

Project: Crudine Ridge Wind Farm

Phone: [REDACTED]

Email: [REDACTED]



4 June 2019

Independent Planning Commission of NSW

Dear Commissioners,

RE: SSD 6697 | Crudine Ridge Wind Farm | Modification

This document is provided in response to the recommended conditions of consent issued by the Department of Planning and Environment (DPE). It has been prepared to demonstrate to the Independent Planning Commission (IPC) our commitment to implementing clear and compliant environmental management practices, and moreover our readiness to recommence construction of the Project.

The subsequent pages outline proposed additions to the Biodiversity Management Plan (BMP) and community engagement actions that are intended to bolster existing management practices. These measures are in direct response to the recommended conditions of consent and aim to ensure that construction of Aarons Pass Road is undertaken in accordance with the assessed impacts, verified and validated, and communicated effectively to all project stakeholders.

We welcome your feedback on the information within and look forward to your correspondence.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Ed Mounsey', written in a cursive style.

Ed Mounsey
Chief Operating Officer & Head of Development
CWP Renewables Pty Ltd

1. Minimising Biodiversity Impacts along Aarons Pass Road

Section 4.1: Minimising vegetation to be cleared

Identifying Clearance Boundaries

Prior to the commencement of any clearing activities on Aarons Pass Road the approved road design will be overlain with the vegetation mapping contained in ELA (2018) to produce a Site Disturbance Map for Aarons Pass Road.

The map will include the location of:

- The disturbance corridor for the construction of Aarons Pass Road consistent with the revised design assessed in the Modification;
- Vegetation mapping:
 - PCT 277 (Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion);
 - PCT 290 (Red Stringybark – Red Box – Long-leaved Box – Inland Scribbly Gum tussock grass shrub low open forest on hills in the southern part of the NSW South Western Slopes Bioregion);
- Disturbed and non-native vegetation;
- Known hollow bearing trees which will require lopping;
- Individual plants of *Acacia meiantha* to be retained, removed or relocated (refer to Translocation Plan);
- Individual plants of *Pomaderris cotoneaster* to be retained or removed; and
- Where appropriate the locations of stockpiles, laydown areas and other temporary construction facilities if they impact on native vegetation.

The Site Disturbance Maps will use the vegetation mapping undertaken for the Biodiversity Development Assessment Report (BDAR) in the Modification, which was endorsed by the NSW Office of Environment and Heritage following a site inspection in April 2019.

The Site Disturbance Map will be prepared by the EPC Contractor and approved by the Project Environment Officer prior to the commencement of any works in the designated area.

Clearing Chainage Table

Once the Site Disturbance Map has been prepared, a Clearing Chainage Table will be created. This Table will contain the type and location of vegetation to be cleared in each 100m section of Aarons Pass Road for each PCT. This will include a description of hollow bearing trees which will require lopping and the location of *Acacia meiantha* and *Pomaderris cotoneaster* to be retained, removed or relocated.

Table 1: Table of Clearing Activities

Date	Start chainage	Finish chainage	PCT	Permitted clearing	Actual clearing	Cumulative total (ha)	Fauna finds	Hollow Bearing Trees

Demarcation of the disturbance corridor

The disturbance corridor will be marked in the field by a qualified surveyor working with a suitably qualified ecologist. This will involve marking the extremities of vegetation to be cleared as indicated on the Site Disturbance Map. Where appropriate it will include identifying known hollow bearing trees which will require lopping and the location of *Acacia meiantha* and *Pomaderris cotoneaster* to be retained, removed or relocated.

Once marked in the field the provisions of section 4 of the Biodiversity Management Plan will apply to preclearance procedures for fauna relocation, as well as vegetation clearance and associated mitigation measures in accordance with the Development Consent.

Site Disturbance Mapping

Figures 1 – 3 provide conceptual diagrams of the existing road layout and new disturbance footprint, to demonstrate how the Site Disturbance Maps will be prepared. Following the clearing activities, clearing reporting will be undertaken using qualified surveyors and ecologists to validate the extent of vegetation clearing against the vegetation polygon data, as described above. The two examples in Figure 2 and 3 demonstrate how this work will be undertaken.

Figure 1: Example of the Revised Design compared to the existing roadway

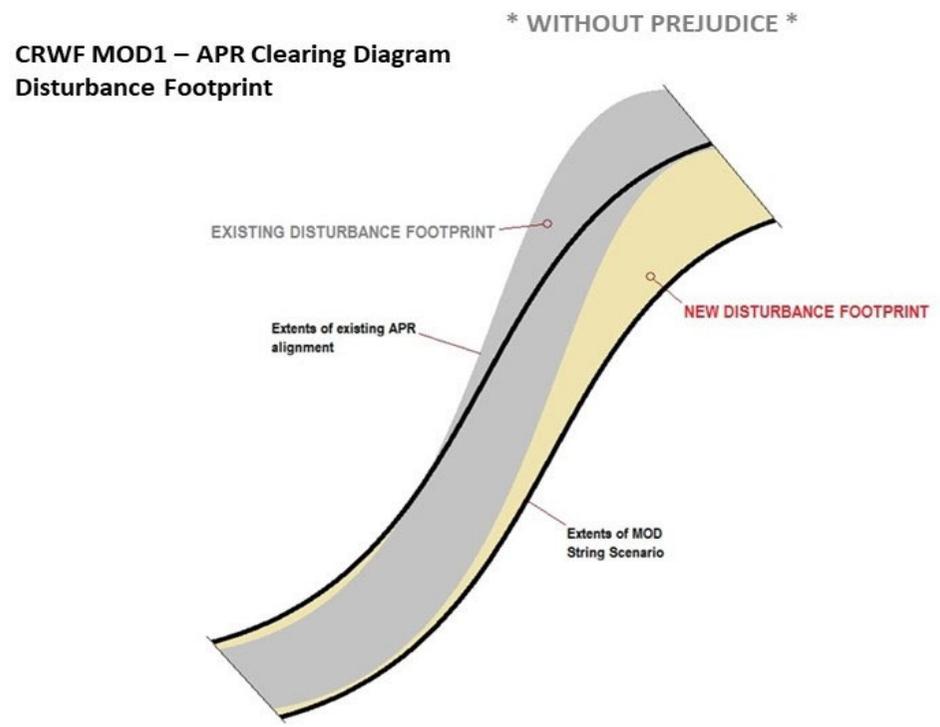


Figure 2: Example of a Site Disturbance Map

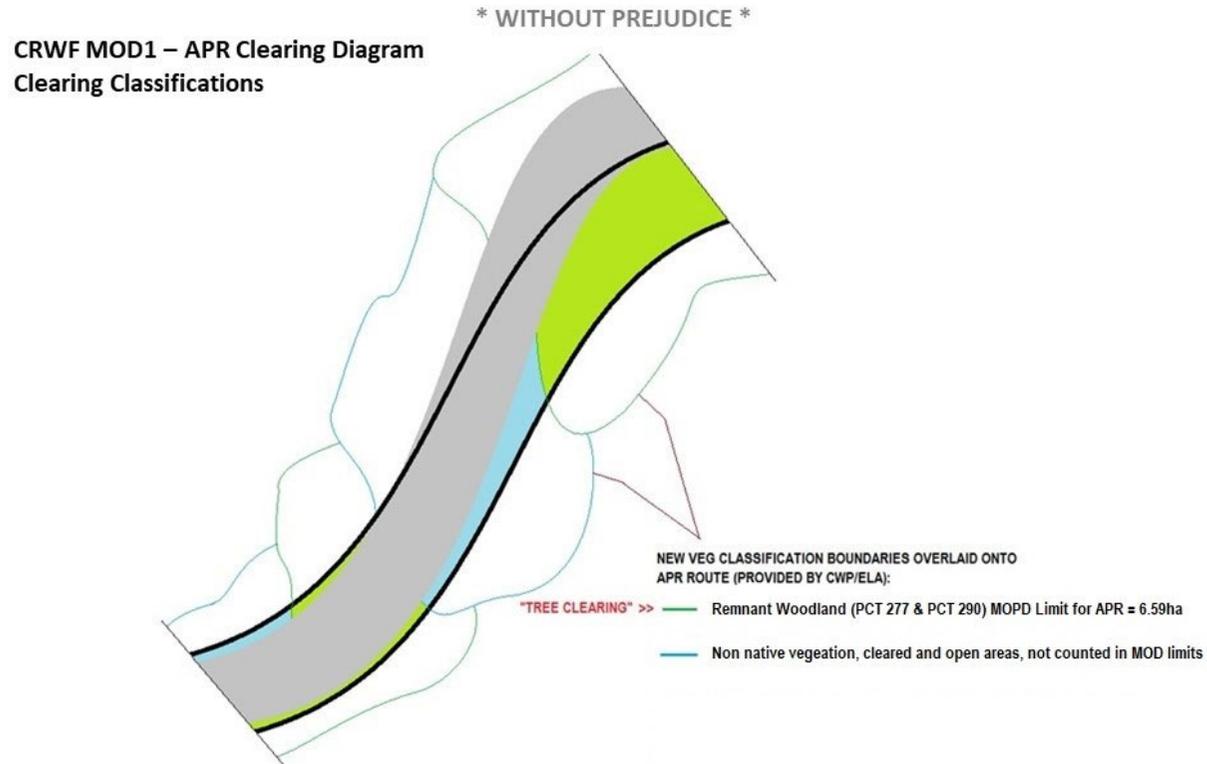
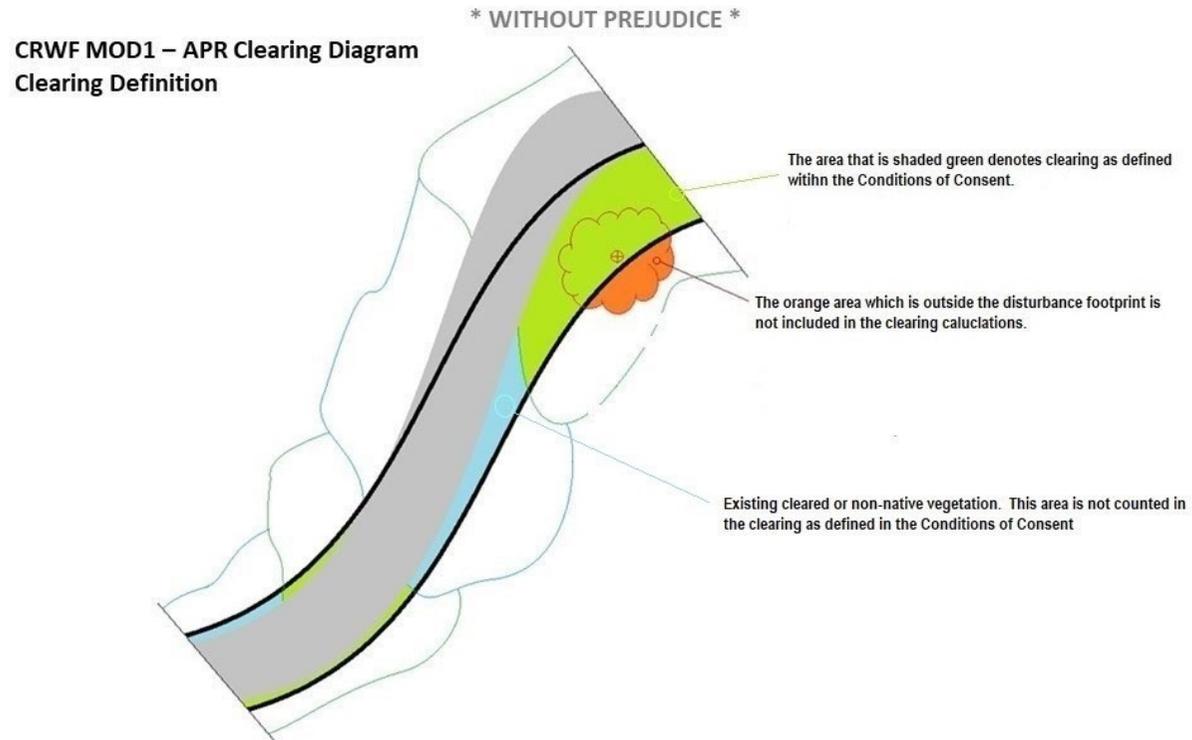


Figure 3: Example of the polygon calculation methodology



Rehabilitation and revegetation

The vegetative debris from the clearing of Aarons Pass Road will generally be mulched. The mulch will be stockpiled in cleared areas for use in stabilisation works along Aarons Pass Road. It will not be spread until the area of clearing has been verified by a suitably qualified ecologist. The location of areas to be stabilised with mulch will be determined by the EPC Environmental Officer in consultation with the Project Environmental Officer. Areas which have not been cleared will not be used for mulch spreading.

Any mulch not used for stabilisation works along Aarons Pass Road may be used within the wind farm footprint for rehabilitation and batter stabilisation works. This will be done in accordance with the approved the Environmental Management System.

Large woody debris being the trunks and lower limbs of trees that have been cleared, can be used to enhance habitat features in the areas cleared along Aarons Pass Road. The narrow road corridor along Aarons Pass Road means that most areas are not suitable for habitat enhancement with large woody debris. However, where it does not create a safety hazard and it is within an area that has been cleared it will be used to create habitat features within cleared sections of the Aarons Pass Road corridor.

Where reuse is not safe, practicable nor feasible the large woody debris may be relocated within the wind farm footprint for habitat enhancement. Alternatively, it may be used on the biodiversity offset area or removed from road corridor altogether and disposed of legally.

Monitoring and reporting of vegetation clearing

Sections 5 and 6 of the BMP is proposed to be updated to include the following measures to ensure compliance with the revised conditions is achieved.

- At the end of each day that clearing is undertaken, a walkdown by the Project Environmental Officer and a suitably qualified ecologist will occur and a Daily Clearing Inspection Record will be produced verifying the amount and type of vegetation that has been cleared and the number of hollow bearing trees that have been lopped. The Record will also include details of *Acacia meiantha* removed or relocated and *Pomaderris cotoneaster* removed.

Table 2: Table of Clearing Activities (same as Table 1)

Date	Start chainage	Finish chainage	PCT	Permitted clearing	Actual clearing	Cumulative total (ha)	Fauna finds	Hollow Bearing Trees

On a weekly basis the EPC Environment Officer will generate a Clearing Report for the works on Aarons Pass Road.

- The report will include a cumulative amount of vegetation cleared by PCT against the approved amount of clearing as outlined in Schedule 1 Condition 19 (a) of SSD-6697 MOD1;
- The areal extent of clearing will be verified by a suitable qualified surveyor and form part of the weekly report; and
- A weekly inspection by a suitably qualified ecologist will occur during clearing activities to verify clearing against Schedule 1 Condition 19 (a) of SSD-6697 MOD1.

Details on the amount and linear extent of clearing for Aarons Pass Road will be published on the Project's website and posted on the Project's Facebook page.

At the completion of clearing activities along Aarons Pass Road, the weekly Clearing Reports will be compiled into a Final Clearing Report. The Final Clearing Report will be submitted to the DPE within four weeks of the completion of the clearing activities. The Final Clearing Report will be supplied to the Independent Auditor pursuant to Schedule 5 Condition 8 of SSD 6697 MOD1.

2. Translocation Plan

A Translocation Plan for *Acacia meiantha* was developed as part of the Modification documentation in consultation with OEH. In accordance with the recommended conditions of consent, this Translocation Plan will be adopted adhered to in accordance with the updated BMP. For completeness, a copy of this Translocation Plan is included in this package for the IPC.

3. Aarons Pass Road Induction

A Site Induction specific to Aarons Pass Road will be prepared to ensure that all staff involved in the upgrade of Aarons Pass Road. It will include information on the following:

- A clearly articulated mission statement that – “If it is not marked for clearing do not clear it”;
- Definition of clearing activities;
- Location of vegetation clearing zones;
- Survey markers used to identify vegetation clearing zones
- Location of zones not to be cleared;
- Survey markers to identify no go zones
- The process for when there is no marking in place;
- Clearing of habitat trees;
- Contact details for site ecologist;
- The protocol for dealing with native fauna;
- The process for dealing with public complaints and the media;
- Location information for *Acacia meiantha* and *Pomaderris cotoneaster*; and,
- Photos of *Acacia meiantha* and *Pomaderris cotoneaster*.

The overarching theme of the Aarons Pass Road Upgrade Site Induction is – “If it is not marked for clearing do not clear it”.



Acacia meiantha



Pomaderris cotoneaster

4. Community Engagement

The Project engages with the community using a range of platforms including a dedicated Project webpage, social media presence, emails and phone calls to neighbours, newsletters, mailouts and personal contact.

Webpage

The existing Crudine Ridge Wind Farm webpage will be updated to include a dedicated page for the Aarons Pass Road upgrade. This page will include:

- Consent documentation;
- Procedures for managing threatened species;
- Clearing protocols;
- Clearing statistics for the previous week;
- Community engagement strategy; and,
- Complaints process.

The page will be regularly updated and will be communicated to the community when launched prior to commencement of works on Aarons Pass Road.

A draft example of the specific Aarons Pass Road webpage is provided below.



Why we are Upgrading Aarons Pass Road

In April GEZ did some much needed maintenance to Aarons Pass Road. We received a number of emails and calls complementing GEZ and local company A1 Earthworks on the great job that they were doing.

Aarons Pass Road now needs to be upgraded. Once upgraded the road will be in the best condition its ever been and will give Mid Western Regional Council an outstanding asset.

In order to undertake a complete upgrade of Aarons Pass Road 6.59 hectares of native vegetation has been approved for removal. Additionally there are several areas of non native vegetation and weeds along the roadside which will also be removed.

When calculating the amount of vegetation to be removed a works buffer was placed around the approved road design to allow for construction activities to occur.

The blade sweep path was taken into account. This will require pruning of vegetation in some areas to allow for the passage of the blade components of the wind turbines.

Clearing Protocol

This is how we will clear ARP

A Site Disturbance Map has been prepared for the entire length of Aarons Pass Road. It includes:

- The road design,
- All areas to be disturbed
- Location of Vegetation communities (PCT 277, PCT 290, non native)
- Individual *Acacia meiantha* and *Pomadouris colonosutor* to be retained

A Clearing Chainage Table has been developed that details all the clearing activities within each 100 m section of road.

A Surveyor has marked out all the areas that are allowed to be cleared, the no go zones and hollow bearing trees.



Weekly Clearing Statistics

At the end of each day an inspection is done by the Ecologist and the Daily Inspection Record is updated.

At the end of each week the Surveyor and Ecologist undertake a survey of the week's clearing and produce a Weekly Inspection Report. A copy of the Weekly Inspection Report can be found here.

The Road is also inspected weekly by an Independent Ecologist.

Weekly Clearing Statistics Table

Chainage Start	Chainage End	Vegetation Type End	Clearing Allowed	Clearing Undertaken	Clearing Cumulative
0m	100m	PCT 277	0.2	0.1	0.1
100m	200m	PCT 277	0.1	0.1	0.2

Weekly Construction Lookahead

Managing *Acacia meiantha*

A number individual specimens of *Acacia meiantha* have been identified for removal and translocation.

An *Acacia meiantha* Translocation Plan has been prepared and can accessed here

Community Engagement

The upgrade of Aarons Pass Road by GEZ and their local contractor A1 Earthworks will take approximately eight weeks to complete.

During this time there may be short delays.

If you're planning on travelling along Aarons Pass Road please check the latest conditions and travel times on our Facebook Page or call us on 1300 524 463 for an update.

Community Complaints

We take complaints seriously at CWP and we recognise that there will be times when things don't appear to be running smoothly.

If you've got a complaint then please call us on 1300 524 463 or use the Contact Us form below and we will respond within 24 hours of receiving the complaint.

Need more information? Please fill in the Contact Form below and we'll get back to you

Your Name (required)

Your Email (required)

Subject (required)

Your Message (required)

Send

Social Media

The Project uses social media (Facebook) to communicate with the community. Weekly updates will be posted to this platform comprising aspects such as:

- Clearing activities for the week;
- Construction progress; and,
- Weekly look ahead for clearing and construction.

Neighbour Engagement

The neighbours of Aarons Pass Road will be directly impacted by the road upgrade. We will minimise the impact through:

- Personal contact which will occur prior to the commencement of works and be ongoing through the upgrade works;
- Provision of written material with contact details of key personnel supervising the upgrade works and indicative works schedule; and,
- A commitment to ensuring that local traffic has priority along Aarons Pass Road.

Local and State Government

Local and State Government agencies need to be kept up to date on all facets of the upgrade. This will be achieved through:

- Briefing MWRC prior to the commencement of works;
- Sharing the link from the Project Webpage to MWRC;
- Ensuring MWRC are aware of the Complaint Procedure and are able to pass on any complaints they receive; and,
- MWRC, OEH, DPE will receive weekly updates of clearing activities via email.

Community Complaints

The Project's Complaint Procedure will apply to the works on Aarons Pass Road.

- All complaints will be responded to within 24 hours of receipt;
- All complaints will be logged and entered into the Community Complaint Register and published monthly on the website;
- Complaints can be made:
 - Via the 1300 number;
 - Via the Website;
 - Via Facebook Page;
 - In person; and,
- The complainant is contacted to address the concern and to identify appropriate actions to prevent a recurrence in the future.

5. Biodiversity Offsets

In accordance with the Modification, and in line with the recommended conditions of consent, the Project intends to fund an additional environmental offset for the clearing of vegetation associated with the construction of Aarons Pass Road. Eco Logical Australia have prepared a letter outlining how this additional offset can be satisfied, which again for completeness is provided as part of this package of documentation for the IPC.

Project: Crudine Ridge Wind Farm
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Annexure 1: Translocation Plan

TRANSLOCATION PLAN

Acacia meiantha –Wattle (Fabaceae)

Summary

Translocation is defined as the deliberate transfer of plants or animals from one place to another, including existing or new sites. Whilst attempts at translocation of threatened species is often risky and can fail, this is usually because the original threats have not been removed, or the biological and ecological requirements for the species is not well understood. *Acacia meiantha* is listed as an endangered species under both Commonwealth and NSW legislation and is currently known from three distinct populations, one of which occurs along Aarons Pass Road (APR). An upgrade to APR has been proposed to facilitate the movement of wind turbines, associated infrastructure and access to the Crudine Ridge Wind Farm (CRWF). The proposed development has identified 59 individual *A. meiantha* plants within the designated impact area that will need to be removed.

Whilst irreversible impacts to these individuals have been considered as part of the Biodiversity Development Assessment Review (BDAR) for the proposed upgrade and offset credits for this species have been calculated, it is recommended that these individuals be salvaged and translocated to increase knowledge of the species. Translocation of the species has been recommended, not as a mitigation measure, but purely as an opportunity to potentially reduce the loss of individuals by increasing knowledge and to directly support the conservation of the species. There is limited information available on the success of translocating *A. meiantha*.

The proposed method is to translocate and take cuttings from plants that have been identified within the impact zone during the proposed road upgrade, to a nursery to be grown in pots until they are showing signs of recovery and an appropriate field site has been secured. This will assist in understanding the species and to conserve the wild genetic stock. An increased understanding of these aspects will improve the finer scale approach to the recovery of the species. Translocation procedures should follow the “Guidelines for the translocation of threatened plants in Australia, 3rd Ed” (Commander et al. 2018).

Acacia meiantha

Acacia meiantha is a straggling shrub usually 1.5 m high but sometimes up to 2.5 m tall flowering in July to October. It has smooth greenish brown bark with straight to slightly curved phyllodes with an indistinct midvein. It produces fruit from November to December and occasionally in August (Tindale et al 1992). It occurs as three distinct populations all located within the Central Tablelands, at Clarence (near Lithgow), at Mullions Range (near Orange) and along APR. The APR population was discovered in October 2011 and is primarily confined to the road easement. The APR population occurs in old growth low forest in association with *Eucalyptus macrorhyncha* (Red Stringybark) and *E. rossii* (Inland Scribbly Gum).

The species was declared an endangered species under Part 1 of Schedule 1 of the (now repealed) *Threatened Species Conservation Act 1995* in 2015 due to the geographic distribution of the species being highly restricted. The population along APR is estimated to be between 750-1000 individuals. Due to the proposed APR upgrade, it is likely that 59 individual plants will be impacted by the proposed road works. These individuals have been tagged for translocation.

Translocation Goals

- To improve the status of *Acacia meiantha*.

- To translocate individuals and establish cuttings firstly from site into pots and then into the wild successfully.
- To increase the population by establishing a self-sustaining population.
- To increase knowledge and understanding of the species.

Translocation Procedure

1. Identify and manage risks

Consultation with regulatory authorities will be undertaken prior to translocation. This will involve determining any scientific licensing requirements under the *Biodiversity Conservation Act 2016* and to allow an opportunity to discuss and further justify the proposed methods.

All risks and threats associated with the translocation should be identified, controlled or mitigated. Some possible risks are identified in the **Table 1** below.

Table 1: Translocation risk assessment

RISK	LIKELIHOOD	CONTROL
Species becomes invasive and weedy outside its range	Unlikely	<i>A. meiantha</i> is highly restricted in its distribution and is unlikely to become an invasive weed within the same landscape. Care must be taken to ensure the plant doesn't become established outside of its current range.
Lack of ongoing funding and commitment to monitoring and managing the translocation site	Potential	There must be a financial commitment to manage and monitor <i>A. meiantha</i> .
Threats to the survivability of the species was incorrectly identified	Potential	Given that little is known about the species in terms of its biological and ecological requirements, attempts at translocation may not be successful. However, these individuals will otherwise be removed by the road upgrade, therefore any attempts of establishing them ex situ are worthwhile.
Introduction of pests and diseases	Unlikely	All equipment used during planting will be maintained under strict disease hygiene.
Unsupportive community attitude	Potential	The proponent will liaise with community about the process.
Lack of Regulatory agency support	Potential	Species is part of Saving Our Species (SOS) program and <i>A. meiantha</i> has been identified as a species to be managed in situ. However, given that these individuals will be impacted under the proposed road upgrade this provides an opportunity to study the species ex situ.
Lack of long-term security over translocation site	Potential	Secure site. Conservation covenant or agreement.

2. Site Procedure

It is Eco Logical Australia's experience that translocations have an increased success rate if plants on site are removed, nurtured in a nursery and monitored. To remove plants from site, the following process should be followed:

- Plants identified for removal should be watered and allowed to drain.
- Soil should be wet but not sloppy.
- An area around the plant, as wide as the canopy and as deep as possible should be cut out from around the plant.
- As much soil and root material should be retained as possible around individuals that are identified as suitable for translocation. Those individuals where translocation may be deemed unlikely to be successful can be used for cutting material. The decision to use material for translocation or cutting should be made in the field by a suitably qualified botanist.
- Plants should be potted on site into Grow Bags and watered.
- Plants and plant material should be transported to the nursery in a closed vehicle to avoid damage by wind. It may be necessary to remove some vegetation which can be used as cutting material to reduce the transpiration rate.
- Once at the nursery the trees should be monitored and watered regularly.
- In the mean-time, a translocation field site can be secured and prepared.

A. meiantha is known to be sucker forming in both dense and diffuse clumps of stems arising from the roots of a single plant (Eldridge 2015). Whilst this may make it difficult to identify individual plants, it is possible that any root material left behind may regenerate. Additionally, collecting the top soil from around the plants and the soil seed bank into trays may also increase the likelihood of establishing plants in ex situ. Cuttings could also be established from those individuals salvaged off site to further increase the number of plants ex-situ.

3. Selecting release sites

A release site should meet all the practical need of the species:

- Meet all biotic and abiotic requirements, same soil type and vegetation.
- Be appropriate for all life stages.
- Be adequate for all seasonal requirements.

Successful translocations are more likely if the plants are nurtured offsite in a nursery and regularly tended to until they are deemed healthy to translocate into the field. Survival rate is critical in the first year, mortality rate can be up to 50% of individuals due to hot dry summers or frosts (Commander et al 2018). In the nursery, cuttings can also be taken to increase the number of propagules further increasing the likelihood of success.

4. Monitoring and evaluate

Monitoring is a cyclical process of implementation, monitoring, feedback and adjustment for both biological and non-biological aspects until goals are met or the translocation / cuttings are deemed unsuccessful. Monitoring of the translocated individuals and those derived from cuttings should include:

- counting surviving plants
- measuring height
- width of crown
- general health
- presence or absence of flowers, pods and other fertile material

- identification of any new threats.

Monitoring data may be made available to regulatory agencies as required and potentially included in annual reporting requirements under the Project Approval.

References

Commander, LE, Coates, DJ, Broadhurst, Offord, CA, Makinson, RO and Mattes, M. (2018) Guidelines for the translocation of threatened plants in Australia, 3rd Ed. http://www.nespthreatenedspecies.edu.au/Translocation%20Guidelines_FINAL%20WEB2.pdf

Eldridge, M. (2015) NSW Scientific Advisory Committee Final Determination *Acacia meiantha*, <https://www.environment.nsw.gov.au/resources/threatenedspecies/determinations/FDAcaciameiaES.pdf>. Accessed 12/12/18

Royal Botanic Gardens and Domain Trust (2013) PlantNET – The Plant Information Network System of The Royal Botanic Gardens and Domain Trust, Sydney, Australia (version 2.0). <http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Acacia~meiantha>(accessed 12/12/2018)

Tindale MD, Kodala PG, Herscovich C (1992) *Acacia meiantha* (Fabaceae, Mimosoideae), a new species from the Central Tablelands of New South Wales. *Australian Systematic Botany* **51**, 761–765.

Project: *Crudine Ridge Wind Farm*

Phone: [REDACTED]



Annexure 2: Biodiversity Offsets



4 June 2019

Our ref: 19MUD / 13431

CWP Renewables Pty Ltd



Newcastle NSW 2300

Attention: Ed Mounsey

Dear Ed,

RE: Crudine Ridge Wind Farm – Aarons Pass Road Biodiversity Offset

Eco Logical Australia (ELA) is pleased to provide the following advice on Biodiversity Offset options for proposed development on Aarons Pass Road, in accordance with Condition 21 of the Crudine Ridge Wind Farm (CRWF) Recommended Consolidated Consent SSD-6697.

Condition 21 states:

Within 2 years of the commencement of construction, unless the Secretary agrees otherwise, the Applicant must retire biodiversity credits of a number and class specified in Tables 5 and 6 below.

The retirement of credits must be carried out in accordance with the requirements of the NSW Biodiversity Offsets Scheme and can be achieved by:

- i acquiring or retiring 'biodiversity credits' within the meaning of the Biodiversity Conservation Act 2016;*
- ii making payments into the Biodiversity Conservation Fund; and*
- iii funding a biodiversity conservation action that benefits the threatened entity impacted by the development, consistent with the 'Ancillary rules: Biodiversity conservation actions'.*

A Biodiversity Development Assessment Report (BDAR) was prepared by ELA in accordance with the NSW Biodiversity Assessment Methodology (BAM), which identified the biodiversity credits required to offset the proposed development along Aarons Pass Road, shown in Table 1 below.

Table 1: Aarons Pass Road Biodiversity credits required

Threatened entity	Credits
PCT 277 – Blakely’s Red Gum – Yellow Box grassy tall woodland on the NSW South Western Slopes Bioregion	16
PCT 290 – Red Stringybark – Red Box – Long-leaved Box – inland scribbly Gum tussock grass – shrub low open forest on hills in the southern part of NSW South Western Slopes Bioregion	123
Glossy Black Cockatoo	154
Powerful Owl	154
Koala	156
Masked Owl	154
<i>Acacia meiantha</i>	5
<i>Pomaderris cotonester</i>	0

In accordance with Condition 21, each option has been considered and the following advice is provided:

ACQUIRING OR RETIRING ‘BIODIVERSITY CREDITS’ WITHIN THE MEANING OF THE BIODIVERSITY CONSERVATION ACT 2016

Proponents may seek and retire like-for-like credits through a stewardship site agreement, or acquisition through the credits register.

A stewardship site agreement involves purchase of a property which provides suitable biodiversity credits, determined through an assessment process and managed for biodiversity in perpetuity. This process can be lengthy and may not result in the number of credits required, following the assessment.

To acquire credits through the credits register, the proponent can check the credit register for the required credits, make contact with landowners on the ‘landowner expression of interest’ register and lodge a request on the credits wanted register. If like-for-like credits are not available the proponent can seek approval to offset with a broader suite of biodiversity using the variation options. The variation options for the Aarons Pass Road credit requirement as determined from the Biodiversity Assessment Methodology Calculator (BAMC) is attached (Appendix A). Offset areas must include hollow-bearing trees to compensate for the loss of hollow-bearing trees along Aarons Pass Road. This option is dependent on the availability of suitable credits.

MAKING PAYMENTS INTO THE BIODIVERSITY CONSERVATION FUND

The proponent may choose to offset their obligations by making a payment into the Biodiversity Conservation Fund which is calculated using the offset payments calculator in BAM. An offset payment report ran on the 3rd June (Appendix B) shows that the payment required to offset the threatened entities listed in Table 1 is currently \$676,126.93 (including GST) consisting of ecosystem credits to the value of \$252,588.35 (incl GST) and species credits to the value of \$423,538.58 (incl GST). This figure can fluctuate greatly due to market demand and only the most recent report can indicate actual biodiversity payments required.

FUNDING A BIODIVERSITY CONSERVATION ACTION THAT BENEFITS THE THREATENED ENTITY IMPACTED BY THE DEVELOPMENT, CONSISTENT WITH THE 'ANCILLARY RULES: BIODIVERSITY CONSERVATION ACTIONS'

The proponent may choose to fund a biodiversity conservation action that benefits the threatened entity impacted by the development. The funds must be equivalent to the cost of acquiring biodiversity credits as per the calculator. Actions must focus on threatened species that are difficult to manage at a site level due to limited knowledge of its ecology or on research. These potential projects must be discussed and approved by OEH and delivered through Saving our Species program.

ELA can provide further guidance on each of the above options and assist CWP Renewables Pty Ltd in navigating their offset obligations. Please don't hesitate to contact me directly on the number above.

Regards,



Kalya Abbey
Senior Environmental Consultant



BAM Biodiversity Credit Report (Variations)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00013288//19/00013289	Aarons Pass Road Modification -SSD_6697 Mod	28/05/2019
Assessor Name	Assessor Number	BAM Data version *
Cheryl O'Dwyer	BAAS18153	8
Proponent Name(s)	Report Created	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.
	03/06/2019	

Candidate Serious and Irreversible Impacts

PCT	TEC
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box Yellow Box Blakely's Red Gum Woodland
Species	
Acacia meiantha / Acacia meiantha	

Additional Information for Approval

PCTs With Customized Benchmarks
No Changes



BAM Biodiversity Credit Report (Variations)

Predicted Threatened Species Not On Site

No Changes

Ecosystem Credit Summary

PCT	TEC	Area	Credits
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box Yellow Box Blakely's Red Gum Woodland	0.7	16.00
290-Red Stringybark - Red Box - Long-leaved Box - Inland Scribbly Gum tussock grass - shrub low open forest on hills in the southern part of the NSW South Western Slopes Bioregion	Not a TEC	4.4	123.00

Credit classes for 277	Like-for-like options		
	Any PCT with the below TEC	Containing HBT	In the below IBRA subregions

BAM Biodiversity Credit Report (Variations)

	<p>White Box Yellow Box Blakely's Red Gum Woodland (including PCT's 2, 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 506, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1601, 1606, 1608, 1611, 1691, 1693, 1695, 1698)</p>	<p>Yes</p>	<p>Hill End, Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>	
Variation options				
	<p>Any PCT in the below Formation</p>	<p>And in any of below trading groups</p>	<p>Containing HBT</p>	<p>In the below IBRA regions/subregions</p>
	<p>Grassy Woodlands</p>	<p>Tier 2 or higher</p>	<p>Yes (including artificial)</p>	<p>IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>
Credit classes for 290	Like-for-like options			
	<p>Any PCT in the below Class</p>	<p>And in any of below trading groups</p>	<p>Containing HBT</p>	<p>In the below IBRA subregions</p>

BAM Biodiversity Credit Report (Variations)

Upper Riverina Dry Sclerophyll Forests (including PCT's 269, 285, 289, 290, 298, 302, 304, 314, 338, 340, 342, 353, 1088, 1094, 1095)	Upper Riverina Dry Sclerophyll Forests - $\geq 50\%$ - $< 70\%$ cleared group (including Tier 6 or higher).	Yes	Hill End, Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Variation options			
Any PCT in the below Formation	And in any of below trading groups	Containing HBT	In the below IBRA regions/subregions
Dry Sclerophyll Forests (Shrub/grass sub-formation)	Tier 6 or higher	Yes (including artificial)	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Area	Credits
Acacia meiantha / Acacia meiantha	0.1	5.00
Calyptorhynchus lathami / Glossy Black-Cockatoo	5.0	154.00
Ninox strenua / Powerful Owl	5.0	154.00
Phascolarctos cinereus / Koala	5.1	156.00
Pomaderris cotoneaster / Cotoneaster Pomaderris	0.0	0.00
Tyto novaehollandiae / Masked Owl	5.0	154.00

BAM Biodiversity Credit Report (Variations)

Acacia meiantha/ Acacia meiantha	290_Intact	Like-for-like options		
		Only the below Spp		In the below IBRA subregions
		Acacia meiantha/ Acacia meiantha		Any in NSW
		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
Flora	Endangered	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.		
Calyptorhynchus lathami/ Glossy Black-Cockatoo	277_Degraded	Like-for-like options		
		Only the below Spp		In the below IBRA subregions
		Calyptorhynchus lathami/ Glossy Black-Cockatoo		Any in NSW
		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions

BAM Biodiversity Credit Report (Variations)

	Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
277_Intact	Like-for-like options		
	Only the below Spp	In the below IBRA subregions	
	Calyptorhynchus lathami /Glossy Black-Cockatoo	Any in NSW	
	Variation options		
	Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	
290_Degraded	Like-for-like options		
	Only the below Spp	In the below IBRA subregions	
	Calyptorhynchus lathami /Glossy Black-Cockatoo	Any in NSW	

BAM Biodiversity Credit Report (Variations)

		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
		Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	290_Intact	Like-for-like options		
		Only the below Spp	In the below IBRA subregions	
		Calyptorhynchus lathami /Glossy Black-Cockatoo	Any in NSW	
		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions

BAM Biodiversity Credit Report (Variations)

		Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Ninox strenua/ Powerful Owl	277_Degraded	Like-for-like options		
		Only the below Spp		In the below IBRA subregions
		Ninox strenua/Powerful Owl		Any in NSW
	Variation options			
	Any Spp in the below Kingdom		Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
	Fauna		Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	277_Intact	Like-for-like options		
		Only the below Spp		In the below IBRA subregions
		Ninox strenua/Powerful Owl		Any in NSW

BAM Biodiversity Credit Report (Variations)

Ninox strenua/ Powerful Owl	277_Intact	Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
	Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	
	290_Degraded	Like-for-like options		
Only the below Spp		In the below IBRA subregions		
Ninox strenua/Powerful Owl		Any in NSW		
Variation options				
Any Spp in the below Kingdom		Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions	

BAM Biodiversity Credit Report (Variations)

		Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	290_Intact	Like-for-like options		
		Only the below Spp	In the below IBRA subregions	
		Ninox strenua /Powerful Owl	Any in NSW	
		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
		Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Phascolarctos cinereus / Koala	277_Degraded	Like-for-like options		
		Only the below Spp	In the below IBRA subregions	
		Phascolarctos cinereus /Koala	Any in NSW	

BAM Biodiversity Credit Report (Variations)

Phascolarctos cinereus/ Koala	277_Degraded	Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
	Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	
	277_Intact	Like-for-like options		
Only the below Spp		In the below IBRA subregions		
Phascolarctos cinereus/Koala		Any in NSW		
Variation options				
Any Spp in the below Kingdom		Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions	

BAM Biodiversity Credit Report (Variations)

	Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
290_Degraded	Like-for-like options		
	Only the below Spp	In the below IBRA subregions	
	Phascolarctos cinereus /Koala	Any in NSW	
	Variation options		
	Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
	Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
290_Intact	Like-for-like options		
	Only the below Spp	In the below IBRA subregions	
	Phascolarctos cinereus /Koala	Any in NSW	

BAM Biodiversity Credit Report (Variations)

		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
		Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Pomaderris cotoneaster/ Cotoneaster Pomaderris	290_Intact	Like-for-like options		
		Only the below Spp	In the below IBRA subregions	
		Pomaderris cotoneaster/ Cotoneaster Pomaderris	Any in NSW	
		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions

BAM Biodiversity Credit Report (Variations)

		Flora		Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Tyto novaehollandiae/ Masked Owl	277_Degraded	Like-for-like options		
		Only the below Spp		In the below IBRA subregions
		Tyto novaehollandiae /Masked Owl		Any in NSW
	Variation options			
	Any Spp in the below Kingdom		Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
	Fauna		Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	277_Intact	Like-for-like options		
		Only the below Spp		In the below IBRA subregions
		Tyto novaehollandiae /Masked Owl		Any in NSW

BAM Biodiversity Credit Report (Variations)

Tyto novaehollandiae/ Masked Owl	277_Intact	Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
		Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	290_Degraded	Like-for-like options		
		Only the below Spp	In the below IBRA subregions	
		Tyto novaehollandiae/Masked Owl	Any in NSW	
		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions

BAM Biodiversity Credit Report (Variations)

		Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	290_Intact	Like-for-like options		
		Only the below Spp	In the below IBRA subregions	
		Tyto novaehollandiae /Masked Owl	Any in NSW	
		Variation options		
		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
		Fauna	Vulnerable	Hill End,Bathurst, Capertee Uplands, Inland Slopes, Orange and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Biodiversity payment summary report

Assessment Id	Payment data version	Revision number	Report created
00013288//19/00013289	57	5	03/06/2019

PCT list

Include	PCT common name	Credits
Yes	277 - Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	16
Yes	290 - Red Stringybark - Red Box - Long-leaved Box - Inland Scribbly Gum tussock grass - shrub low open forest on hills in the southern part of the NSW South Western Slopes Bioregion	123

Species list

Include	Species	Credits
Yes	<i>Calyptorhynchus lathamii</i> (Glossy Black-Cockatoo)	154
Yes	<i>Ninox strenua</i> (Powerful Owl)	154
Yes	<i>Phascolarctos cinereus</i> (Koala)	156
Yes	<i>Pomaderris cotoneaster</i> (Cotoneaster Pomaderris)	0
Yes	<i>Tyto novaehollandiae</i> (Masked Owl)	154
Yes	<i>Acacia meiantha</i> (Acacia meiantha)	5

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Biodiversity payment summary report

IBRA sub region	PCT common name	Baseline price	Dynamic coefficient	Market coefficient	Risk premium	Administrative cost	Methodology adjustment factor	Price per credit	No. of ecosystem credits	Final credits price
Hill End	277 - Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion Warning: This PCT has NO trades recorded	\$1,360.10			19.99%	\$20.00	1.0000	\$1,651.98	16	\$26,431.74
Hill End	290 - Red Stringybark - Red Box - Long-leaved Box - Inland Scribbly Gum tussock grass - shrub low open forest on hills in the southern part of the NSW South Western Slopes Bioregion Warning: This PCT has NO trades recorded	\$1,360.10			19.99%	\$20.00	1.0000	\$1,651.98	123	\$203,194.03
Subtotal (excl. GST)										\$229,625.77
GST										\$22,962.58
Total ecosystem credits (incl. GST)										\$252,588.35

Species credits for threatened species

Biodiversity payment summary report

Species profile ID	Species	Threat status	Price per credit	Risk premium	Administrative cost	No. of species credits	Final credits price
10140	<i>Calyptrorhynchus lathami</i> (Glossy Black-Cockatoo)	Vulnerable	\$506.66	19.9900%	\$20.00	154	\$96,702.97
10562	<i>Ninox strenua</i> (Powerful Owl)	Vulnerable	\$506.66	19.9900%	\$20.00	154	\$96,702.97
10616	<i>Phascolarctos cinereus</i> (Koala)	Vulnerable	\$434.47	19.9900%	\$20.00	156	\$84,446.01
10648	<i>Pomaderris cotoneaster</i> (Cotoneaster Pomaderris)	Endangered	\$432.54	19.9900%	\$20.00	0	Contact BCT for pricing
10820	<i>Tyto novaehollandiae</i> (Masked Owl)	Vulnerable	\$506.66	19.9900%	\$20.00	154	\$96,702.97
20292	<i>Acacia meiantha</i> (Acacia meiantha)	Endangered	\$1,730.17	19.9900%	\$20.00	5	\$10,480.15
Subtotal (excl. GST)							\$385,035.07
GST							\$38,503.51
Total species credits (incl. GST)							\$423,538.58
Grand total							\$676,126.93