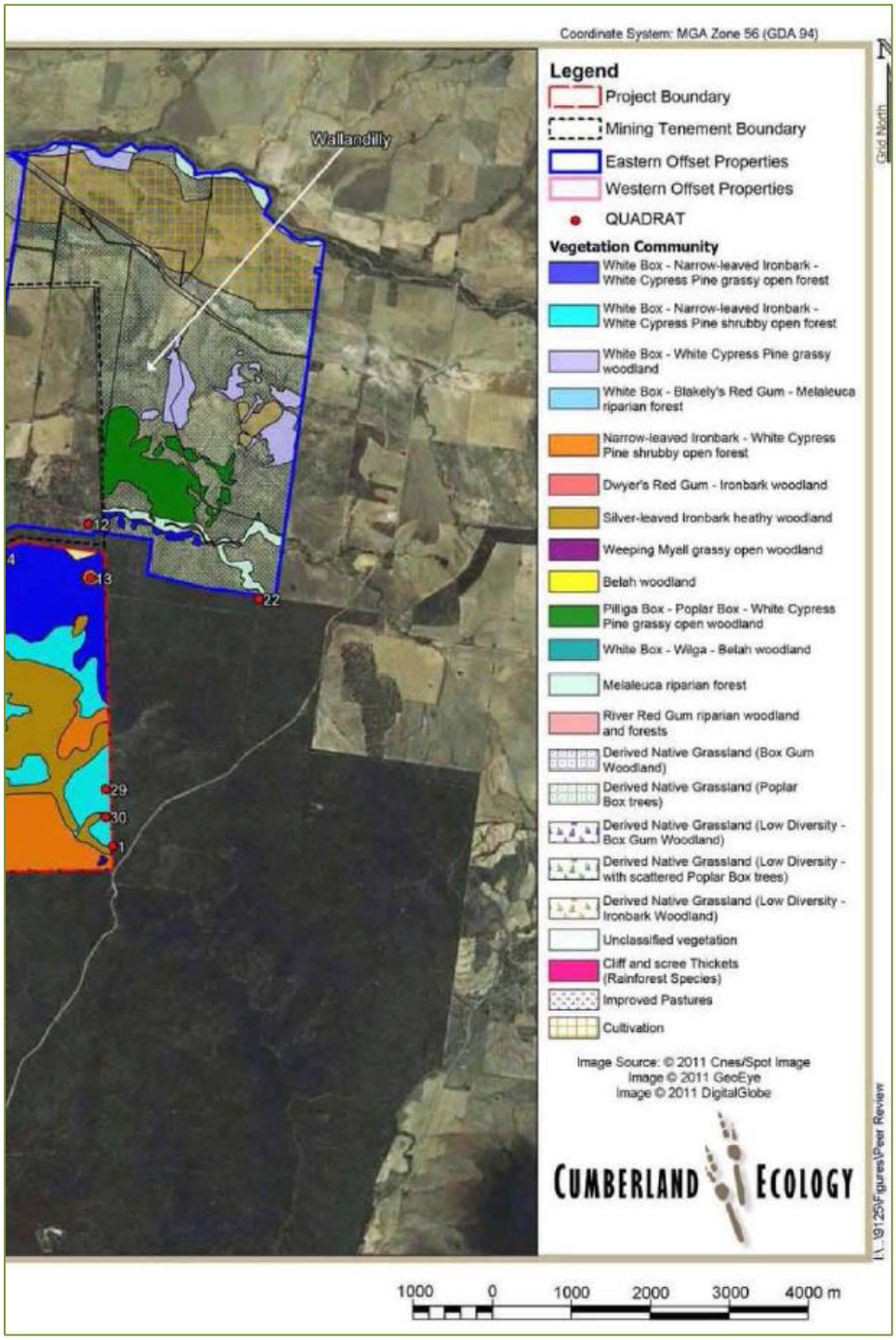
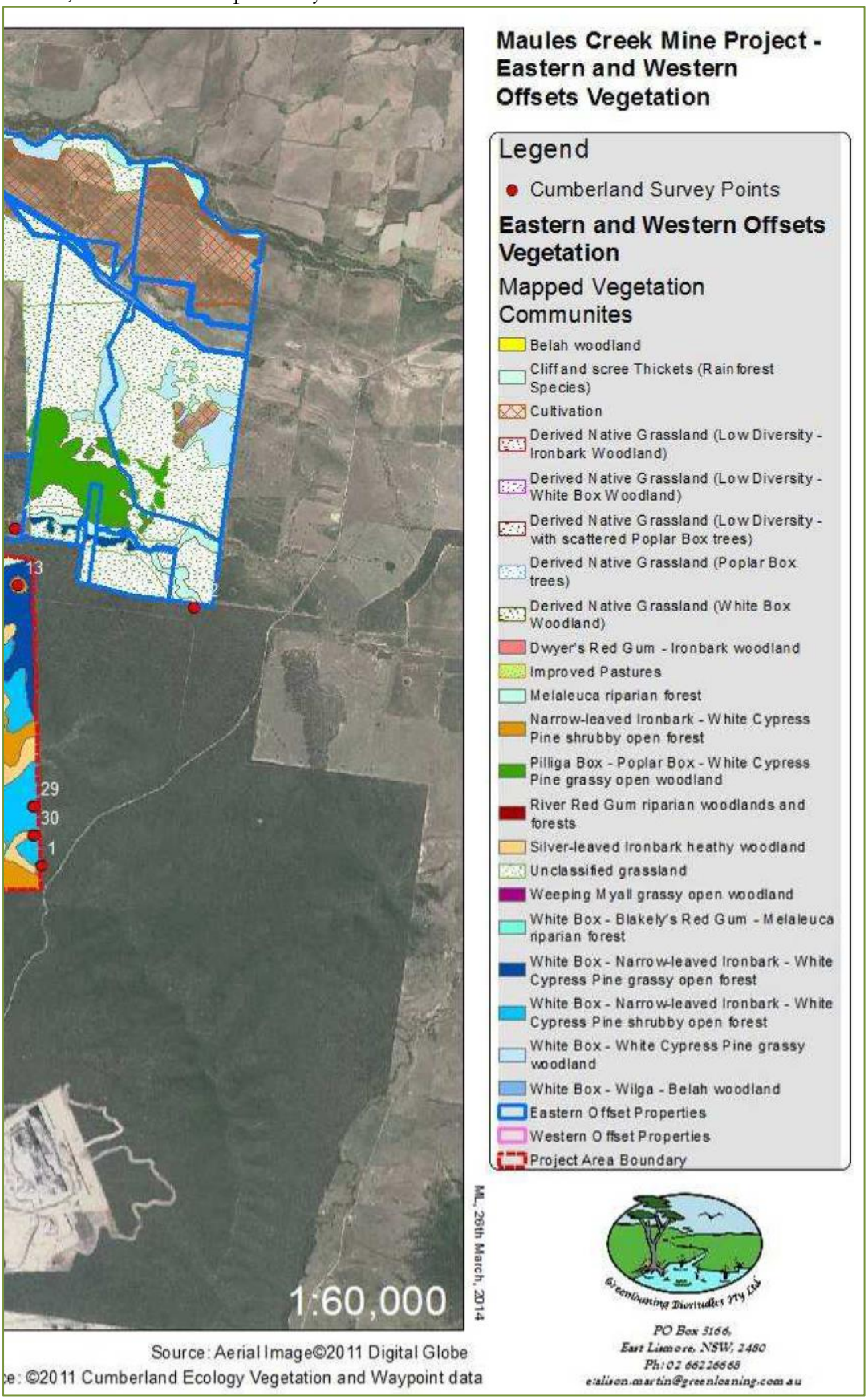


Figure 4b. Map of Wallandilly, another Cumberland mapping product used by Greenloaning. It is still difficult to discern what is considered derived grassland CEEC, extensive areas presently cultivated and ex cultivation are not shown.



The map below shows the locations where Greenloaning adjusted the vegetation mapping shown with a red circle. What vegetation she changed, and what to, and where, remains a mystery.

If such maps exist they must be made available to conservation groups, it is perplexing that the government department could review and approve the report without such detail.

Figure 4c. Map of Wallandilly, area remapped by Greenloaning.

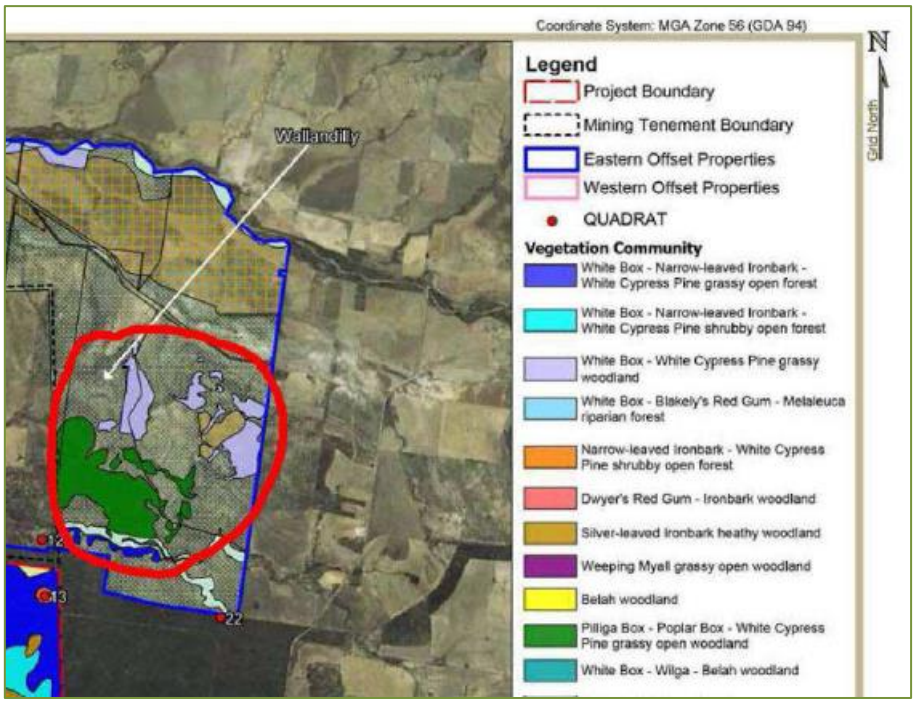


Figure 5. Enlarged view of the waypoints described, the red areas are potential Box – Gum woodland CEEC, and Yellow areas are marginal potential Box – Gum woodland CEEC where White box is sub dominant.

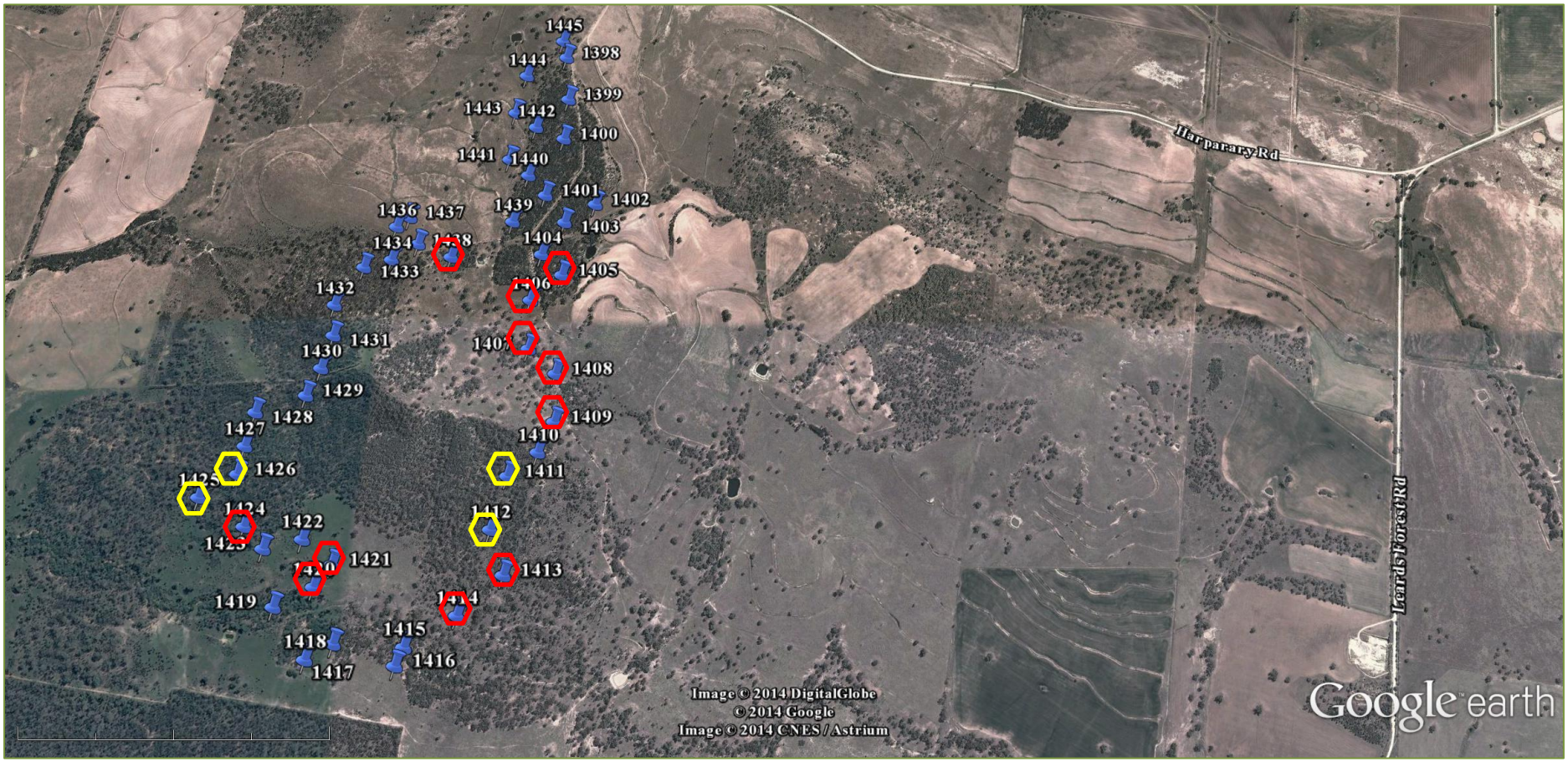


Table 3. Shows vegetation structure and dominant tree species at each waypoint location on Wallandilly

GPS referenced photos of the Wallandilly waypoints are available at drop box link
https://www.dropbox.com/sh/chgv4kia31kmxpz/AADht2_3etZ0H62vKqUZr9uca

Wallandilly Waypoint	Potential CEEC	Dominant tree species	Co-dominant tree	Sub dominant (few trees)	Structure	Age structure	Ground layer	Shrub layer	Approx. Area of CEEC
1398	No	Narrow-leaf Ironbark	White Cypress	Bimble box	Woodland	Immature	Grassy	Nil	
1399	No	White Cypress	Narrow-leaf Ironbark		Low open forest	regrowth < 20 cm dbh	Grassy	Nil	
1400	No	White Cypress	Narrow-leaf Ironbark	Silver-leaf Ironbark	Low open forest	regrowth < 20 cm dbh	Grassy	Nil	
1401	No	White Cypress	Silver-leaf Ironbark		Low open forest	regrowth < 20 cm dbh	Grassy	Nil	
1402	No	White Cypress	Narrow-leaf Ironbark	White box	Derived grassland	juvenile regrowth	Grassy	Nil	
1403	No	White Cypress	Silver-leaf Ironbark	Narrow-leaf Ironbark	Low open forest	regrowth < 20 cm dbh	Grassy	Nil	
1404	No	White Cypress	Silver-leaf Ironbark	Narrow-leaf Ironbark	Low open forest	regrowth < 20 cm dbh	Grassy	Nil	
1405	Yes	White Cypress	White box	Narrow-leaf Ironbark	Woodland	mixed but dom regrowth WC	Grassy	Nil	1 ha
1406	Yes	White box	White Cypress	Silver-leaf Ironbark	Open woodland	mixed but dom regrowth WC	Grassy	few Wilga	24 ha in total
1407	Yes	White box	White Cypress		Open woodland	mixed but dom regrowth WC	Grassy	few Wilga	as above
1408	Yes	White Cypress	White box	Silver-leaf Ironbark	Woodland	Immature	Grassy	few Wilga	as above

Wallandilly Waypoint	Potential CEEC	Dominant tree species	Co-dominant tree	Sub dominant (few trees)	Structure	Age structure	Ground layer	Shrub layer	Approx. Area of CEEC
1409	Yes	White box	White Cypress	Whitewood	Open woodland	mixed but dom regrowth WC	Grassy	few Wilga	as above
1410	No	White Cypress		Whitewood & White box	Woodland	Immature	Grassy	few Wilga	
1411	Yes	White Cypress		White box	Woodland	mixed but dom regrowth WC	Grassy	few Wilga	As below
1412	Yes	White Cypress		White box	Woodland	mixed but dom regrowth WC	Grassy	few Wilga	As below
1413	Yes	White Cypress	White box		Woodland	mixed but dom regrowth WC	Grassy	few Wilga	As below
1414	Yes	White Cypress	Yellow box		Woodland	mixed but dom regrowth WC	Grassy		33 ha approx.
1415	No	Bimble box	White Cypress	Rough-barked Apple & Blakely's Red gum	Woodland	Immature	Grassy		
1416	No	Bimble box	White Cypress		Derived grassland	juvenile regrowth	Grassy		
1417	No	Bimble box	White Cypress		Woodland	mixed but dom regrowth WC	Grassy		
1418	No	Bimble box	White Cypress		Derived grassland	juvenile regrowth	Grassy		
1419	No	Bimble box	White Cypress	Blakely's Red gum and Yellow box	Riparian woodland	mixed but dom regrowth WC	Grassy	Melaleuca riparian	
1420	Yes	Yellow box	White Cypress		Woodland	mixed but dom regrowth WC	Grassy		4ha
1421	Yes	Yellow box	White Cypress	Narrow-leaf Ironbark	Derived grassland	juvenile regrowth	Grassy		
1422	No	White Cypress	Narrow-leaf Ironbark	Silver-leaf Ironbark	Derived grassland	juvenile regrowth	Grassy		

Wallandilly Waypoint	Potential CEEC	Dominant tree species	Co-dominant tree	Sub dominant (few trees)	Structure	Age structure	Ground layer	Shrub layer	Approx. Area of CEEC
1423	No	White Cypress	Silver-leaf Ironbark		Derived grassland	juvenile regrowth	Grassy		
1424	Yes	White Cypress	White box	Yellow box	Woodland	mixed but dom regrowth WC	Grassy		2ha
1425	Yes	White Cypress		White box	Woodland	mixed but dom regrowth WC	Grassy		
1426	Yes	White Cypress		White box	Woodland	mixed but dom regrowth WC	Grassy		
1427	No	White Cypress	Narrow-leaf Ironbark	White box	Woodland	Immature	Grassy	few Wilga	
1428	No	White Cypress	Narrow-leaf Ironbark		Woodland	Immature	Grassy		
1429	No	Narrow-leaf Ironbark	White Cypress	White box	Woodland	Immature	Grassy		
1430	No	White Cypress	Narrow-leaf Ironbark		Woodland	mixed but dom regrowth WC	Grassy		
1431	No	Narrow-leaf Ironbark	White Cypress	Silver-leaf Ironbark	Woodland	Immature	Grassy		
1432	No	White Cypress	Narrow-leaf Ironbark	White box	Woodland	mixed but dom regrowth WC	Bare and grassy		
1433	No	White Cypress	Narrow-leaf Ironbark		Woodland	Immature	Bare and grassy		
1434	No	Narrow-leaf Ironbark	White Cypress		Low open forest	Immature	Bare and grassy		
1435	No	Narrow-leaf Ironbark	White box	White Cypress	Ex cultivation paddock	juvenile regrowth & single trees	Grassy	few Wilga	
1436	No	White box	White Cypress		Ex cultivation paddock	juvenile regrowth & single trees	Grassy	few Wilga and Quinine	

Wallandilly Waypoint	Potential CEEC	Dominant tree species	Co-dominant tree	Sub dominant (few trees)	Structure	Age structure	Ground layer	Shrub layer	Approx. Area of CEEC
1437	No			Silver-leaf Ironbark, White box, Bimble box	Ex cultivation paddock				
1438	Yes	White Cypress	White box		Woodland	mixed but dom regrowth WC	Grassy	few Wilga	
1439	No	White Cypress	Silver-leaf Ironbark	White box	Woodland	Immature	Grassy		
1440	No	White Cypress	Silver-leaf Ironbark	White box	Woodland	Immature	Grassy		
1441	No	Narrow-leaf Ironbark	White box	White Cypress	Ex cultivation paddock	juvenile regrowth & single trees	Grassy		
1442	No	Narrow-leaf Ironbark	White Cypress		Woodland	Immature	Grassy		
1443	No	Silver-leaf Ironbark	White Cypress		Ex cultivation paddock	juvenile regrowth & single trees	Grassy		
1444	No	Narrow-leaf Ironbark	White Cypress	White box	Derived grassland	Single trees	Grassy		
1445	No	Narrow-leaf Ironbark		White Cypress	Woodland	Immature	Grassy		
									< than 70ha total

Table 4. Grid References for Waypoints recorded on Wallandilly showing those with Potential CEEC vegetation

Wallandilly Waypoints	Potential CEEC	Zone Easting Northing in GDA	Altitude	Comments
1398	No	56 J 229222 6619865	333 m	No indicator species present
1399	No	56 J 229242 6619691	338 m	No indicator species present
1400	No	56 J 229238 6619529	340 m	No indicator species present
1401	No	56 J 229190 6619303	342 m	No indicator species present
1402	No	56 J 229369 6619271	340 m	White box sub dominant
1403	No	56 J 229266 6619199	346 m	No indicator species present
1404	No	56 J 229195 6619074	348 m	No indicator species present
1405	Yes	56 J 229272 6618998	342 m	White box co-dominant with White cypress
1406	Yes	56 J 229171 6618902	348 m	White box dominant
1407	Yes	56 J 229180 6618724	354 m	White box dominant
1408	Yes	56 J 229279 6618636	354 m	White box co-dominant with White cypress
1409	Yes	56 J 229288 6618467	356 m	White box dominant
1410	No	56 J 229243 6618360	355 m	White box sub dominant
1411	Yes	56 J 229150 6618277	345 m	White box sub dominant
1412	Yes	56 J 229110 6618097	329 m	White box sub dominant
1413	Yes	56 J 229166 6617950	320 m	White box co-dominant
1414	Yes	56 J 229031 6617817	313 m	Yellow box co-dominant
1415	No	56 J 228874 6617715	307 m	Blakely's Red gum sub dominant
1416	No	56 J 228852 6617656	310 m	No indicator species present
1417	No	56 J 228649 6617720	308 m	No indicator species present
1418	No	56 J 228567 6617668	311 m	No indicator species present
1419	No	56 J 228443 6617830	304 m	Blakely's Red gum sub dominant
1420	Yes	56 J 228562 6617897	313 m	Yellow box dominant
1421	Yes	56 J 228612 6617971	317 m	Yellow box dominant
1422	No	56 J 228504 6618051	320 m	No indicator species present
1423	No	56 J 228382 6618017	315 m	No indicator species present
1424	Yes	56 J 228309 6618088	317 m	Yellow box sub dominant

Wallandilly Waypoints	Potential CEEC	Zone Easting Northing in GDA	Altitude	Comments
1425	Yes	56 J 228145 6618181	322 m	White box sub dominant
1426	Yes	56 J 228260 6618262	341 m	White box sub dominant
1427	No	56 J 228269 6618358	357 m	White box sub dominant
1428	No	56 J 228286 6618476	367 m	No indicator species present
1429	No	56 J 228447 6618539	381 m	White box sub dominant
1430	No	56 J 228484 6618637	381 m	No indicator species present
1431	No	56 J 228510 6618756	374 m	No indicator species present
1432	No	56 J 228499 6618868	375 m	White box sub dominant
1433	No	56 J 228582 6619011	363 m	No indicator species present
1434	No	56 J 228675 6619041	360 m	No indicator species present
1435	No	56 J 228760 6619104	366 m	White box co-dominant
1436	No	56 J 228677 6619168	365 m	White box dominant
1437	No	56 J 228720 6619205	365 m	Ex-cultivation paddock
1438	Yes	56 J 228881 6619057	358 m	White box co-dominant
1439	No	56 J 229083 6619197	348 m	White box sub dominant
1440	No	56 J 229123 6619380	339 m	White box sub dominant
1441	No	56 J 229050 6619441	339 m	Ex-cultivation paddock
1442	No	56 J 229134 6619574	333 m	No indicator species present
1443	No	56 J 229055 6619630	333 m	Ex-cultivation paddock
1444	No	56 J 229082 6619785	326 m	White box sub dominant derived grassland
1445	No	56 J 229204 6619934	331 m	No indicator species present

4.3 Result from assessment of Wongala new offset property

Excerpts taken from Alison Martins reports

3.3.7 *Wongala*

Locations mapped on a preliminary basis as CEEC by Cumberland Ecology, and from which plot data and some rapid assessment data was collected for the purposes of this review, conformed to the definition of the CEEC. Owing to the breaking of drought conditions in the locality of the Wongala Offset property, a greater extent of ground cover growth and flowering material was evident than was observed on all other offset properties during the review process (refer to photographs in Appendix D and data summaries provided in Appendix E). The majority of areas mapped as CEEC conformed to the definition of the Box-Gum Woodland, with woodland structure well represented, but some of the more open areas supporting only scattered trees conformed more to Derived Native Pasture. Both Yellow Box and White Box were dominant over most of the central ridgeline area, the former in the northern, higher section of the site and the latter in the lower sectors.

An additional area of *White Box Grassy Woodland* was identified on the far eastern side of the Wongala property during the assessment surveys, with plot data confirming that this woodland and the adjoining grassland, both conform to the CEEC definition (refer to photographs in Appendix D and data summaries provided in Appendix E). This area adjoins more extensive areas of the same community along the western boundary and through the south-western sector of the Wirradale property that forms part of the Northern Offsets. The extent of the amendments to the CEEC required overall is indicated in Table 3.6 below.

Table 3.6 COMPARISON OF ORIGINAL QUANTITIY OF TOTAL CEEC FOR THE WONGALA OFFSET CALCULATED BY CUMBERLAND ECOLOGY AND TOTAL CALCULATED AFTER MAPPING AMENDMENTS CONDUCTED BY GREENLOANING

Quantity of Box Gum Woodland mapped by Cumberland	Quantity of Box-Gum Woodland found to be present by Greenloaning	Quantity of Derived Native Grassland Woodland mapped by Cumberland	Quantity of Derived Native Grassland found to be present by Greenloaning
274.00	219.18	00.00	63.74

Overall, only relatively minor refinements to the mapped CEEC boundaries for the Wongala property are required. The locations where amendments to the mapping of the CEEC are required are indicated in Figure F.6, Appendix F. More comprehensive details on the extent of amendments required are provided in Table G.1, Appendix G.

vi. Wongala

Community mapping of the Wongala property appeared to be relatively accurate, likely to have been facilitated by the comparatively open nature and moderate terrain of the central ridge line and clear visibility to adjoining areas from a number of locations. Some more open areas were identified as potentially warranting mapping refinements to define areas of Derived Native Grassland rather than the Box-Gum Woodland.

Result from NWES assessment

The high elevation section of Wongala was walked on the 18th of May 2014, see map Figure 3a for area covered. Martin remapped the derived grassland CEEC to 63 ha and the CEEC woodland to 219 ha, a total of 282 ha. This assessment estimated the total area of woodland and open woodland /derived grassland to be approximately 270 ha within which there are areas of Apple box and Stringybark dominance that do not fit the CEEC.

Again there is no detail description of what vegetation types were changed in the red circles, and there is no map to show the new boundaries of the vegetation types to be critical of them.

This survey found that there are significant areas of Apple Box in the area Cumberland Ecology mapped as White box CEEC, Martin may have taken those out in her remapping, but her circles don't align with what was observed in the field.

A major mistake in the mapping of Wongala is the big block of vegetation on the eastern boundary mapped by Cumberland as Shrubby Pine – Ironbark – White box forest, it is nothing like that, as it is Stringybark, Apple box, with sub dominant Blakely's Red gum and Yellow box shrubby open forest, the same community in Wirradale that Cumberland called Box – Gum CEEC.

The other issue is the open woodland spacing of much of it, being too sparse to meet the woodland definition. Without seeing Martin's updated maps it is unknown how she remapped it, could have been derived grassland or woodland, if it was woodland it would be false. It is unlikely that open woodland figures in the definition of the CEEC, seems it has to be either woodland or derived grassland.

Another issue is that the narrow remnants mapped as Manna Gum by Cumberland don't occur, they are dominantly Stringybark and Apple box with very sparse Manna Gum.

Another issue with Wongala is the immature age of the Yellow box, Blakely's Red gum in the high altitude areas, it is dominantly under 25cm dbh and probably only 25 – 30 years old, there are no mature or hollow trees over the majority of that open area.

Wongala appears to be well managed from a grazing point of view, there are few weeds of Sweet Briar and Blackberry and little natural regeneration apart from the 25 year old regrowth. The pastures are highly likely to be well fertilised, the cattle were fat and ground cover was good. Feral pigs were abundant, as they are in all the northern offset properties.

The National Park boundary vegetation is very different to that in Wongala, all open forest and a mix of species, nothing like that present in Wongala with the dominance of Yellow box and Blakely's Red gum seen in the cleared land. It is highly likely that Wongala was never a woodland, and was more like the open forest in the National Park.

Figures 6a & b. Wongala vegetation mapping by Cumberland Ecology

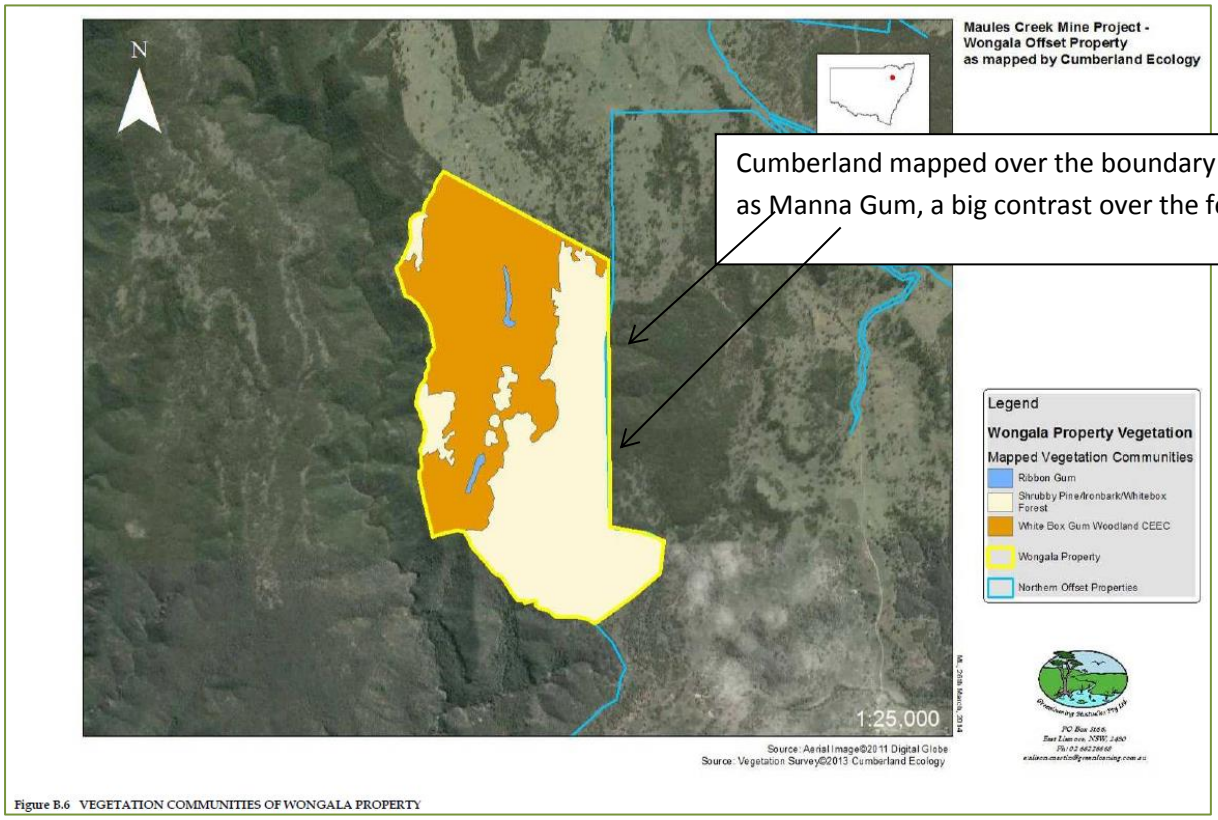


Figure B.6 VEGETATION COMMUNITIES OF WONGALA PROPERTY

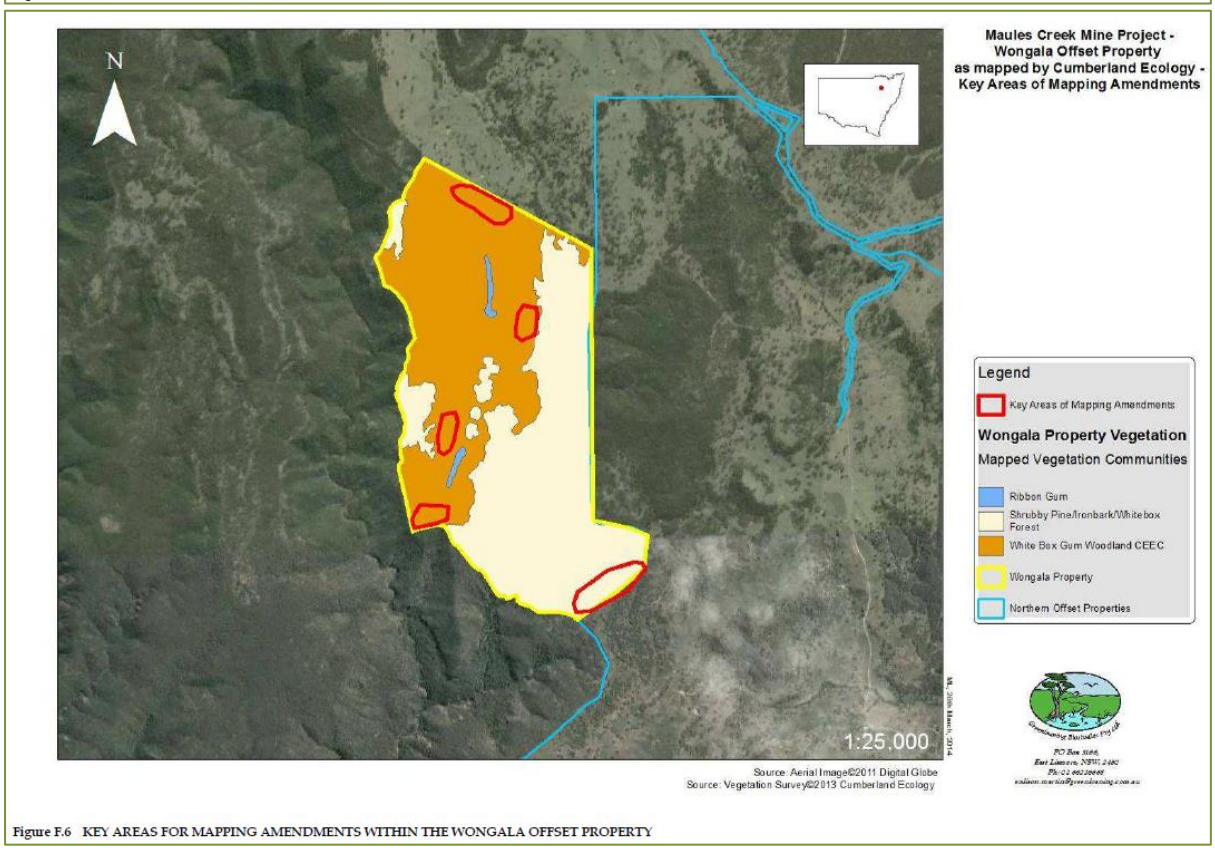


Figure F.6 KEY AREAS FOR MAPPING AMENDMENTS WITHIN THE WONGALA OFFSET PROPERTY

Figure 6c. Greenloaning survey sites on Wongala –note no numbers to identify sites

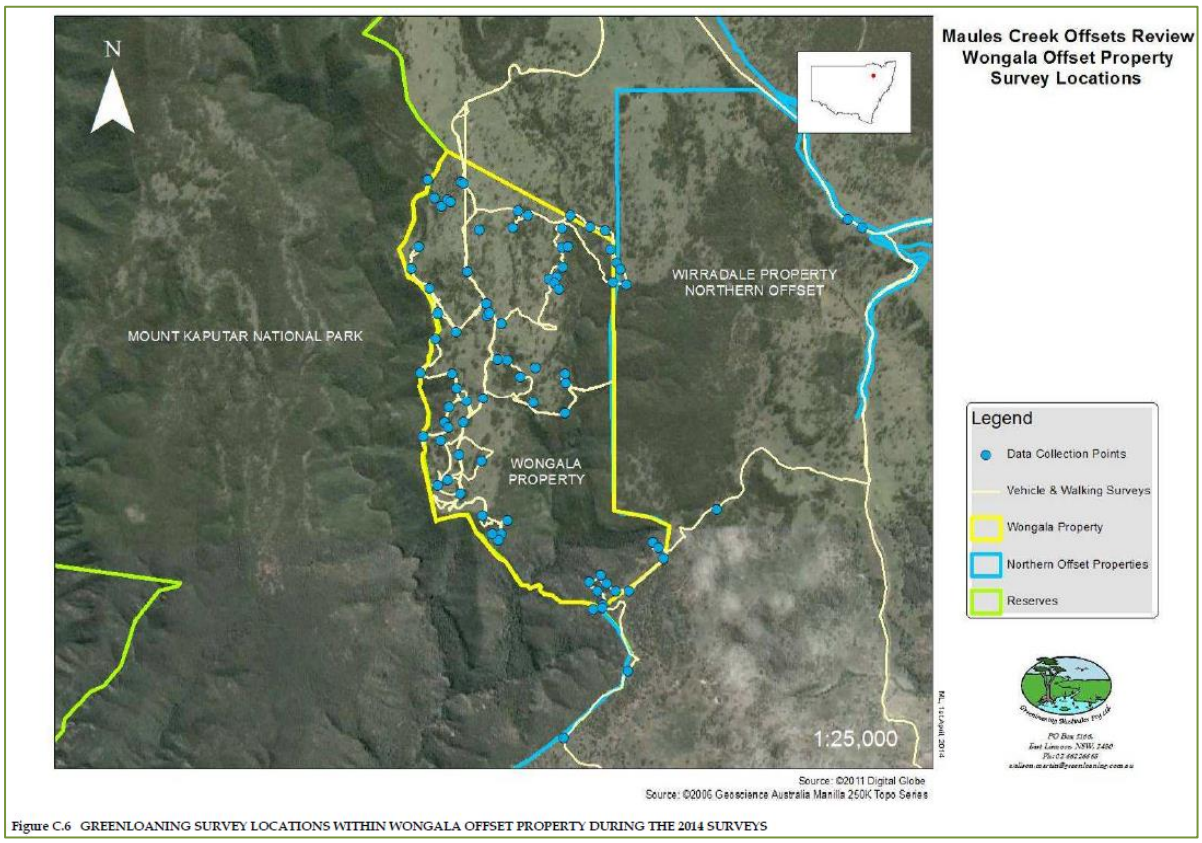


Figure C.6 GREENLOANING SURVEY LOCATIONS WITHIN WONGALA OFFSET PROPERTY DURING THE 2014 SURVEYS

Figure 7. Northern offsets mapping from Cumberland Ecology BMP 2013

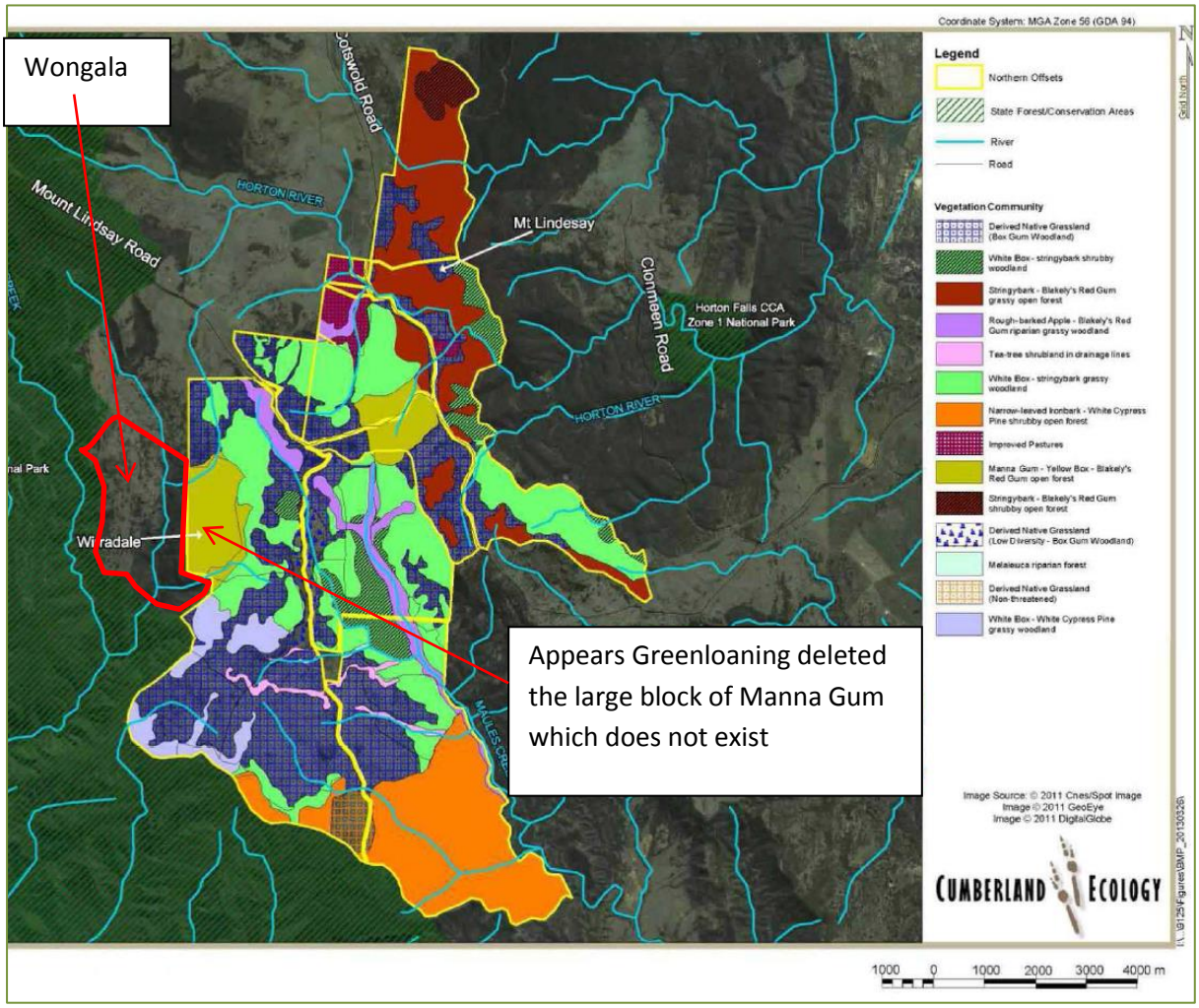


Figure 8a. Waypoints assessed and described on the property Wongala 18th May 2014

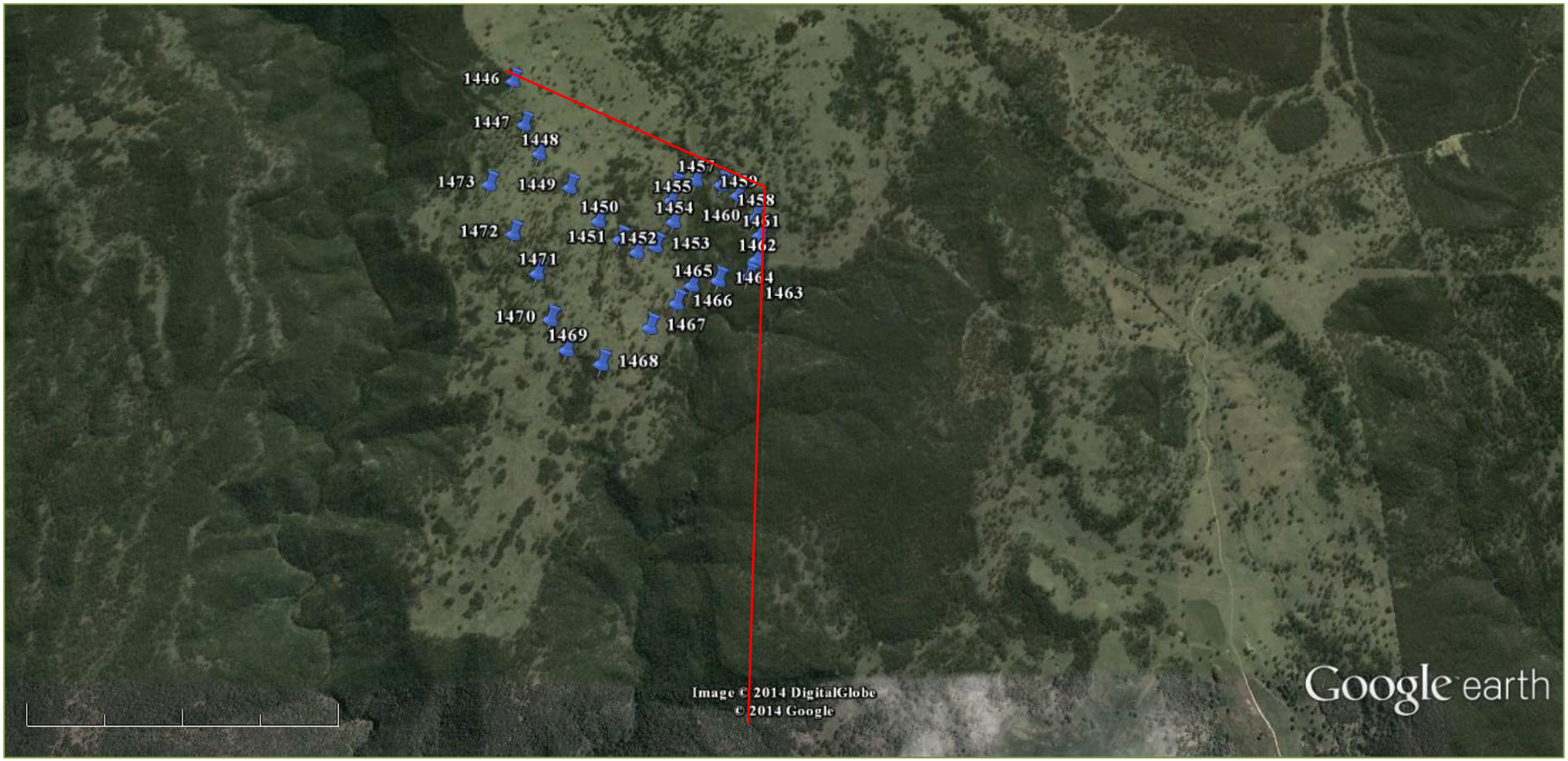


Figure 8b. Enlarged view of the waypoints assessed and described on the property Wongala 18th May 2014, note extent of open woodland / derived grassland, red circles show sites considered potential CEEC, Apple box and Stringybark dominated the majority of the other waypoints

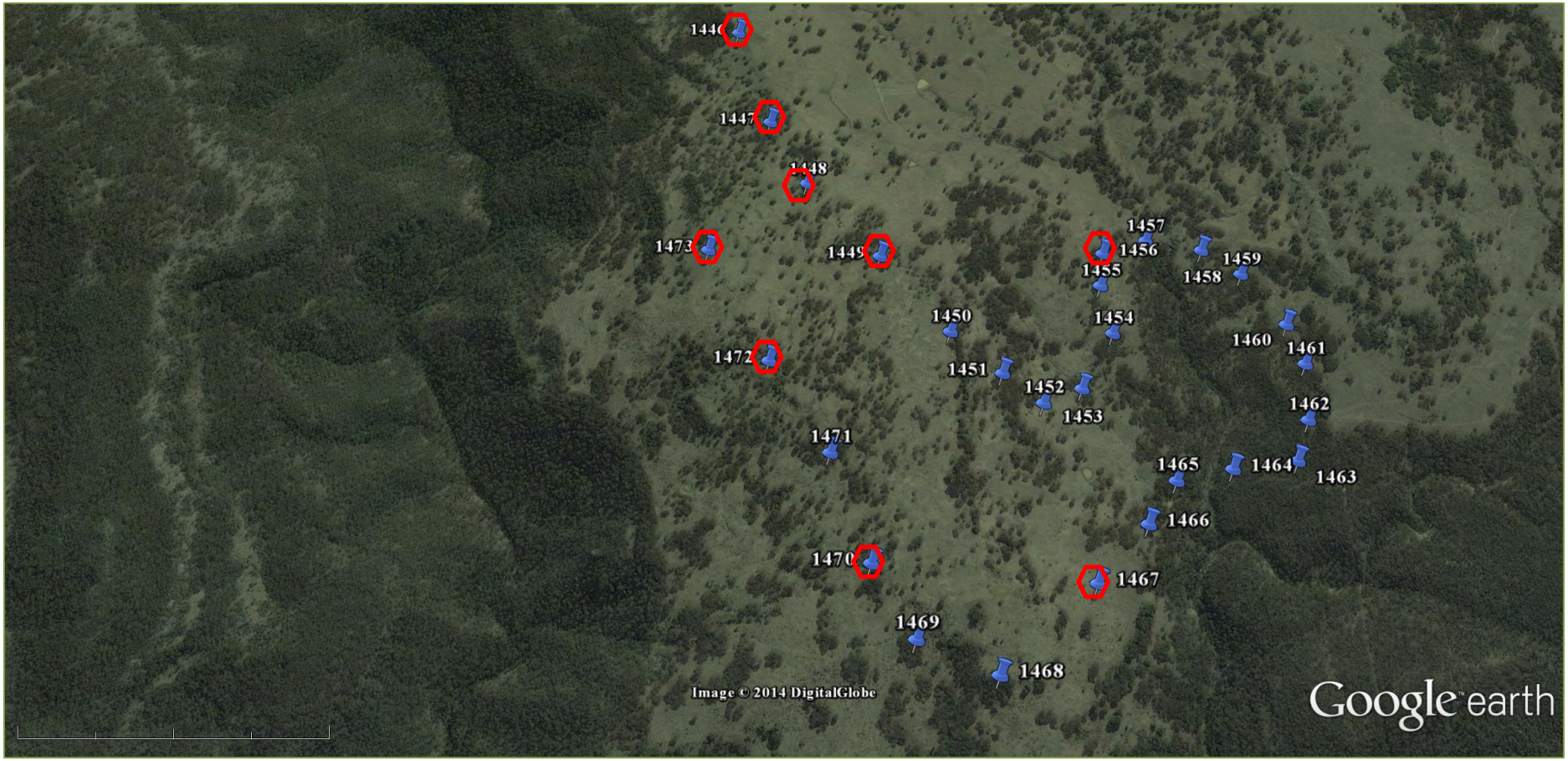


Table 5. Shows vegetation structure and dominant tree species at each waypoint location on Wongala

GPS referenced photos of the Wongala waypoints are available at drop box link
https://www.dropbox.com/sh/avo58hajcpv2oxh/AAB7k8C5b-aZlekUhP4fPEjAa

Wongala Waypoint	Potential CEEC	Dominant tree species	Co-dominant tree	Sub dominant (few trees)	Structure	Age structure	Ground layer	Shrub layer
1446	Yes	Yellow box	Blakely's Red gum		Derived grassland	Regrowth < 25cm dbh	weedy Stinking Rodger	Nil
1447	Yes	Yellow box	Blakely's Red gum		Woodland	Regrowth < 25cm dbh	Grassy	few Sweet Briar weeds
1448	Yes	Yellow box	Blakely's Red gum		Woodland	Regrowth < 25cm dbh	Grassy	few Sweet Briar weeds
1449	Yes	Yellow box		White box	Woodland	Regrowth < 25cm dbh	Grassy	
1450	No	Yellow box	Blakely's Red gum	Silvertop Stringybark	Open forest	Immature	Litter and grass	Shrubby > 30% cover
1451	No	Apple box			Woodland	Immature	Grassy	Patchy shrub layer
1452	No	Apple box			Open woodland/derived grassland	Immature	Grassy	few Sweet Briar weeds
1453	No	Apple box			Woodland	Immature	Grassy	few Sweet Briar weeds
1454	No	Apple box			Woodland	Immature	Grassy	few Sweet Briar weeds
1455	No	Apple box	Rough-barked Apple		Woodland / derived grassland	Immature	Grassy	
1456	Yes	Rough-barked Apple	White box	Yellow box & Blakely's Red gum	woodland	Immature	Grassy	
1457	No	Apple box	Rough-barked Apple	Blakely's Red gum & Stringybark	Woodland	Immature	Grassy	Patchy shrub layer
1458	No	Apple box			Woodland	Mixed age	Grassy	

Wongala Waypoint	Potential CEEC	Dominant tree species	Co-dominant tree	Sub dominant (few trees)	Structure	Age structure	Ground layer	Shrub layer
1459	No	Apple box			Woodland	Mixed age	Grassy	
1460	No	Apple box			Woodland	Mixed age	Grassy	
1461	No	Apple box	Silvertop Stringybark	Yellow box & Blakely's Red gum	Woodland	Mixed age	Grassy	Patchy shrub layer
1462	No	Silvertop Stringybark	Rough-barked Apple	Yellow box & Apple box	Open forest	Immature	Litter and grass	Shrubby > 30% cover
1463	No	Silvertop Stringybark	Yellow box & Blakely's Red gum	White Cypress	Open forest	Immature	Litter and grass	Shrubby > 30% cover
1464	No	Silvertop Stringybark	Yellow box & Blakely's Red gum		Open forest	Immature	Litter and grass	Shrubby > 30% cover
1465	No	Silvertop Stringybark	Apple box	Manna Gum	Open forest	Mixed age	Grassy	Patchy shrub layer
1466	No	Apple box	Silvertop Stringybark		Woodland	Mixed age	Grassy	
1467	Yes	White box	Apple box		Derived grassland	Immature	Grassy	few Sweet Briar weeds
1468	No	Silvertop Stringybark	Rough-barked Apple		Open forest	Mixed age	Litter and grass	Shrubby > 30% cover
1469	No	Apple box			Woodland	Immature	Grassy	few Sweet Briar weeds
1470	Yes	Yellow box	Blakely's Red gum		Woodland	Regrowth < 25cm dbh	Grassy	
1471	No	Apple box		Yellow box	Woodland	Immature	Grassy	
1472	Yes	Blakely's Red gum			Woodland	Regrowth < 25cm dbh	Grassy	
1473	Yes	Yellow box	Rough-barked Apple	Kurrajong	Open woodland	Immature	Grassy	few Sweet Briar weeds

Table 6. Grid References for Waypoints recorded on Wongala showing those with Potential CEEC vegetation

Wongala	Potential CEEC	Zone Easting Northing in GDA	Altitude	Comments
1446	Yes	56 J 233021 6639976	941 m	Yellow box dominant – Blakely's co-dominant
1447	Yes	56 J 233117 6639679	934 m	Yellow box dominant – Blakely's co-dominant
1448	Yes	56 J 233219 6639488	930 m	Yellow box dominant – Blakely's co-dominant
1449	Yes	56 J 233409 6639275	925 m	Yellow box dominant – White box sub-dominant
1450	No	56 J 233582 6639064	914 m	Shrubby > 30% cover
1451	No	56 J 233706 6638953	902 m	Apple box dominant
1452	No	56 J 233802 6638876	892 m	Apple box dominant
1453	No	56 J 233897 6638917	888 m	Apple box dominant
1454	No	56 J 233984 6639069	890 m	Apple box dominant
1455	No	56 J 233963 6639203	896 m	Apple box dominant
1456	Yes	56 J 233976 6639295	894 m	Rough-barked Apple dominant – White box co-dominant
1457	No	56 J 234089 6639337	884 m	Apple box dominant – Blakely's Red gum sub dominant
1458	No	56 J 234228 6639311	890 m	Apple box dominant
1459	No	56 J 234321 6639245	896 m	Apple box dominant
1460	No	56 J 234417 6639104	894 m	Apple box dominant
1461	No	56 J 234449 6638997	897 m	Apple box dominant – Stringy bark co-dominant
1462	No	56 J 234436 6638847	890 m	Silvertop Stringy dominant– shrub layer > 30% cover
1463	No	56 J 234396 6638742	876 m	Silvertop Stringy dominant– shrub layer > 30% cover
1464	No	56 J 234240 6638717	859 m	Silvertop Stringy dominant– shrub layer > 30% cover
1465	No	56 J 234104 6638684	858 m	Silvertop Stringy dominant – Apple box co-dominant
1466	No	56 J 234028 6638575	874 m	Apple box dominant – Silvertop Stringy co-dominant
1467	Yes	56 J 233900 6638431	893 m	White box dominant – Apple box co-dominant
1468	No	56 J 233668 6638217	911 m	Silvertop Stringy dominant– shrub layer > 30% cover
1469	No	56 J 233484 6638292	906 m	Apple box dominant
1470	Yes	56 J 233384 6638466	912 m	Yellow box dominant – Blakely's co-dominant
1471	No	56 J 233287 6638735	916 m	Apple box dominant – Yellow box sub dominant
1472	Yes	56 J 233134 6638973	935 m	Blakely's Red gum dominant
1473	Yes	56 J 232971 6639282	939 m	Yellow box dominant – Rough-barked Apple sub dominant

4.4 Comments on Greenloaning corrections to Cumberland mapping of Wirradale and Mt Lindesay

Again there are no detailed descriptions of what the vegetation in the areas circled below has been changed to, or how the mapping of the extent of the CEEC has changed, other than the total hectare figures presented in Table G1. in the Dec 2013 and Table A.3 presented in the April 2014 report.

Updated tables of vegetation types and areas of each type were essential to inform how the changes affected the area of each vegetation type. The field assessment of these two properties by the three independent ecologists found the majority of the vegetation types were wrong. Martin would have had to correct all the vegetation types and remap their extent to come up with the figures presented. Why has that information not been provided to the public?

Table 7. From G.1 Greenloaning final offset outcome Report April 2014

Table G.1 COMPARITIVE SUMMARY TABLE OF ORIGINAL OFFSET ESTIMATES AND FINAL OFFSET OUTCOM

OFFSETS	ORIGINAL ESTIMATES for Box Gum Woodland and Derived Grasslands provided (ha)*			VARIATIONS for Box Gum Woodland and Derived Grasslands provided (ha) (Derived from Greenloaning Assessments)				ADJUSTED TOTAL (Derived from Greenloaning Assessments)			
Property	Derived Grassland	Box-Gum Woodland	Total area of offsets (ha) (Combined)	Positive Variation (Derived Grassland)	Positive Variation (Box-Gum Woodland)	Negative Variation (Derived Grassland)	Negative Variation (Box-Gum Woodland)	Adjusted Total Derived Grassland	Adjusted Total Box-Gum Woodland	Adjusted Total Area of Offsets	
Northern Offsets (A)											
Mt Lindesay	577.30	1458.60	2035.90	7.34	21.50	16.02	361.83	568.62	1118.27	1686.89	
Wirradale	818.70	1517.10	2335.80		107.99	90.47	130.70	728.23	1494.39	2222.62	
Western Offsets (A)											
Kelso	0.00	16.50	16.50					0.00	16.50	16.50	
Louenville	0.00	151.00	151.00					0.00	151.00	151.00	
Olivedeen	0.00	0.00	0.00					0.00	0.00	0.00	
Teston (sth)	18.60	63.40	82.00		14.60			18.60	78.00	96.60	
Velyama	71.60	37.80	109.40	36.00			36.00	107.60	1.80	109.40	
Eastern Offsets (A)											
Blue Range	0.00	21.70	21.70					0.00	21.70	21.70	
Cattle Plain	0.00	36.00	36.00	6.40			28.00	6.40	8.00	14.40	
Teston (nth)	0.00	57.80	57.80	0.84	0.00	0.00	1.88	0.84	55.92	56.76	
Tralee	0.00	17.20	17.20	0.00	0.43	0.00	3.68	0.00	13.95	13.95	
Wallandilly	0.00	98.30	98.30	198.06	107.00		34.75	198.06	170.55	368.61	
Warriahdool	0.00	64.50	64.50					0.00	64.50	64.50	
Shared Offset (B)											
	0.00	5.60	5.60					0.00	5.60	5.60	
SUBTOTAL	1486.20	3545.50	5031.70	248.64	251.52	106.49	596.85	1628.35	3200.18	4828.53	
Additional Properties											
Oakleigh/ Onavale (C)	49.00	111.00	160.00	5.37	0.87	0.00	19.33	54.37	92.54	146.91	
Bimbooria (D)	40.00	169.00	209.00	4.34	30.02	14.85	48.80	29.48	150.23	179.71	
Wongala (E)	0.00	274.00	274.00	63.74	15.39	0.00	70.21	63.74	219.18	282.92	
Roseglass (F)	97.00	262.00	359.00	83.49	110.44	94.65	236.42	85.84	136.02	221.86	
SUBTOTAL	186.00	816.00	1002.00	156.93	156.72	109.50	374.76	233.44	597.96	831.40	
TOTAL	1672.20	4361.50	6033.70	405.57	408.24	215.99	971.60	1861.79	3798.14	5659.93	
										Areas Required under Approval Conditions	5532.00
										Additional Area Provided Exceeding Required Amount	127.93

4.4.1 Summary of Greenloaning changes to vegetation mapping of Wirradale and Mt Lindesay

Mt Lindesay offset variations presented in Greenloaning Dec 2013 report

Cumberland mapping			Greenloaning mapping		
Derived grassland CEEC	Woodland CEEC	Total	Adjusted derived grassland	Adjusted Woodland CEEC	Total
577ha	1458 ha	2035ha	584 ha	1204 ha	1789 ha

Derived grassland increase of 7 ha
Woodland reduction of 254 ha

Mt Lindesay offset variations presented in Greenloaning April 2014 report

Cumberland mapping			Greenloaning mapping		
Derived grassland CEEC	Woodland CEEC	Total	Adjusted derived grassland	Adjusted Woodland CEEC	Total
577ha	1458 ha	2035ha	568 ha	1118 ha	1686 ha
					1792 in BMP

Derived grassland reduction of 9 ha
Woodland reduction of 340ha

Wirradale offset variations presented in Greenloaning Dec 2013 report

Cumberland mapping			Greenloaning mapping		
Derived grassland CEEC	Woodland CEEC	Total	Adjusted derived grassland	Adjusted Woodland CEEC	Total
818ha	1517 ha	2335 ha	815 ha	1424 ha	2240 ha

Derived grassland reduction of 3 ha
Woodland reduction of 93ha

Wirradale offset variations presented in Greenloaning April 2014 report

Cumberland mapping			Greenloaning mapping		
Derived grassland CEEC	Woodland CEEC	Total	Adjusted derived grassland	Adjusted Woodland CEEC	Total
818ha	1517 ha	2335 ha	728 ha	1494 ha	2222 ha
			1403ha in BMP		2887 in BMP

Derived grassland reduction of 90 ha
Woodland reduction of 23ha

The map below showing red circled areas where vegetation was remapped was taken from the Greenloaning Dec 2013 report, this map was not updated or presented again in the April 2014 report, it should have been, as there were more adjustments referred to in the April 2014 report.

To come up with the results which Martin has reported in Table G1. "Comparative Summary of Original Offset Estimates and Final Offset Outcomes" would have required that she remap the vegetation to measure areas for each vegetation type, and re-determine what areas fit the definition of the CEEC.

To do that she would have had to know the dominance of each canopy species at each survey point, yet she provides no evidence to show that she has done that. It appears to be a cover up to conceal the detail of the results, probably because it would have shown how blatantly incompetent the Cumberland Ecology reports have been.

The areas with black borders are those independently assessed and found not to be dominantly Box – Gum CEEC woodland or derived grassland, at least 900 ha of that area does not fit the description of the CEEC, as it is not dominated or co-dominated by indicator species and it is naturally an open forest community.

Figure 9. Areas of mapping changed by Greenloaning in red, areas in black are additional areas assessed by NWES – Envirofactor & Hunter

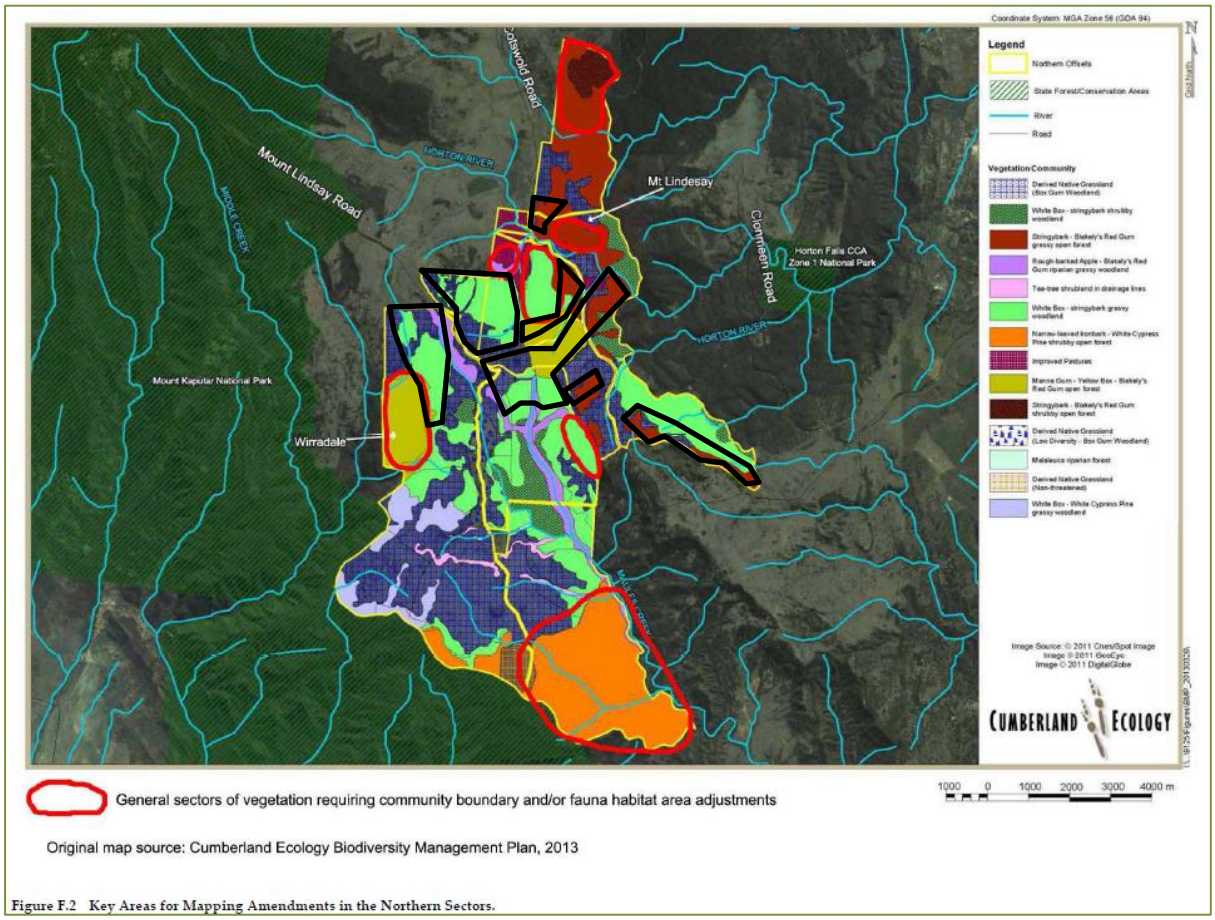


Figure F.2 Key Areas for Mapping Amendments in the Northern Sectors.

Inspection of the Flora Atlas database found the area of the Northern offsets has been surveyed by Office of Environment and Heritage State-wide Vegetation Mapping Program, their plot data further validates that Cumberland and Greenloaning mapping is incorrect.

The fact that both State and Federal departments failed to review that OEH database, even though it was in draft form, was wilful ignorance.

Figure 10. Map of OEH flora plots in the vicinity of Mt Lindesay, Wirradale and Wongala offset properties

Yellow dots are Office of Environment and Heritage flora survey plots, Red dot lines are NWES survey plots in Wongala, Blue dot lines are Hewlet Hunter (Dr John Hunter) survey plots on offset properties Wirradale and Mt Lindesay

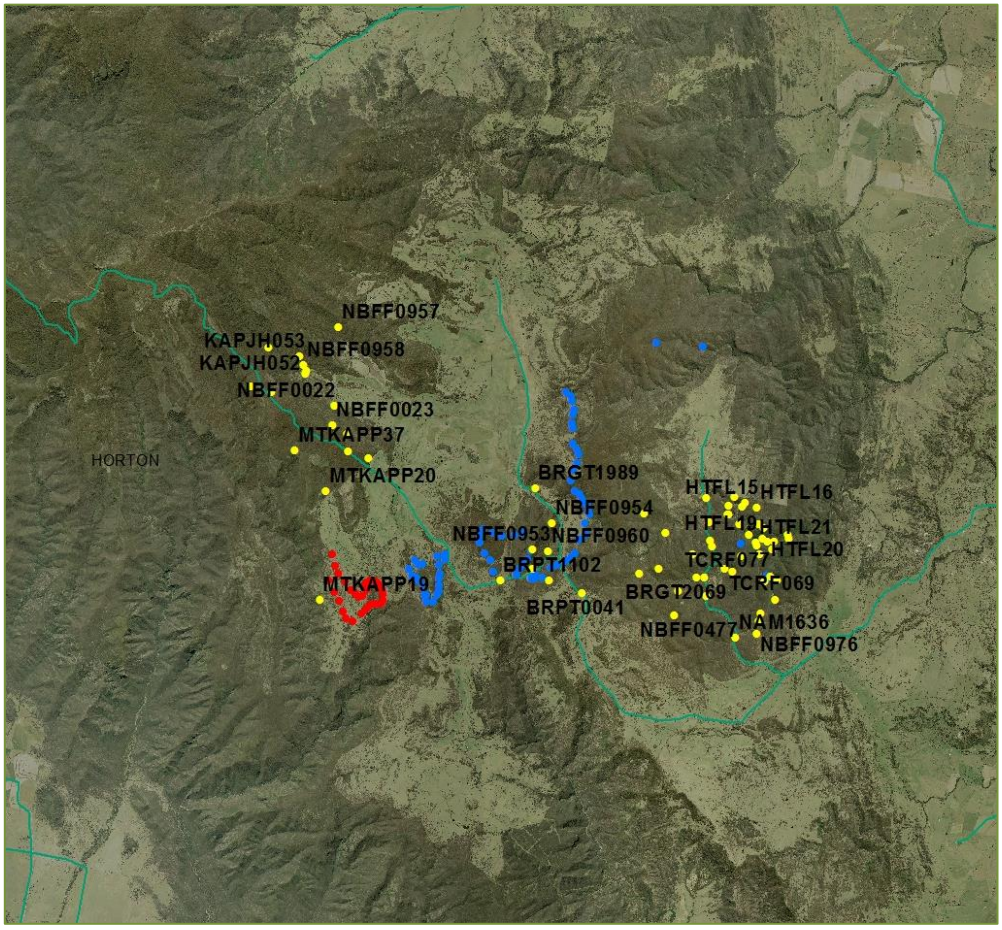
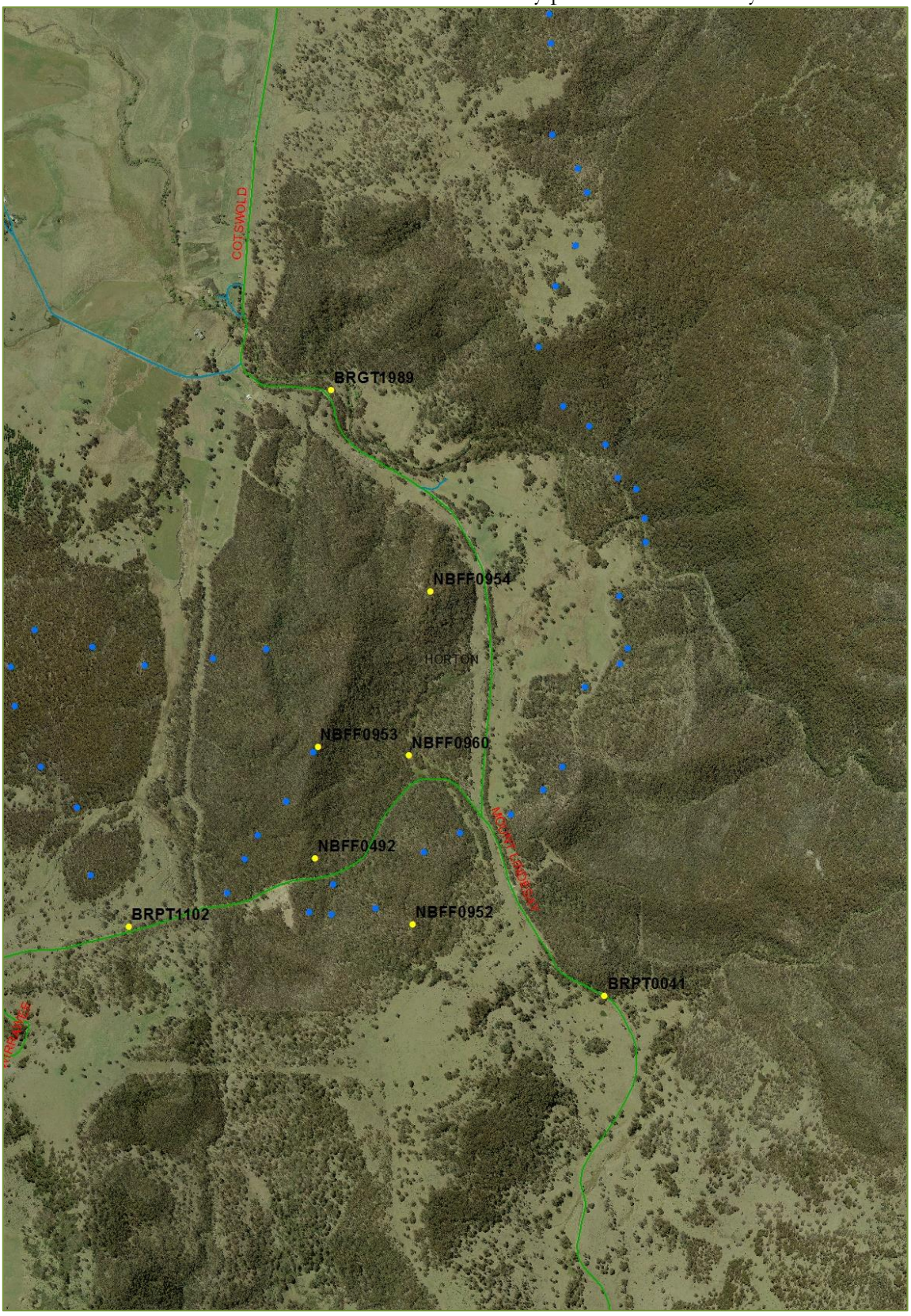


Figure 11. Numbered OEH survey plots in the area mapped as Critically Endangered Ecological Community on the offset property Mt Lindesay.

Blue dot lines are Hewlet Hunter survey plots on Mt Lindesay



4.4.2 Dominant tree species data recorded at the OEH survey plots shown on the above map, obtained from OEH flora atlas database, used to identify vegetation communities with the dominant tree species likely to fit the diagnostic criteria for the CEEC

Plot NBFF0492 Not CEEC
CEEC indicator species *E. melliodora* present as co-dominant in plot, open forest structure
PCT 530. Nandewar Box - Western New England Blackbutt - Red Stringybark open forest in the Kaputar area of the Nandewar Bioregion

Plot NBFF0492	Scientific name	Dominance
	Angophora floribunda	1
	Eucalyptus bridgesiana	1
	Eucalyptus elliptica	3
	Eucalyptus laevopinea	1
	Eucalyptus melliodora	3
	Eucalyptus prava	1

Plot NBFF0952 Not CEEC
No CEEC indicator species in plot
PCT 551. Orange Gum – Caley's Ironbark - Stringybark - Tenterfield Woollybutt shrubby open forest of the Horton River area of the Nandewar Bioregion

Plot NBFF0952	Scientific name	Dominance
	Eucalyptus subtilior	3

Plot NBFF0953 Not CEEC
CEEC Indicator species *E. melliodora* sub dominant in plot
PCT 551. Orange Gum - Caley's Ironbark - Stringybark - Tenterfield Woollybutt shrubby open forest of the Horton River area of the Nandewar Bioregion

Plot NBFF0953	Scientific name	Dominance
	Eucalyptus dealbata	2
	Eucalyptus melliodora	1
	Eucalyptus subtilior	3

Plot NBFF0954 Not CEEC
No CEEC indicator species in plot
PCT 551. Orange Gum - Caley's Ironbark - Stringybark - Tenterfield Woollybutt shrubby open forest of the Horton River area of the Nandewar Bioregion

Plot	Scientific name	Dominance
NBFF0954	*Angophora floribunda*	1
NBFF0954	*Eucalyptus andrewsii*	3
NBFF0954	*Eucalyptus banksii*	1
NBFF0954	*Eucalyptus laevopinea*	3

Plot NBFF0960 Not CEEC
No CEEC indicator species in plot
PCT 572. Silvertop Stringybark - Bendemeer White Gum - Ribbon Gum open forest in the Kaputar area of the Nandewar Bioregion

Plot NBFF0960	Scientific name	Dominance
	Eucalyptus bridgesiana	1
	Eucalyptus viminalis	3

Plot BRGT1989 Potentially CEEC
CEEC Indicator species *E. blakelyi* dominant in plot
PCT 508: Blakely's Red Gum - Stringybark - Rough-barked Apple open forest of the Nandewar Bioregion and western New England Tableland Bioregion

BRGT1989	*Eucalyptus blakelyi*	3
	Eucalyptus bridgesiana	2
	Eucalyptus laevopinea	1

Plot BRPT 1102 – Not CEEC
CEEC Indicator species *E. melliodora* sub dominant in plot
PCT 516: Grey Box grassy woodland or open forest of the Nandewar Bioregion and New England Tableland Bioregion

BRPT1102	*Eucalyptus bridgesiana*	3
	Eucalyptus melliodora	2
	Eucalyptus moluccana	1

Plot BRPT 0041 – Not CEEC
CEEC Indicator species *E. melliodora* sub dominant in plot
552: Silvertop Stringybark - Rough-barked Apple - *Eucalyptus quinniorum* shrubby open forest of southern Nandewar Bioregion and New England Tableland Bioregion

BRPT0041	*Eucalyptus laevopinea*	3
	Eucalyptus bridgesiana	2
	Eucalyptus melliodora	1

The high elevation offsets on Wirradale and Mt Lindesay were critical to achieve the area of CEEC and threatened species habitat requirement for the approval of Maules Creek mine.

Figure 12. The table below shows the highlighted vegetation communities conserved in the Wirradale and Mt Lindesay offsets that do not occur in Leard State Forest (column A).

Those communities make up the bulk of the offset area and are not like for like or equivalent or better habitat.

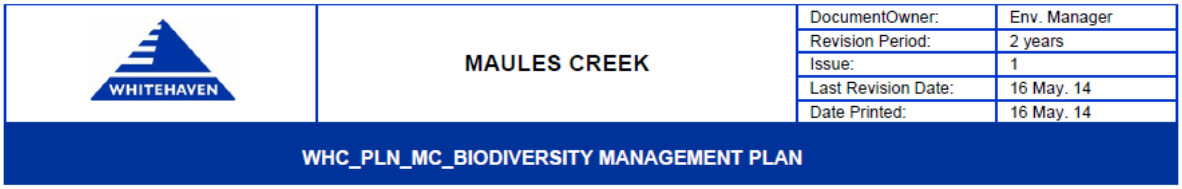


Table B. 7 Summary of Box Gum Woodland Communities to be Conserved Against Areas to be Cleared from the Project Boundary

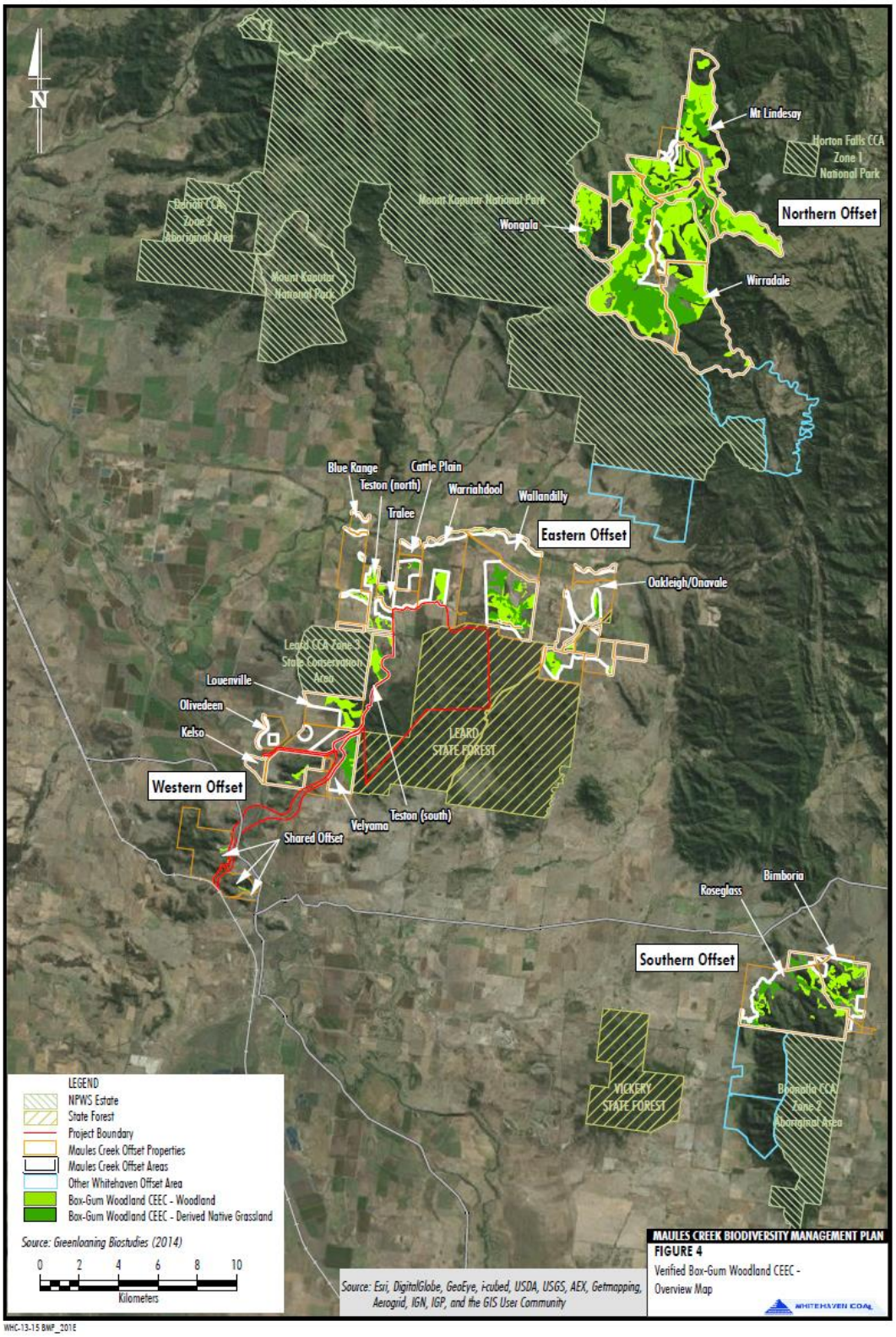
Vegetation Communities	Listing (EPBC/TSC)	Area to be cleared from Project Boundary (ha) [A]	Area to be conserved under Conservation Management (ha) [B]	Ratio of Offset area to area to be cleared [B]:[A]
Manna Gum - Yellow Box - Blakely's Red Gum open forest	CEEC/EEC		128.94	
Silvertop Stringybark - Blakelys Red Gum - Yellow Box Grassy Woodland/ Open Forest	CEEC/EEC		72.06	
Stringybark - Blakely's Red Gum grassy open forest	CEEC/EEC		606.23	
White Box - Narrow-leaved Ironbark - White Cypress Pine grassy open forest	CEEC/EEC	406.97	282.88	
Forest Vegetation (ha)		**407.0**	**1,090.1**	**2.68**
Rough-barked Apple - Blakely's Red Gum riparian grassy woodland	CEEC/EEC		223.33	
White Box - Blakely's Red Gum - Melaleuca riparian forest	CEEC/EEC	10.12	35.39	
Riparian Forest (ha)		**10.1**	**258.7**	**25.56**
Cliff and scree Thickets (Rainforest Species)		0.00	0.53	
Other Forest (ha)		**0.0**	**0.5**	**n/a**
Stringybark-Blakelys Red Gum +/- Yellow Box Woodland	CEEC/EEC		21.50	
White Box - stringybark grassy woodland	CEEC/EEC		1,241.74	
White Box - White Cypress Pine +/- Yellow Box Grass Woodland	CEEC/EEC		103.22	
White Box - White Cypress Pine grassy woodland	CEEC/EEC	0.80	879.74	
White Box - Wilga - Belah woodland	CEEC/EEC	31.46	101.50	
White Box Grassy Woodland	CEEC/EEC		21.01	
White Box Grassy Woodland (+/- Manna Gum)	CEEC/EEC		109.95	
Yellow Box - Blakely's Red Gum grassy woodland	CEEC/EEC	8.64		
Woodland Vegetation (ha)		**40.9**	**2,478.7**	**60.60**
Derived Native Grassland (Box Gum Woodland)	CEEC/EEC	86.48	1,874.23	
Threatened Grassland (ha)		**86.5**	**1,874.2**	**21.67**
Totals (ha)		**544**	**5,702**	**10.47**

Martin's report for Wirradale and Mt Lindesay appears to have included extensive areas of open forest as CEEC that would not naturally be woodland, and areas of open forest and woodland have been included in CEEC where the indicator species Yellow box, White box and Blakely's Red gum are not dominant or co-dominant, but sub-dominant. Martin has not presented data to indicate that percentage canopy cover was measured to determine canopy tree species dominance. A point also identified in the Umwelt review.

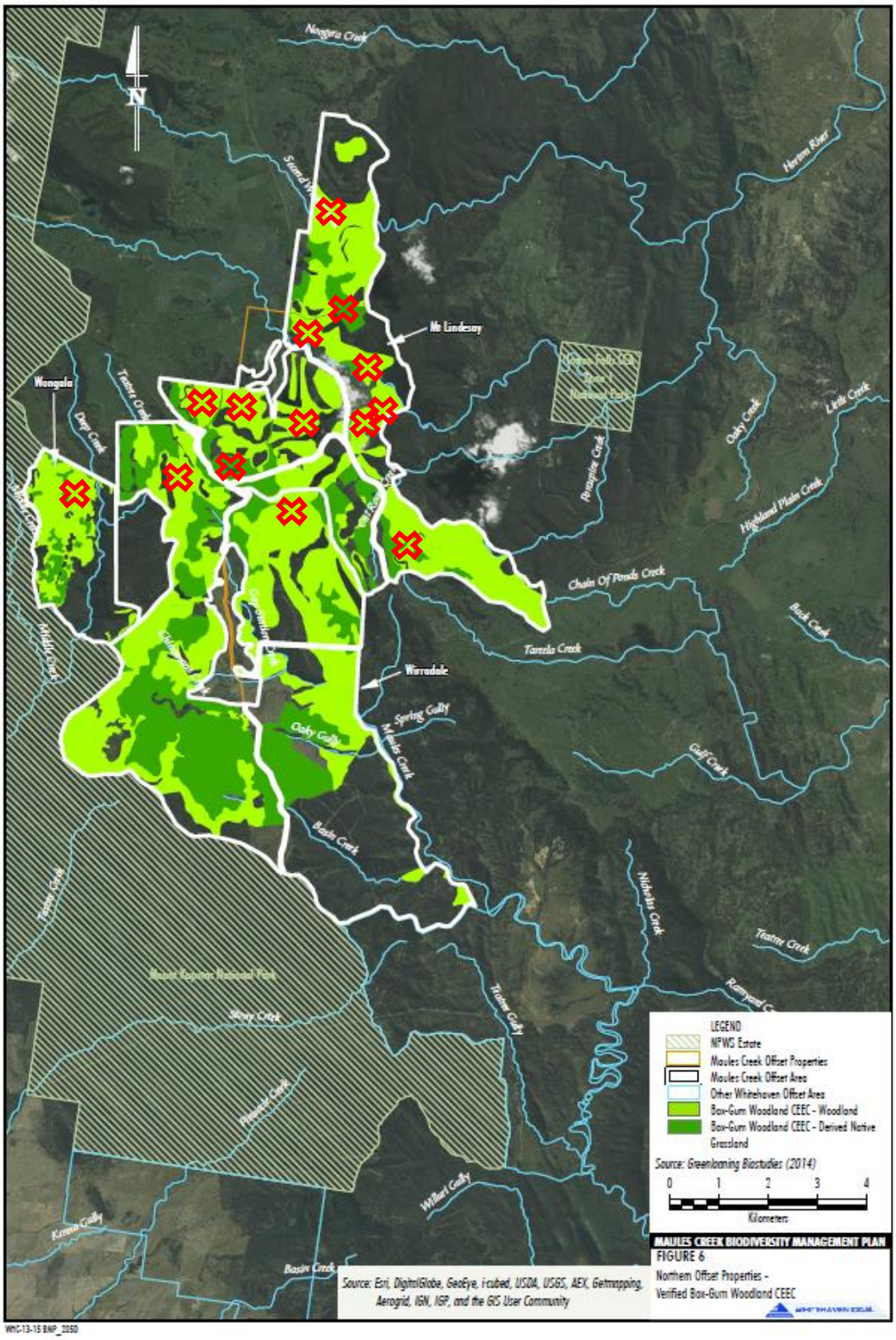
The Umwelt peer review picked up on the fact that Martins interpretation of the definition of the Box – Gum CEEC would lead to including areas of open forest as CEEC that would not naturally be woodland, and areas of open forest and woodland as CEEC where the indicator species Yellow box, White box and Blakely's Red gum are not dominant, but co-dominant or sub-dominant. That incorrect interpretation is why the reports from NWES, Envirofactor and Hewlet Hunter identified far fewer hectares of CEEC on the properties of Wirradale and Mt Lindesay. Given the evidence of more inconsistencies identified in this report, it is highly probable that the minimum requirement for the CEEC has not been met, and there is an over estimation of hundreds of hectares for both the CEEC and the threatened species habitat.

Insert from Maules Creek BMP Sept 2014, the first appearance of Alison Martins Vegetation Mapping

Page 34 of the proposed new BMP shows the extent of CEEC in the offsets as mapped by Alison Martin 2014. SEWPaC must inspect the sites to see that the mapping is wrong.



Extensive field surveys have been conducted across the high altitude end of Wirradale and Wongala and the majority of Mt Lindesay has been assessed, the red **X** mark areas are not CEEC as claimed, see detail in link to offsets review by Dr John Hunter.
https://dl.dropboxusercontent.com/u/18854476/John%20Hunter%20Offset%20Assessment%20Report%208th%20March2014%20Final.pdf



4.5 Results from assessment of Roseglass new offset property,
Originally mapped by Dr John Hunter – Hewlet Hunter

Excerpts taken from Alison Martins reports

Table 3.5 COMPARISON OF ORIGINAL QUANTITIY OF TOTAL CEEC FOR THE ROSEGLASS OFFSET CALCULATED BY NICHE ENVIRONMENT AND HERTIAGE AND TOTAL CALCULATED AFTER MAPPING AMENDMENTS CONDUCTED BY GREENLOANING

Quantity of Box Gum Woodland mapped by Niche Environment and Heritage	Quantity of Box-Gum Woodland found to be present by Greenloaning	Quantity of Derived Native Grassland Woodland mapped by Niche Environment and Heritage	Quantity of Derived Native Grassland found to be present by Greenloaning
262.00	136.02	97.00	85.84

Some positive amendments also were made to the Roseglass CEEC mapping on the basis on the basis of observations during that the Greenloaning field surveys. Initially, two areas visible from vehicle tracks and observed to support White Box Woodland with

mature trees were subject to further investigation via walking transects as part of the review process. These areas were expected to comprise a narrow fringe of White Box but were found to be more extensive and to conform to the CEEC definition, excluding areas of dense Cypress Pine regeneration, rocky outcrops and larger patches of shrubby habitat. Further investigations identified some additional areas of the Box-Gum Woodland extending up onto some of the high ridgelines on the site (refer to photographs in Appendix D), one area of which had been partially mapped in the original Niche/Hunter mapping (shown as the innermost section of *White Box-Wilga-Quinine Derived Native Grassland* on the far central western side of **Figure B.5** in **Appendix B**). These locations of the CEEC on the higher areas of the Roseglass Offset are similar in topographical features to the central locations of the CEEC on the adjacent Bimbooria Offset.

In general, a range of refinements to the mapped CEEC boundaries for the Roseglass Offset were required. The locations where amendments to the mapping of the CEEC were warranted are indicated in **Figure F.5, Appendix F**. More comprehensive details on the extent of amendments required are provided in **Table G.1, Appendix G**.

v. Roseglass

Given the identified issues with the GIS mapping layers for the Roseglass Offset, initial observations were focused on confirming the relative locations of areas of the Box-Gum Woodland and Derived Native Pasture. Initial observations also suggested there were likely to be some mapping refinements required, including inclusion of some additional areas of Box-Gum Woodland visible from access tracks and exclusion of some areas appearing not to support any representations of the diagnostic species for the Box-Gum Woodland. Observations of a number of the grassland areas also indicated that some refinement to mapping of these areas as the CEEC was required based on the prevalence of thistles throughout substantial patches of grassland and the observed low condition of such areas.

Figures 13 a & b Roseglass vegetation mapping and changes below

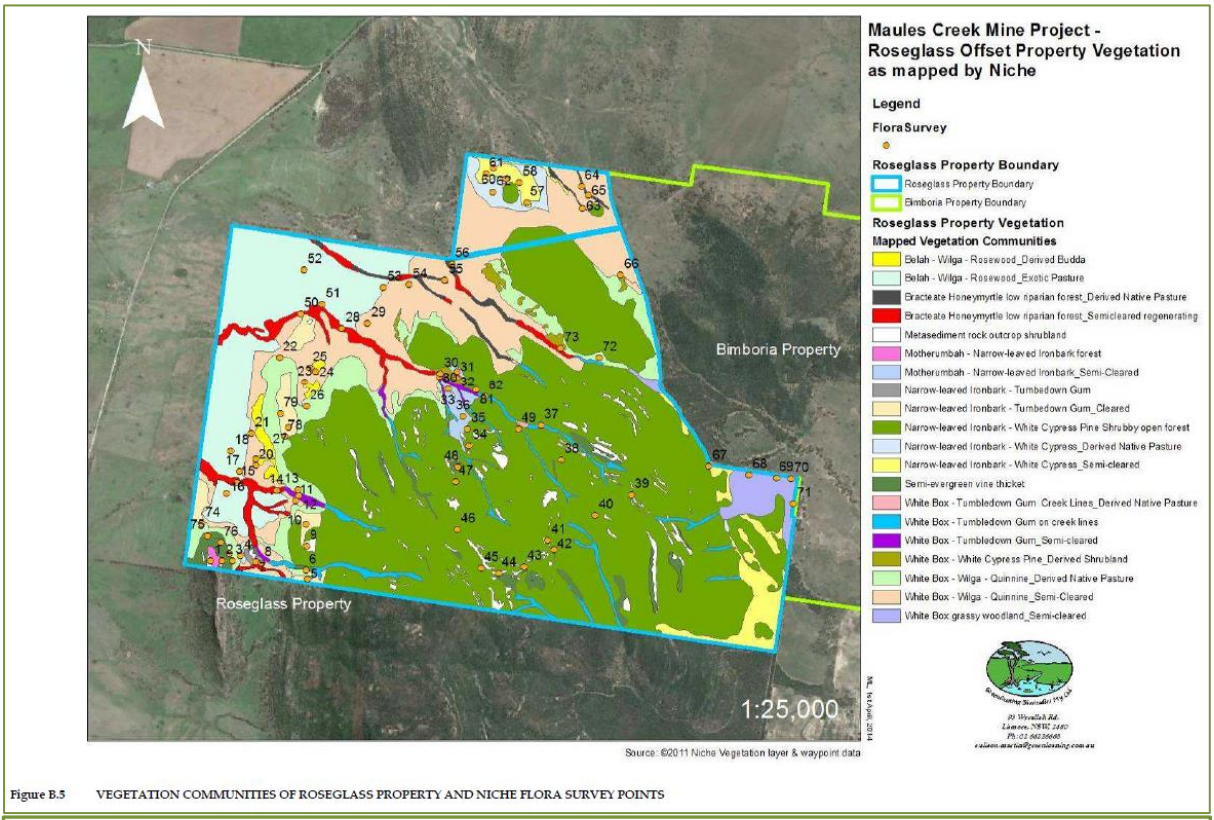


Figure B.5 VEGETATION COMMUNITIES OF ROSEGLASS PROPERTY AND NICHE FLORA SURVEY POINTS

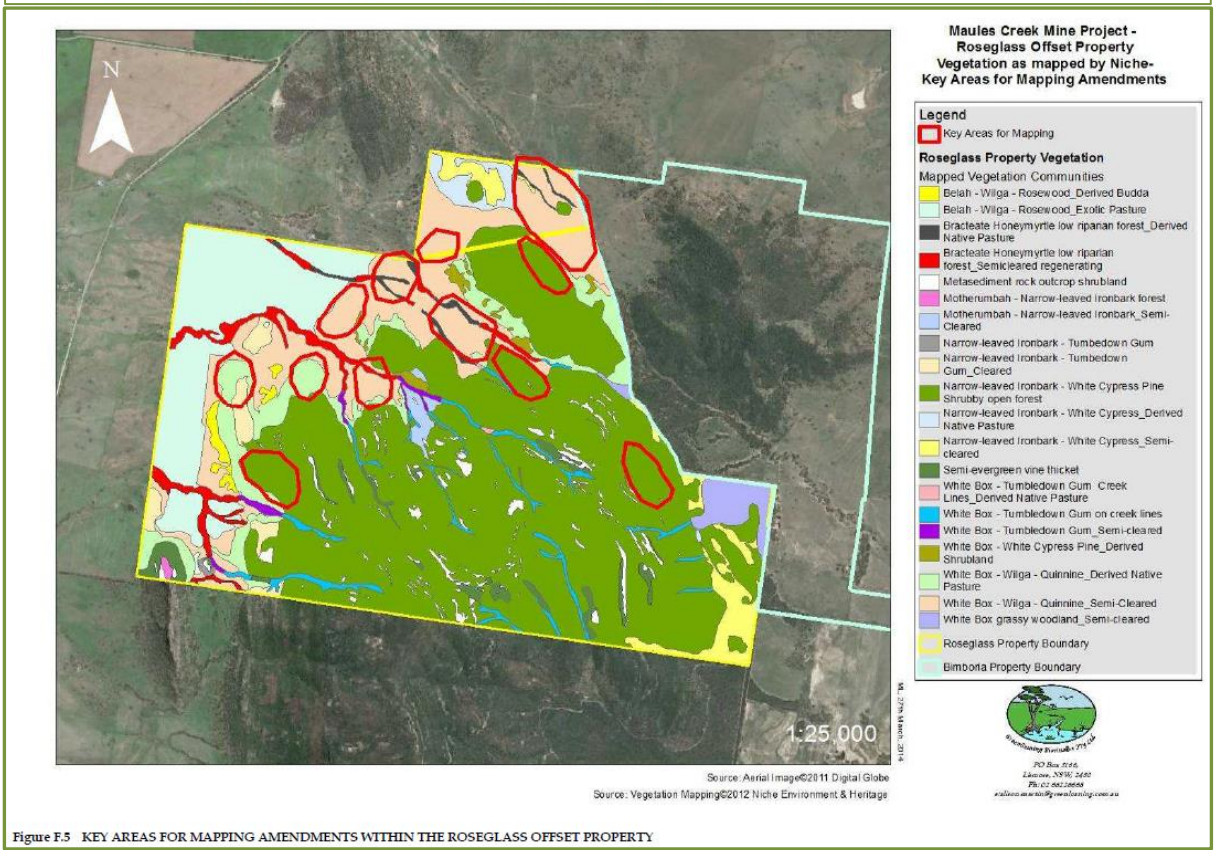


Figure F.5 KEY AREAS FOR MAPPING AMENDMENTS WITHIN THE ROSEGLASS OFFSET PROPERTY

NWES has not inspected the Roseglass property, however Dr John Hunter did the original mapping of the vegetation for Niche. Niche interpreted his mapping to identify woodland and derived grassland that conforms to the definitions of the critically endangered box-gum ecological community. NWES asked him to review Martins report to comment on her final mapping amendments.

Niche originally mapped Roseglass as having 97ha of CEEC derived grassland and 262 ha of CEEC woodland, those figures were decreased by Martin to 85ha of CEEC derived grassland and 136ha of CEEC woodland.

Dr John Hunter considers that the extent of CEEC is still exaggerated, and says that they would be scraping the bottom of the barrel to get around 50-100 ha of CEEC at best, most of which is in a poor condition.

The survey he did used the standard techniques for NPWS mapping, with the addition of the sites being in the Bio banking form, and allocated proportionally using Bio banking protocol to produce a map based on Floristic Analysis within PATN.

Such mapping was not done intentionally to determine what is or is not CEEC, as none of the vegetation types align with the CEEC threatened community definition. The boundaries drawn were thus PCT boundaries that did not necessarily conform to a standard threatened community.

It would seem that Dr John Hunters original map product has been modified by Niche into what they perceived as threatened communities and to further divide units into condition and types based on the results from the Bio banking sites.
He assumes that they have holus bolus used a map up and defined it as a Box Gum Woodland when not all of it would have been. Floristic analysis does not know what a TEC is or how it is defined, that must be done manually and ad hoc afterwards.

This would explain Greenloaning cutting back the CEEC hectares on what Niche had mapped. But Martins result is still an overestimation, as she has grouped in types that would never have been grassy woodland and would have had a semi SEVT understorey with much Wilga.

4.6 Results from assessment of Bimbooria new offset property

Bimbooria was not inspected in the boundary. It was viewed from western, northern and eastern vantage points (see photos) and aerial images. The ridge which extends from Roseglass north to the Boggabri – Manilla road was assessed as representative of the dominant vegetation that would occur on Bimbooria and Roseglass 2km further south.

The dominant feature of the vegetation on Bimbooria and Roseglass is the thick juvenile and immature regrowth of White Cypress, the other dominant feature is the skeletal rocky slopes shown in the photos and Google image.

Excerpts taken from Alison Martins reports

3.3.5 *Bimbooria*

A number of locations mapped on a preliminary basis as CEEC by Cumberland Ecology and from which plot data and some rapid assessment data was collected for the purposes of this review, conformed to the definition of the CEEC. In some instances, the same allowance was made for the low level of grass cover and herbs in some areas subject to plot sampling as was made for the Project Site (refer to photographs in Appendix D and data summaries provided in Appendix E) (native ground cover benchmark value for the *White Box Grassy Woodland* is 50%). This allowance takes into account the effect on plant growth from the prevailing severe drought conditions for the duration of assessments on the Bimbooria property. As for Leard State Forest, it was deemed reasonable to assume that ground cover would normally be more extensive under less severe seasonal conditions.

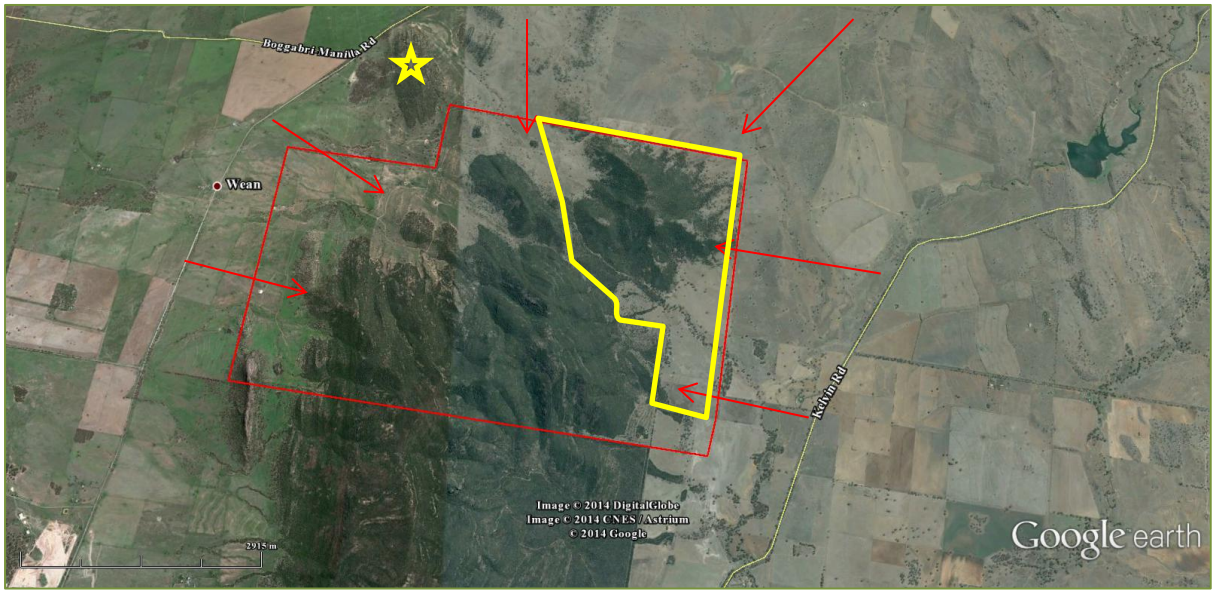
Not all areas mapped as CEEC conformed to the definition of the Box-Gum Woodland, the extent of shrub cover in the north-western sector of the vegetation for instance being too high and rendering this sector as shrubby woodland/forest. Some sectors also supported patches of dense cypress pine regeneration, and where such patches are of sufficient size and have not been included in the preliminary mapping of cypress pine Shrubland, mapping revisions are required. It should be noted that dense areas of Cypress Pine regeneration have been consistently excised from inclusion in the areas of CEEC, although technically, where such areas also support White Box in the immediate vicinity, these areas also represent part of the original community. The past land practices thus have substantially affected the present community structure and could be expected that the areas currently dominated by regenerating cypress pine, would be restored to the original White Box-Cypress Pine Grassy Woodland, or even a White Box dominated grassy woodland.

One area in the far north of the Bimbooria property and mapped as *White Box-Cypress Pine Grassy Woodland* also was found not to represent the CEEC but was in fact *Silver-leaved Ironbark Open Forest/Woodland*. In other areas however, field surveys and assessments, involving walking transects and numerous rapid assessments and point descriptions, identified that the CEEC extended further than originally mapped, or adjustments to the alignment of the mapped communities were more appropriate. Various refinements and amendments to the mapped CEEC boundaries were therefore warranted, as indicated in Table 3.4 below.

Table 3.4 COMPARISON OF ORIGINAL QUANTITIY OF TOTAL CEEC FOR THE BIMBOORIA OFFSETS CALCULATED BY CUMBERLAND ECOLOGY AND TOTAL CEEC CALCULATED AFTER MAPPING AMENDMENTS CONDUCTED BY GREENLOANING

Quantity of Box Gum Woodland mapped by Cumberland	Quantity of Box-Gum Woodland found to be present by Greenloaning	Quantity of Derived Native Grassland Woodland mapped by Cumberland	Quantity of Derived Native Grassland found to be present by Greenloaning
169.00	150.23	40.00	29.48

Figure 14. The outline of Bimbooria in yellow and Roseglass red, dominantly skeletal rocky ridges not likely to support grassy Box-Gum critically endangered ecological community or provide equivalent threatened species habitat, arrows are photo points available at the link https://www.dropbox.com/sh/ncqxuu7laqy7eje/AAAaBXqWxWhlReES3iJ488_Sa



Bimbooria was not inspected on the ground, as it was not possible to be critical of the vegetation mapping without having Martins updated mapping to review. So the assessment was limited to views from western, northern and eastern vantage points (see photos) and aerial images.

Very similar vegetation extends north on the same ridge to the Boggabri - Manilla road, that area was assessed as representative of the dominant vegetation that would occur on Bimbooria and Roseglass 2km further south. Very similar vegetation extends south into Boonalla Aboriginal Area where the author has conducted wildlife surveys when it was Kelvin State Forest.

The dominant feature of the vegetation on Bimbooria and Roseglass is the thick juvenile and immature regrowth of White Cypress, the other dominant feature is the skeletal rocky slopes shown in the photos and Google image.

Cumberland mapping Figure B4 page 50 shows Box – Gum woodland on the slopes and ridge of the dominant peak in Bimbooria, Greenloaning have circles on the map Figure F4 showing where vegetation communities have been changed, what the change was remains a mystery.

Claims that grassy White Box woodland CEEC would occur on the stoney and rocky hills in the Kelvin and Maules Creek locality are disputable. It is highly unlikely that the slopes of Bimbooria or Roseglass would have been grassy White box woodland, prior to disturbance the majority of it would have been a shrubby Ironbark - White Cypress – White box woodland, as seen in the less disturbed areas of the ridge. White box trees must be dominant or co dominant to meet the CEEC criteria and have a grassy ground cover, neither would apply to the slopes vegetation of Bimbooria.

Grassy Box – Gum woodland CEEC would only have occurred on the deeper soils associated with the foot slopes and flats, those areas on Bimbooria and Roseglass have been highly degraded by clearing, grazing, cropping, and fertilising for over a 100 years, and will take over 150 of years of regeneration to equal the conservation value of the woodlands of Leard State Forest.

The dominance of White Cypress on Bimbooria is increasing in all communities, as it is across 1,000's of hectares of the hilly offset properties that have remnant woodland/open forest such as Roseglass, Onavale, Wallandilly, Myall Plains, Mallee Springs, Kelso and southern Wirradale.

That increasing trend for more Cypress regrowth is not going to change without a massive amount of thinning of immature and juvenile trees or a hot fire. Fire is not an option because it would destroy existing log and hollow tree habitat and promote the next regeneration event for White Cypress.

When woodlands become dominated by White Cypress their habitat value declines for the bats, birds, reptiles and mammals that occur in Leard State Forest. Even in an undisturbed state, such skeletal ridge remnants as found on Bimbooria and Roseglass are of considerably lower conservation value than the gentle slopes with productive soil types like Leard forest.

All of the areas of White Cypress regrowth on the properties purchased for offsets will require enormous amounts of time and money spent on thinning them over many years, if they are ever to regenerate mature woodland and provide suitable habitat for threatened species. The NRC has investigated the cost of ecological thinning in State Conservation Areas as between $ 320 to $ 575 per hectare over a seven year period. It could be expected that thinning Cypress to achieve a mature woodland or open forest over one hundred years will cost $1,000 per ha.

If those areas are to be considered as adequate compensation for threatened offsets then they must have management plans set in concrete that will ensure that thinning is maintained for 100 years plus and the full cost of that work be locked up in accounts now to ensure that it will be guaranteed into perpetuity.

Figure 15. Vegetation mapping of Bimbooria

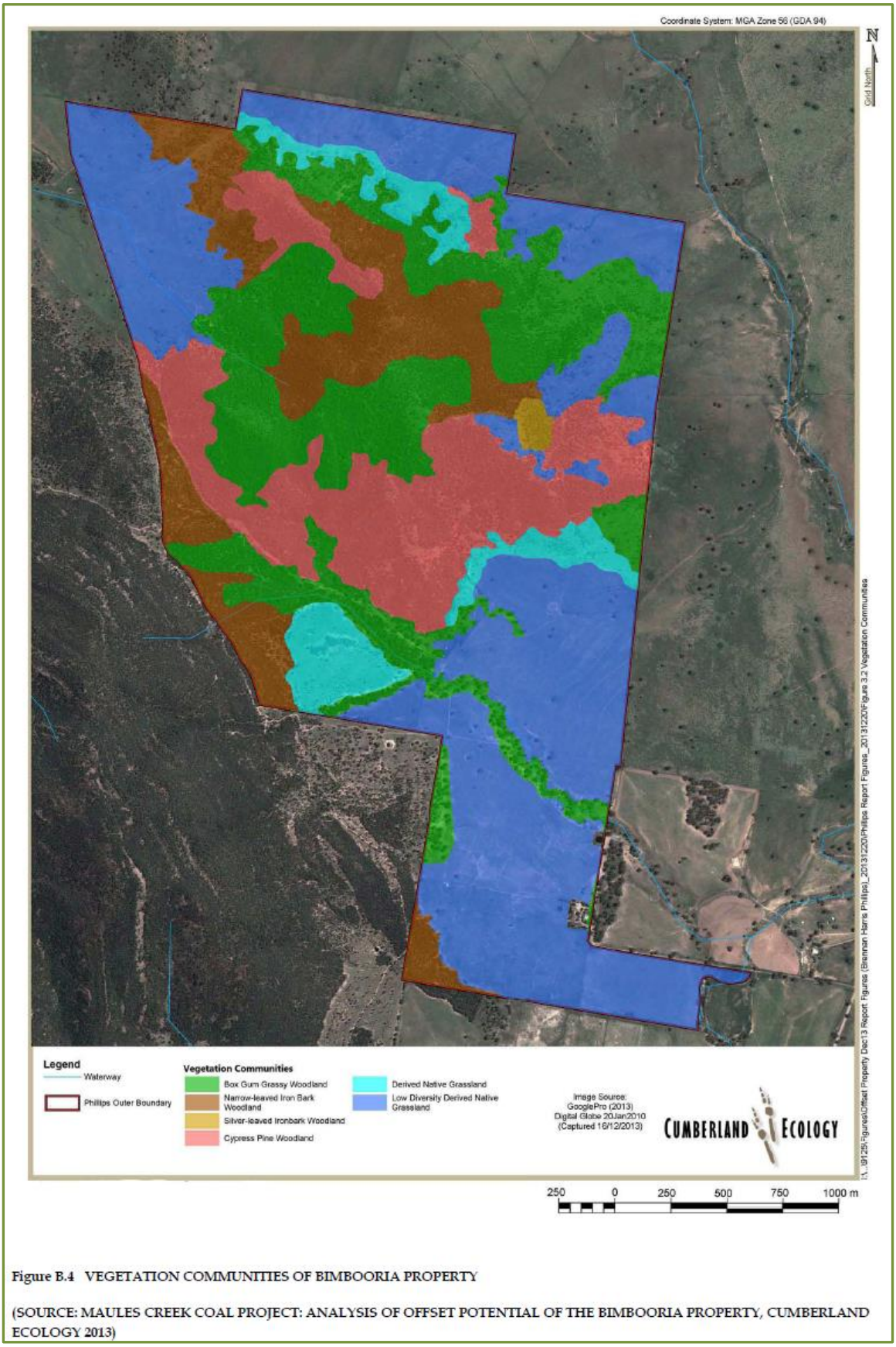


Figure B.4 VEGETATION COMMUNITIES OF BIMBOORIA PROPERTY

(SOURCE: MAULES CREEK COAL PROJECT: ANALYSIS OF OFFSET POTENTIAL OF THE BIMBOORIA PROPERTY, CUMBERLAND ECOLOGY 2013)

Figure 16. Areas of vegetation mapping changed on Bimbooria

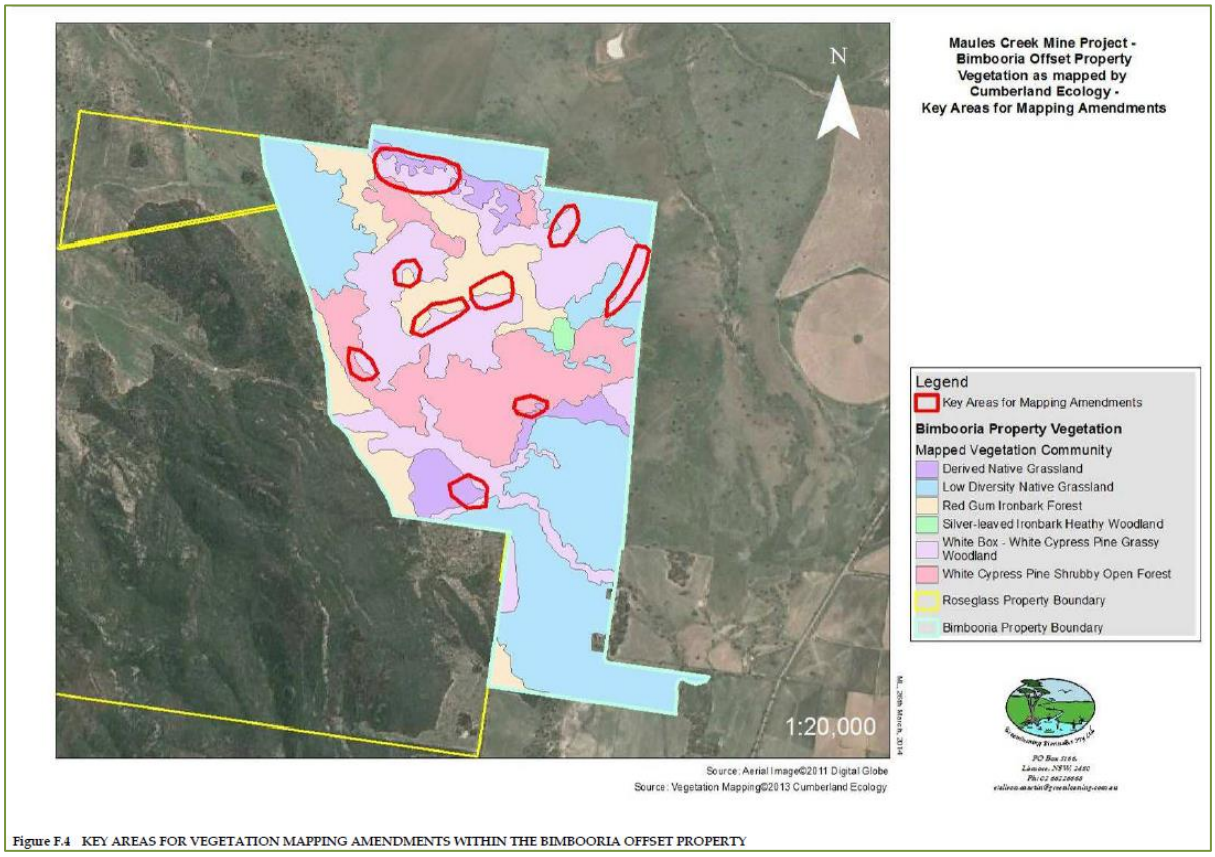
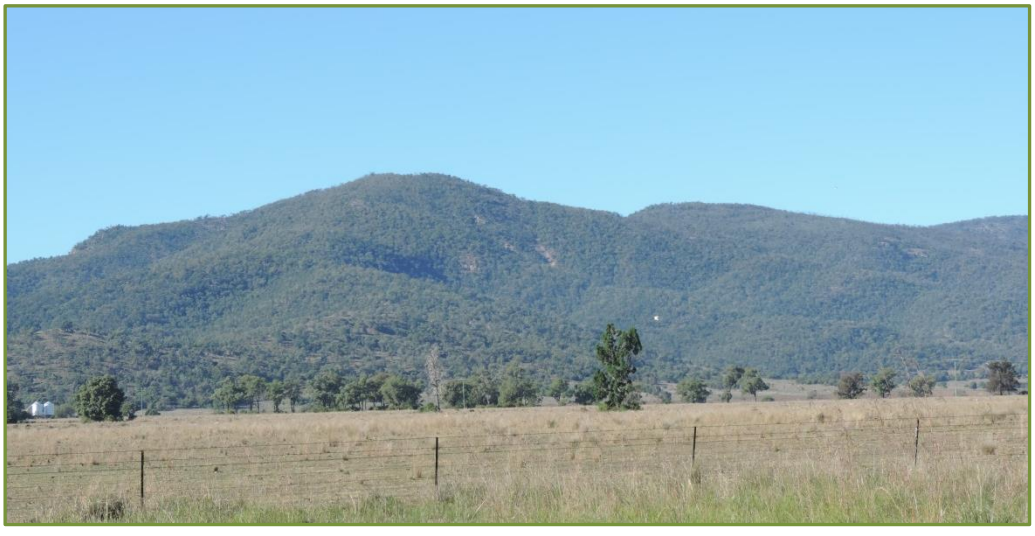


Figure F.4 KEY AREAS FOR VEGETATION MAPPING AMENDMENTS WITHIN THE BIMBOORIA OFFSET PROPERTY

Roseglass south eastern ridge, the boundary is the tree line at the base of the ridge, foreground not included

Roseglass south eastern ridge, boundary is the tree line at the base of ridge - note dominance of White Cypress on steep rocky slopes.



Roseglass south west corner ridge, boundary extends onto flat grazing land but does not include the foreground

Roseglass north west corner ridge, boundary extends onto flat grazing land but does not include the foreground - note thick Cypress regrowth

Roseglass northern ridge viewed from the north, includes some lower slopes and cleared grazing land, but not the foreground.

Roseglass ridges north east corner viewed from north, does include some lower slopes and grazing land but not the foreground

Bimbooria north ridge, boundary runs along tree line on lower slope, fore ground not included - note thick Cypress regrowth on the slopes

Bimbooria south east ridge, boundary runs along tree line on lower slope, foreground not included - note thick White cypress regrowth

Bimbooria north east ridge, boundary runs along tree line on lower slope, foreground not included - note Cypress regrowth

Bimbooria north east ridge, boundary runs along tree line on lower slope, fore ground not included - note Cypress regrowth

Bimbooria north ridge, Roseglass is ridge behind, boundary runs along tree line on lower slope, foreground not included

Bimbooria north west ridge, boundary runs along tree line on lower slope, foreground not included

5-0. Conclusion

Conservation groups deserve to be given a proper explanation of why the offsets have been approved and how the requirement for like for like vegetation and equal to or better habitat have been met. SEWPaC must be accountable to the public for its decisions.
The reports from Dr John Hunter, Wendy Hawes and NWES exposed that the first lot of offsets were not like for like or equal to or better habitat, which was confirmed by Martins review deleting 492 ha off the total CEEC.

This review of four of the additional offsets has found similar exaggerations of the extent of the grassy Box – Gum critically endangered ecological community occurring and where habitat quality is not equal to or better. The finding of these recent field assessments raise serious questions about the accuracy of the information presented in Alison Martin's reports and question why her reports were accepted. She should have been requested to present updated vegetation maps for all properties, and present updated tables of all the vegetation types and areas of each vegetation type present. Circling vague red lines on old maps and using out of date tables from Cumberland's reports should not have been acceptable.

Alison Martin's Independent Review of the offsets did not provide sufficient detail to adequately describe the vegetation communities, nor did she provide updated vegetation mapping to support her claim of there being 127 ha more than the minimum area of CEEC required for the approval. The lack of detailed description and mapping appears to be a cover up to conceal the detail of the results and prevent any critical review of those results.

This report clearly shows there are still serious deficiencies with the area and quality of the offsets, thorough remapping of the offsets will likely result in the deletion of another 900 plus hectares of CEEC. The government should be demanding that another independent consultant be engaged to redo the independent review to provide the necessary certainty and scientific credibility.

Illustration of offsets not “like for like” vegetation community or habitat

Stringybark open forest on the offset property Mt Lindesay that is not the critically endangered ecological community of White box Stringybark grassy woodland as claimed

Below Grassy White box woodland critically endangered ecological community of Leard State Forest

The extent of the Box – Gum woodlands has major implications for the extent of suitable habitat for the Corben's long-eared bat, Regent Honeyeater and Swift Parrot. Greenloaning increased the extent from 1456ha to 1637ha for Mt Lindesay and from 1942ha to 2400ha for Wirradale. These three species prefer box ironbark woodlands, how she came up with an increased area is perplexing, considering she decreased the area of Box – Gum woodland CEEC by 492 ha, and according to Hunters findings the extent of CEEC should be reduced a lot more.

The bulk of the low elevation offsets are ridge communities dominated by White Cypress, which is becoming an ever increasing problem across 1,000's of hectares of the hilly remnant woodlands & open forest on the properties Roseglass, Onavale, Wallandilly, Myall Plains, Mallee Springs, Kelso and southern Wirradale.

That increasing trend for more Cypress regrowth is not going to change without a massive amount of thinning of immature and juvenile trees or a hot fire. Fire is not an option because it would destroy existing log and hollow tree habitat and promote the next regeneration event for White Cypress.

Woodlands dominated by White Cypress have considerably lower habitat value for the bats, birds, reptiles and mammals that occur in Leard State Forest. Even in an undisturbed state, such skeletal ridge remnants as found on Bimbooria and Roseglass are of considerably lower conservation value than the gentle slopes with productive soil types like Leard forest.

All areas of White Cypress regrowth on the properties purchased for offsets will require enormous amounts of time and money spent on thinning them over many years, if they are ever to regenerate mature woodland and provide marginal habitat for threatened species. The Natural Resources Commission has investigated the cost of ecological thinning in State Conservation Areas as between $ 320 to $ 575 per hectare over a seven year period. It could be expected that thinning Cypress to achieve a mature woodland or open forest over one hundred years will cost $1,000 per ha.

The mines must have management plans set in concrete that will ensure that thinning is maintained for 100 years plus and the full cost of that work be locked up in accounts now to ensure that it will be guaranteed into perpetuity.

Conservation groups were appalled by the approval of the Boggabri Coal offsets without them having to get an independent review of their CEEC offsets. That condition of independent verification of the area and quality of the CEEC was to provide certainty for the public. That requirement for independent review was a crucial determining factor that won the court case in favour of the mines. They are also appalled by how the offset calculator was used to conclude that the Regent Honeyeater, Swift Parrot and Corben's Long-eared bat would be compensated by Boggabri Coal offsets, see details in Senate Inquiry submission.

The Umwelt peer review has validated our claim that both Cumberland Ecology and Alison Martins vegetation mapping used an interpretation of the definition of the Box – Gum CEEC that would lead to including areas of open forest as CEEC that would not naturally be woodland, and areas of open forest and woodland as CEEC where the indicator species Yellow box, White box and Blakely's Red gum are not dominant, but sub-dominant.

That incorrect interpretation is why the reports from NWES, Envirofactor and Hewlet Hunter identified far fewer hectares of CEEC on the properties of Wirradale and Mt Lindesay. The same

incorrect interpretation also resulted in a gross exaggeration of the extent of threatened species habitats on those properties.

This photo of Wallandilly site 1441 is typical of White Cypress regrowth over thousands of hectares of the offsets, its impact, cost, and duration of control has not been acknowledged, such stoney ridges are never going to regenerate Box-Gum CEEC

Also the serious threat and likely impact on conservation values from tropical grass and weed invasion to both remnants and regeneration areas has not been acknowledged. Highly invasive species such as Green Panic, Tall Rhodes grass, Buffel grass and Coolatai grass are rapidly invading the Maules Creek area, below is a site on Onavale.

The federal government must act on this serious misuse of the definition of the CEEC and either independently send its own botanist to remap the offsets, or require Whitehaven to contract another independent botanist to remap the offsets.

As taxpaying citizens of this country we demand to be given an explanation as to how we are wrong, and we demand to be told in detail why the federal government has chosen not to pursue the investigation into the false and misleading offsets, as our claims of gross over estimation of the CEEC have been partly vindicated by Alison Martins review.

There are still state and nationally threatened species that have not even had tokenistic consideration. The Federally listed endangered plant *Tylophora linearis* will be destroyed by both Boggabri and Maules Creek mines and the impact on the Large-eared pied bat is still unknown, because it is not known where is roosts in shallow caves. Blasting has started adjoining a sandstone escapement where it is likely to roost and breed. Both of those species will decline as neither of them have been considered for offsets, and those species that supposedly do have offsets will also decline because much of the offset habitat is unsuitable or marginal.

A state threatened species the Pale-headed Snake has still not been considered at all, and only a very token consideration was given to the other cave dependent Eastern Cave bat, which is also highly likely to roost and breed in sandstone overhangs close to the blasting area. Blasting should not be allowed until those roosts sites are known and the impact of blasts on those two vulnerable bats is properly researched.

The federal governments excuse to drop the investigation into Cumberland Ecology saying that there was insufficient admissible evidence is baseless. The Umwelt peer review was never going to prove or disprove that Cumberland were guilty of knowingly presenting false and misleading information in their reports. That desktop review of methodologies does not go far enough, it must now be backed up by field assessment.

Given the evidence of more inconsistencies identified in this report, it is highly probable that the minimum requirement for the CEEC has not been met by hundreds of hectares, which would give the minister the right to revoke the approval if he chose to. If the government does have updated vegetation mapping and tables of vegetation types and areas, we request that they be made available to conservation groups immediately.

Inspection of the online NSW Flora Atlas database found that sections of the Northern offsets have been surveyed by Office of Environment and Heritage State-wide Vegetation Mapping Program, their plot data showing tree species dominance further validates that Cumberland and Greenloaning mapping is incorrect. The fact that both State and Federal departments failed to review that OEH vegetation mapping even though it was in draft form was wilful ignorance.

These are very serious allegations; failing to conduct a thorough investigation into the mapping of the CEEC would further knowingly corrupt the process.

Over 240 people have put themselves at risk and great expense to be arrested this year. They have taken action because they can see that governments are not going to protect the environment and stop inappropriate developments, they feel it is up to them to enforce the environmental regulations.

The Report from the Senate Inquiry into the use of Offsets has made 21 recommendations to address the abuse of offsets that we identified in our submissions about Whitehaven offsets; it was good to get that support and acknowledgement that the problems are serious. Those recommendations need to be implemented now to give the EPBC offset policy scientific credibility, presently it is nothing more than wishful assumptions that species and communities will not decline.

By approving the offsets the governments have accepted

- vegetation communities as offsets that don't occur in the forest to be cleared,
- an exaggerated extent of the CEEC,
- and offsets that are obviously not equal to or better habitat for the threatened species that will lose habitat in the forest.

The bottom line to all of this is that if the government seriously believes that science, the precautionary principle, due process, and the requirements of the EPBC Act and TSC Act have been implemented with professional diligence, there should be no reason for the secrecy, and no reason why the minister and his representatives of the environment department would not want to meet with conservation groups to discuss their issues.

We look forward to hearing from you soon with proposed dates that you can visit the forest and discuss with us the flaws in the planning process. At this point in time the public are very cynical about the planning and approval process. You can restore their faith in the government and the planning process by meeting with them and explaining how the outcome will provide a conservation benefit for the communities and species destroyed in Leard State Forest.

Please make considered and detailed responses to our questions, short answers lacking detail are not acceptable. SEWPaC has a duty to be accountable to the public for its decisions.

APPENDIX A. Two submissions sent to the Senate Inquiry relating to abuse of offsets by Maules Creek and Boggabri Coal mines

https://dl.dropboxusercontent.com/u/18854476/NICE%20update%20submission%20to%20Senate%20Inquiry%20into%20use%20of%20Offsets%204th%20May%202014.docx
https://dl.dropboxusercontent.com/u/18854476/Senate%20Inquiry%20into%20Offsets%20submission%20edit%2023rd%20April%202014.pdf

The report from the Senate Inquiry into the use of environmental offsets has recommended amendments to the EPBC Act Environmental Offsets policy that if implemented now would not allow developments such as the Maules Creek mine to be approved due to the irreplaceability of the critically endangered ecological community and threatened species habitat in Leard State Forest.

Recommendations resulting from Senate Inquiry into the use of offsets

A senate inquiry was held between 5th March 2014 and 25th June 2014 to consider 95 public submissions relating to the appropriateness and effectiveness of the use of environmental offsets in federal environmental approvals in Australia.

The issues identified with the Maules Creek mine offsets were a significant part of the inquiry which resulted in 21 recommendations for amendments to the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*. The committee was persuaded by evidence that some aspects of the policy and its implementation could be improved by;

- The EPBC Act Offsets Policy principles should have statutory status, this will create an obligation on the minister to ensure that the offset principles are more rigorously implemented
- Offsets must be additional and deliver a conservation gain
- There is insufficient emphasis on avoidance and mitigation measures
- Offsets should not be used as an excuse to allow developments in all circumstances
- Offsets should be unavailable in some circumstances; for example where the impacted matter is listed as critically endangered or within a world heritage area.
- Offsets must be fully identified prior to approval being given for a particular activity
- Offset plans and strategies must be published on the Dept of Environment website.
- The Dept must verify all offset calculations and information provided by proponents
- Dept must be adequately resourced to be able to review proposed offsets
- Dept must be adequately resourced to be able to monitor effectiveness of offsets
- Improve legal mechanisms to ensure that offsets are secured into perpetuity
- Improve legal mechanisms to ensure that funds are available to manage offsets into perpetuity
- Develop a strategic approach to identification and delivery of offsets, and encourage advanced offsets
- State and territory standards and legislation should meet national offsets standard, not merely be accredited as meeting the objects of the EPBC Act.

APPENDIX B Internal SEWPaC document sourced using GIPA

An internal email 12th February 2014 referring to a review of the first Greenloaning report by SEWPaC staff member Peter Irish. None of the issues he raised were passed on to Whitehaven as requests for more information. Why were they ignored and the approval granted, when it was clear that the descriptions provided were not adequate to determine if the offsets were adequate.

Some notes on the habitat quality assessment for the three threatened fauna species, in the independent expert review:

- **The habitat scores are of limited value and do not allow for an accurate or comprehensive quality assessment for the species at the impact and offset sites. For example:**
  - **Attributes measured include the prevalence of logs, which is not an important habitat component for any of the three species, and it is not clear how relevant some of the other attributes are in determining habitat quality for the species. Also measured was occurrence of preferred food tree species (presumably just for the honeyeaters?), which is an extremely important determinant of habitat quality/suitability but was not weighted higher than other, less relevant attributes in deriving quality scores. It appears that the habitat quality scores for each species were determined using the one methodology, despite the species different habitat requirements. (I acknowledge there was a different methodology used for the South-eastern Long-eared Bat but this is not reflected in the habitat quality comparison).**
  - **The data presented for each habitat attribute measured do provide something to work with in assessing quality for the species, but the low number of sites assessed (e.g. just five for the impact site) is far too few to enable meaningful analysis.**
- **The general habitat observations are probably more useful in informing a comparison of habitat quality for the species, although coverage of the sites was obviously limited and the comparison of sites is very general.**
- **As far as I can tell, there is no systematic analysis of the broad vegetation types mapped across the impact and offset sites and their relative condition and suitability as habitat for the three species, considering structure, floristics, age, topography, landscape context etc. I would have expected this to underpin an**

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assessment of the habitat quality across the sites for the three species. The general habitat observations provided do not compensate for this lack of comprehensive analysis.

- The review does identify key habitat attributes for each species and discusses the prevalence of these at the various sites in a general way.

- The key conclusion for the Regent Honeyeater and Swift Parrot in relation to habitat quality was that while the impact area had more large, mature trees (important attribute), the offset sites (mainly the northern offset) had more drainage lines. It is not clear how relevant the reference to drainage lines is, since this could be confused with the preference of Regent Honeyeaters for low-lying woodland areas generally, which are more prevalent at the impact site. This would need to be considered more closely to be confident it was a reasonable conclusion for the two species.

- The key conclusion for the South-eastern Long-eared Bat is that habitat quality is similar between the impact and offset sites. However, the only real comparison presented was that the impact site has more old trees and tree hollows. No comparison of shrubs was made, which has been suggested as an important habitat attribute. Therefore, based on my reading of the document, the argument that the offset habitat is equal or better is not supported.

- There seems to be references to some tables that don't contain the information they are supposed to. E.g. Appendix E Table E.1. referred to on page 6.10 does not contain areas of offset habitat estimated as provided foraging habitat for the bat, so some data may be missing? There are a few examples of this.

- Overall, the information supporting the conclusions reached for fauna species (which includes previous reports, expert assessment of habitats etc.) is not clearly or quantitatively presented and more time would be required to review the supporting information and determine whether the conclusions reached are reasonable.

Extensive areas of the offsets are still not owned by Whitehaven

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WHC_PLN_MC_BIODIVERSITY MANAGEMENT PLAN

Conservation Area Zone 3 State Conservation Area (previously Kelvin State Forest). The latter two properties are referred to generally as the Southern Offset are intended to be conserved and restored to improve the linkage between the southern end of the Nandewar Ranges and Boonalla State Conservation Area.

The offset properties that comprise the revised Biodiversity Offset Strategy are listed in **Table 3.1**.

Table 3.1 Summary of Offset Properties included in the Revised Biodiversity Offset Strategy

Property Name	Size of Property (ha)	Ownership	Within Currently Approved Offset Strategy
Blue Range	748	Private ownership	Yes
Cattle Plain	284	Private ownership	Yes
Teston (nth)	292	now owned by Maules Creek JV	Yes
Tralee	342	now owned by Maules Creek JV	Yes
Wallandilly	1,890	now owned by Maules Creek JV	Yes
Warrlahdool	1,011	Under contract	Yes
Mt Lindesay	2,430	now owned by Maules Creek JV	Yes
Wirradale	4,321	now owned by Maules Creek JV	Yes
Shared Property	884	Idemitsu Australia / now owned by Maules Creek JV	Yes
Kelso	508	now owned by Maules Creek JV	Yes
Louenville	459	now owned by Maules Creek JV	Yes
Ollvedeen	193	now owned by Maules Creek JV	Yes
Teston (sth)	1,273	now owned by Maules Creek JV	Yes
Velyama	919	now owned by Maules Creek JV	Yes
Roseglass	1624	Under contract	Proposed
Bimborla	684	Under contract	Proposed
Oakleigh/Onavale	1,577	Under contract	Proposed
TOTAL	19,439		