

- ✓ Environmental impact assessments and approvals: REFs, MW REFs, PEAs
- ✓ Ecological, Aboriginal and historic heritage assessments
- ✓ Biodiversity assessment method (BAM) assessments (BDAR) and offsetting (BSSAR)
- ✓ Commercial external landscape architecture designs for built or natural environments
- ✓ Expert witness reports and compliance audits
- ✓ Plans of Management (vegetation, biodiversity, cultural heritage, construction environmental)
- ✓ Aboriginal community engagement
- ✓ Stakeholder and community engagement
- ✓ Peer review / project briefs / budgeting assistance



Topic: Walker Quarries, Wallerawang - correction of biodiversity credit requirements in MOD 3 (to support MOD 4)

Business: AREA Environmental & Heritage Consultants ABN: 29 616 529 867

AREA contact: Addy Watson | Manager & Senior Consultant

Date: 19 August 2025

1 BACKGROUND

Walker Quarries (the operator) owns and operates the Wallerawang Quarry, a quartzite quarry approximately 2.5 kilometres from Wallerawang, NSW, and adjacent to the Great Western Highway (the quarry).

The quarry operates under project approval DA-344-11-2001, and its operation is approved to 2040. The quarry has operated under several modifications since approval was provided in 2001.

On 21 May 2025, AREA Environmental & Heritage Consultants (AREA) prepared a letter report entitled “Walker Quarries, Wallerawang - correction of biodiversity credit requirements in MOD 3 (to support MOD 4)” which supported an application of Walker Quarries Pty Ltd to modify Condition 28A of Schedule 3 of DA 344-11-2001 (MOD 4).

MOD 4 sought to amend errors presented in the 2019 BDAR, which have been incorporated into Condition 28A of Schedule 3 of DA 344-11-2001, to ensure credit calculations, development stages, as well as impact to native vegetation is contained within the approved Modification 3 (MOD 3) boundary.

As noted in AREAs letter report of 21 May 2025, the errors associated with the 2019 Biodiversity Development Assessment Report, and subsequently issued MOD 3 approval, are:

- Areas of proposed impact to native vegetation were incorrectly included in the impact / offsetting calculations. Land outside the proposed MOD 3 boundary, and areas which are associated with previous approvals should not have been included.

- Areas which are not known to be associated with a previous approval but were mapped as not native vegetation in the 2019 BDAR were not included in the calculation. These areas should have been included based on the available GIS layers.

Modification of DA 344-11-2001 is deemed necessary as maintaining the credit calculation as per the existing consent (following the 2019 BDAR) may have the following implications to the operator and/or native vegetation:

- the operator will retire credits for land where impact has not been approved
- the operator will be required to retire credits for impact which has been approved under previous planning provisions (which is contrary to the requirements of the NSW Biodiversity Offsets Scheme and *Biodiversity Conservation Act 2016*)
- misunderstanding by the operator may result in impact to native vegetation outside the approval boundary
- errors are more likely during consideration of any future modifications or expansion proposal.

AREA has been supplied with a submission from Conservation Programs, Heritage and Regulation Group (CPHR) of the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) to the Department of Planning, Housing and Infrastructure requesting additional information to support the proposed modification, namely:

1. Provide additional information and evidence to support the request for credit reduction.
 - 1.1. Justify the methodology used to generate the credit obligation for Table 4.1 of Appendix 4 of the Modification Report.
(Considered in Chapters 3 and 4 of this letter).
 - 1.2. Prepare a summary table which clearly delineates proposed changes to the credit obligations for each PCT within the PADA and the areas outside of the Mod 3 boundary for development. The table should include details on whether the credits have been partially or completely retired, and whether any credits are still outstanding.
(Provided by Table 3-1, Table 3-2 and Table 6-1 of this letter).
 - 1.3. Provide spatial data and any other supporting information, including BAM-C cases and BCT receipts, for each stage of the original approval and subsequent modifications to assist CPHR in verifying the credit obligation.
(The spatial data used in this letter is provided with the submission. The BAM-C case used for the 2019 BDAR is 00011653/BAAS17057/19/00011654)
2. Provide additional information and evidence to support the request for future staging.
 - 2.1. Provide a BAM-C case and supporting spatial data for each of the proposed stages – spatial data will be provided with this letter.
(The BAM-C case ID for the 2019 BDAR is 00011653/BAAS17057/19/00011654. Re-analysis of the data within the BAM-C would not be consistent with this letter which seeks

to re-allocate 2019 BDAR credits and does not seek to redefine the approval area. Further, application of the eastern PCTs as required in a new BAM-C case may complicate/ change the overall credit requirement.)

This letter responds to the request for information of CPHR and further addresses and clarifies the approach to the following.

1. Incorrect biodiversity credit calculations in the 2019 BDAR. It should be noted that the 2019 BDAR highlights that some rounding errors may apply. AREA found challenges reaching the exact same area calculations as the 2019 BDAR, and has adjusted for this as necessary, and within reason. The 2019 BDAR assessment:
 - a. included some areas that were already approved for disturbance – credit requirements should be removed
 - b. included some areas which are not proposed for future disturbance – credit requirements should be removed
 - c. did not include some areas which are not known to be associated with a previous approval but are located within the approved Modification 3 boundary – credit requirements should be included.
2. A proposed update to the stages. Stages provided within the MOD 3 application and the 2019 BDAR have been determined to be inadequate for the rate and direction of future quarry activities.

This letter also uses the term **2019 BDAR**, which refers to data presented within the BDAR document only, available as a pdf for the purposes of this letter.

2 BIODIVERSITY CREDIT REVIEW COMPONENTS

This letter refers to the following components, each measured using spatial layers in GIS software.

- **BDAR native vegetation map.** Vegetation mapping which was used for preparation of the 2019 BDAR (**Figure 2-1**). Some rounding errors may have occurred in the 2019 BDAR (acknowledged in the BDAR) such that this spatial layer shows 0.01 hectares less in two vegetation zones. This discrepancy does not result in a different credit calculation result.

The extent of the BDAR native vegetation map was used to calculate the biodiversity credits assigned to the disturbance / offset stages defined in the 2019 BDAR. As identified in AREAs letter report supporting the application for MOD 4, there were errors in the application of this area to the proposed (and subsequently approved) disturbance area of MOD 3. **Figure 2-1** also shows the extraction area, as approved with the original Environmental Impact Statement (EIS).

- **Previously approved disturbance area (PADA)** – includes the cumulative area of disturbance approved as part of the original development application (DA 344-11-2001), as well as the approved modifications to DA 344-11-2001 which preceded the 2019 BDAR (Modification 1 and Modification 2).

It encompasses most of the current operational area of the quarry. The boundary of these approvals will be referenced when scrutinising the MOD 3 calculations (see below) and is mapped in **Figure 2-2**. Areas of PADA which were incorrectly included in the 2019 BDAR calculations are specifically identified later in this letter as **PADA (part)** (**Figure 2-2**).

- **Modification 3 (MOD 3)** – this modification was granted in February 2020. The biodiversity offset credits associated with this modification are the subject of this letter. MOD 3 was supported by the 2019 BDAR, prepared in accordance with the NSW Biodiversity Offset Scheme, under the *Biodiversity Conservation Act 2016*.

This letter, and the figures included, identifies the MOD 3 boundary (as defined by the approved impact footprint of MOD 3) and seeks to ensure that the biodiversity credit requirements of DA 344-11-2001 apply only to land within this boundary, i.e. native vegetation for which Walker Quarries is approved to disturb and not outside it (**Figure 2-5**).

- **Areas outside the MOD 3 boundary** (and are also outside the PADA) – which have been incorrectly included in the credit calculations (**Figure 2-3**)
- **Discrepancy** – Areas which are within the MOD 3 boundary, outside the provided PADA boundary, but which fall outside the mapped native vegetation of the 2019 BDAR.

The following is noted with respect to the areas of Discrepancy.

- The extent of the 2019 BDAR vegetation mapping represented the extent of native vegetation in these areas at that time.
- A review of available aerial imagery (Google Earth) confirms no additional native vegetation removal between the approval of MOD 1 (which sought to regularise the site boundaries) and fieldwork completed for the 2019 BDAR.

- Hence the discrepancy is likely a result of mapping errors, principally the identification of 'Approved Area of Disturbance' nominated in the environmental assessment supporting MOD 3.
- Implementation of clearing associated with the MOD 3 approval has not yet commenced.

The above notwithstanding, this letter seeks to accept these discrepancies as otherwise unapproved, to assume the presence of native vegetation, and accordingly apply the credit burden as per the adjacent vegetation zones.

Credit calculations in this letter include the areas in this category (**Figure 2-4**).

The GIS layers for these components (as displayed on **Figure 2-1** to **Figure 2-5**) are supplied with this letter.

The 2019 BDAR identified two Plant Community Types (PCT), one of which was described in two condition states i.e., three vegetation zones. The 2019 BDAR was prepared prior to the implementation of the new eastern PCTs. This letter continues using these PCT identifying numbers and name for ease of reference between the 2019 BDAR and this document. These PCTs are:

- PCT 732 (intact): Broad-leaved Peppermint - Ribbon Gum grassy open forest in the north east of the South Eastern Highlands Bioregion (vegetation zone 1)
- PCT 1093 (intact): Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion (vegetation zone 2)
- PCT 1093 (slashed): Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion (vegetation zone 3)

Figure 2-1: BDAR native vegetation with EIS approved extraction area

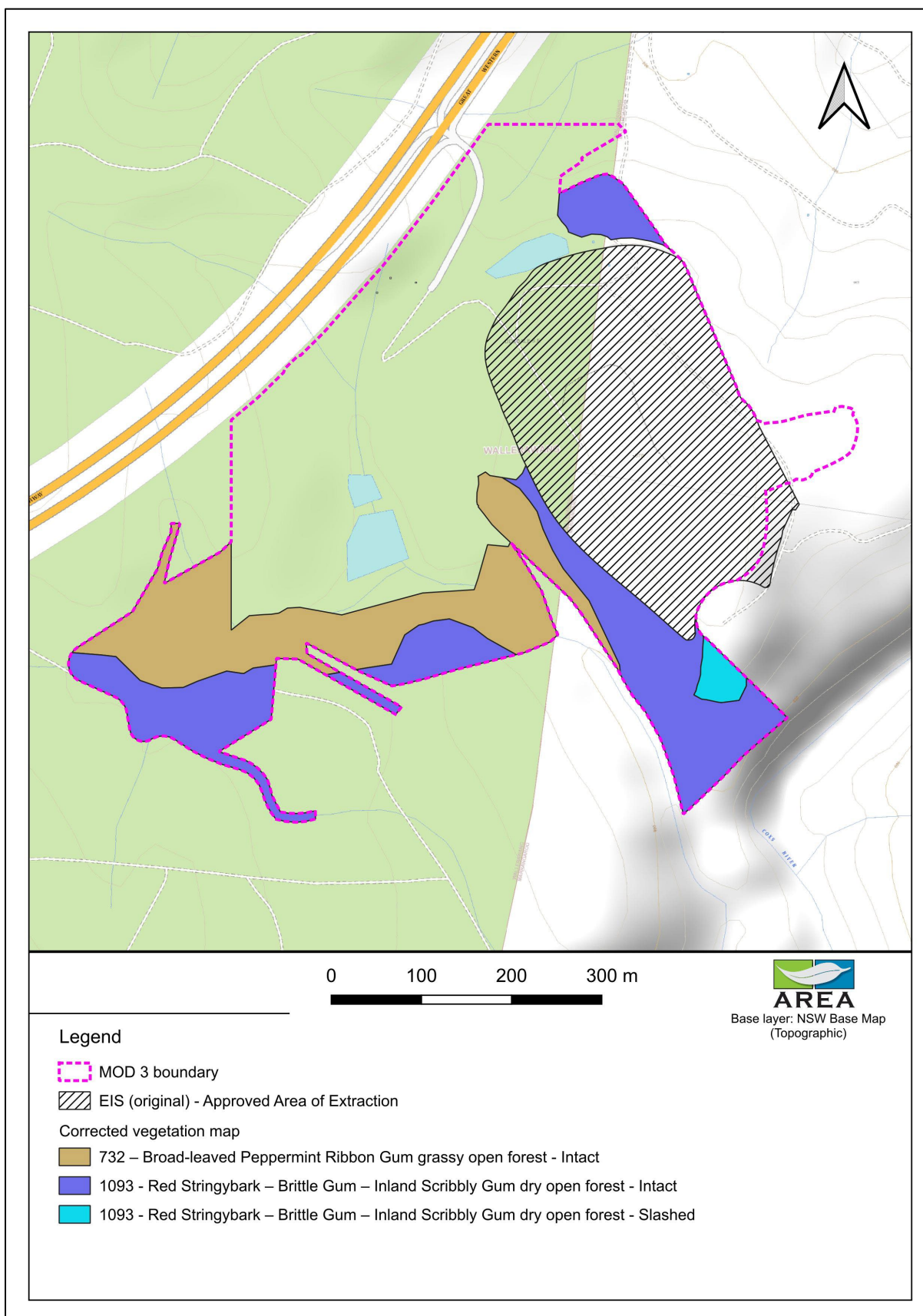


Figure 2-2: Previously Approved Disturbance Area (PADA)

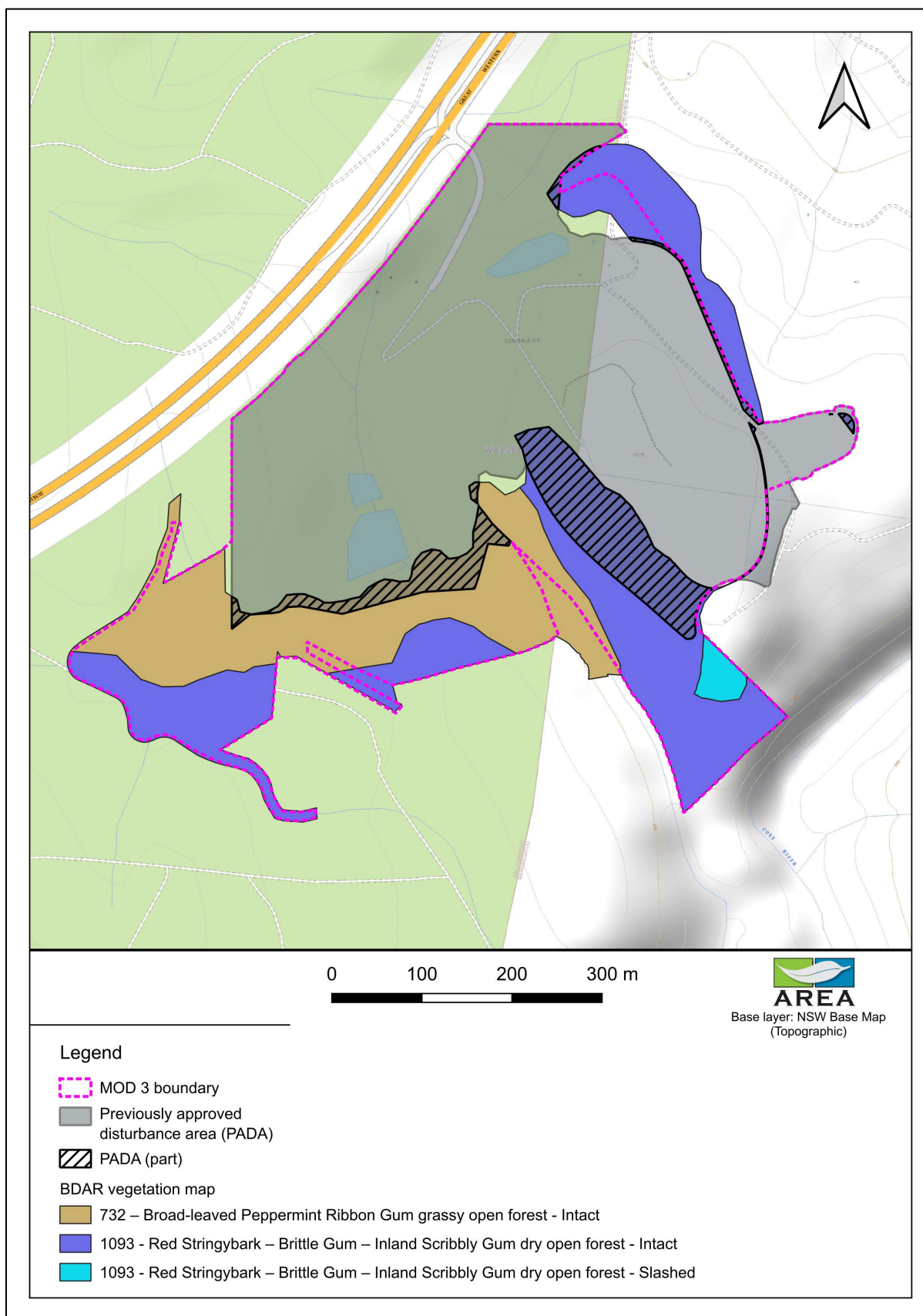


Figure 2-3: Areas outside MOD 3 boundary

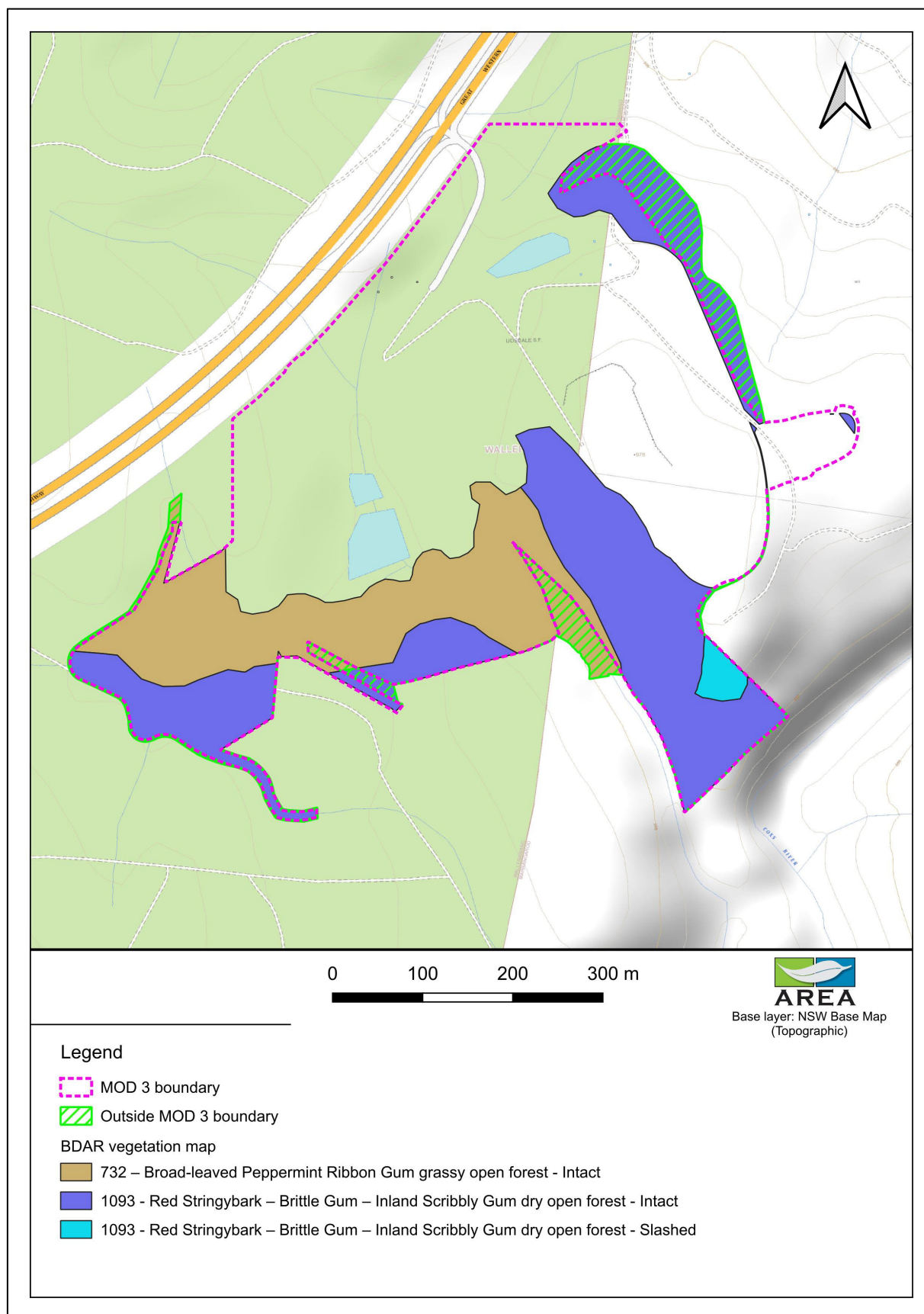


Figure 2-4: Discrepancy areas

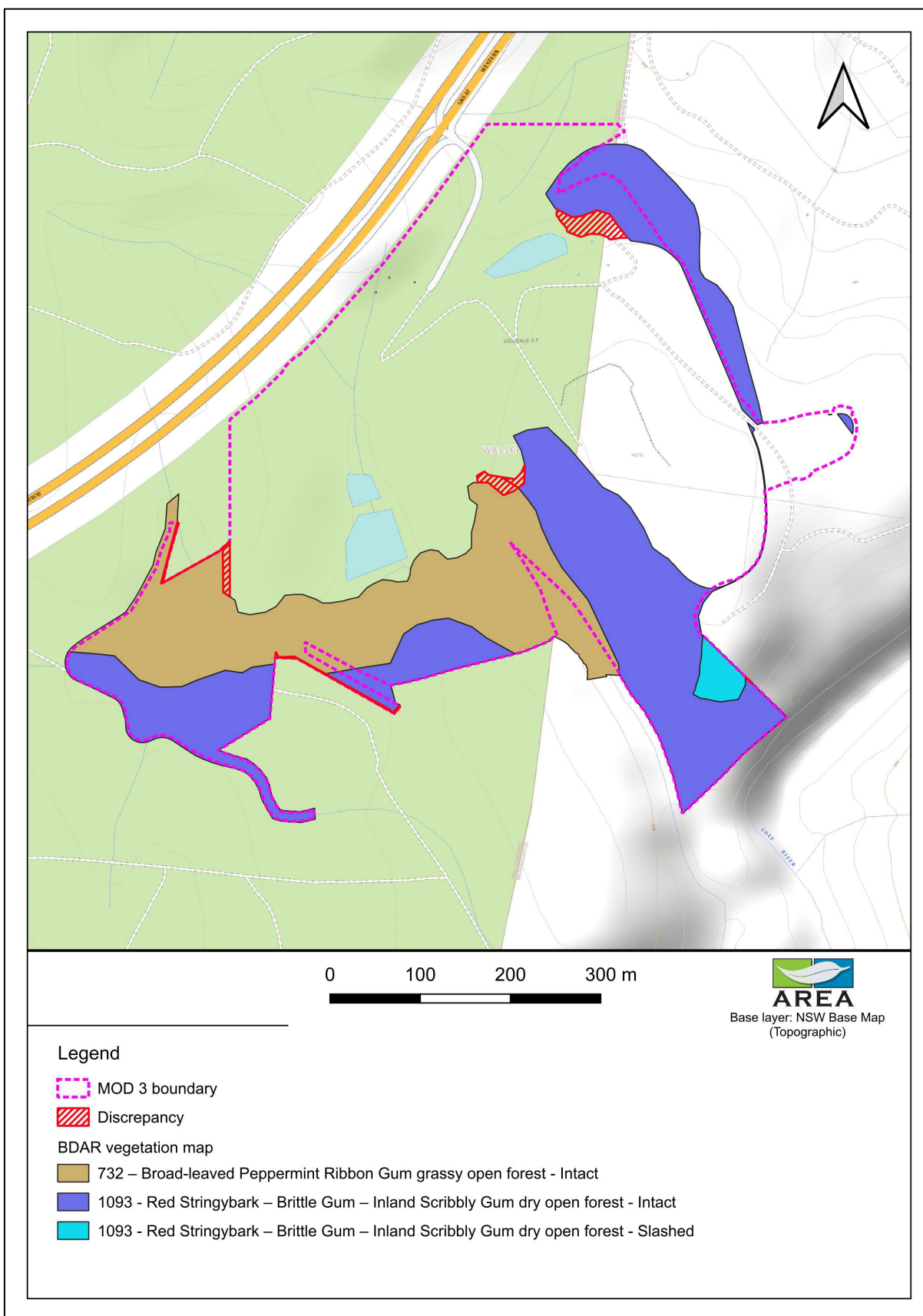
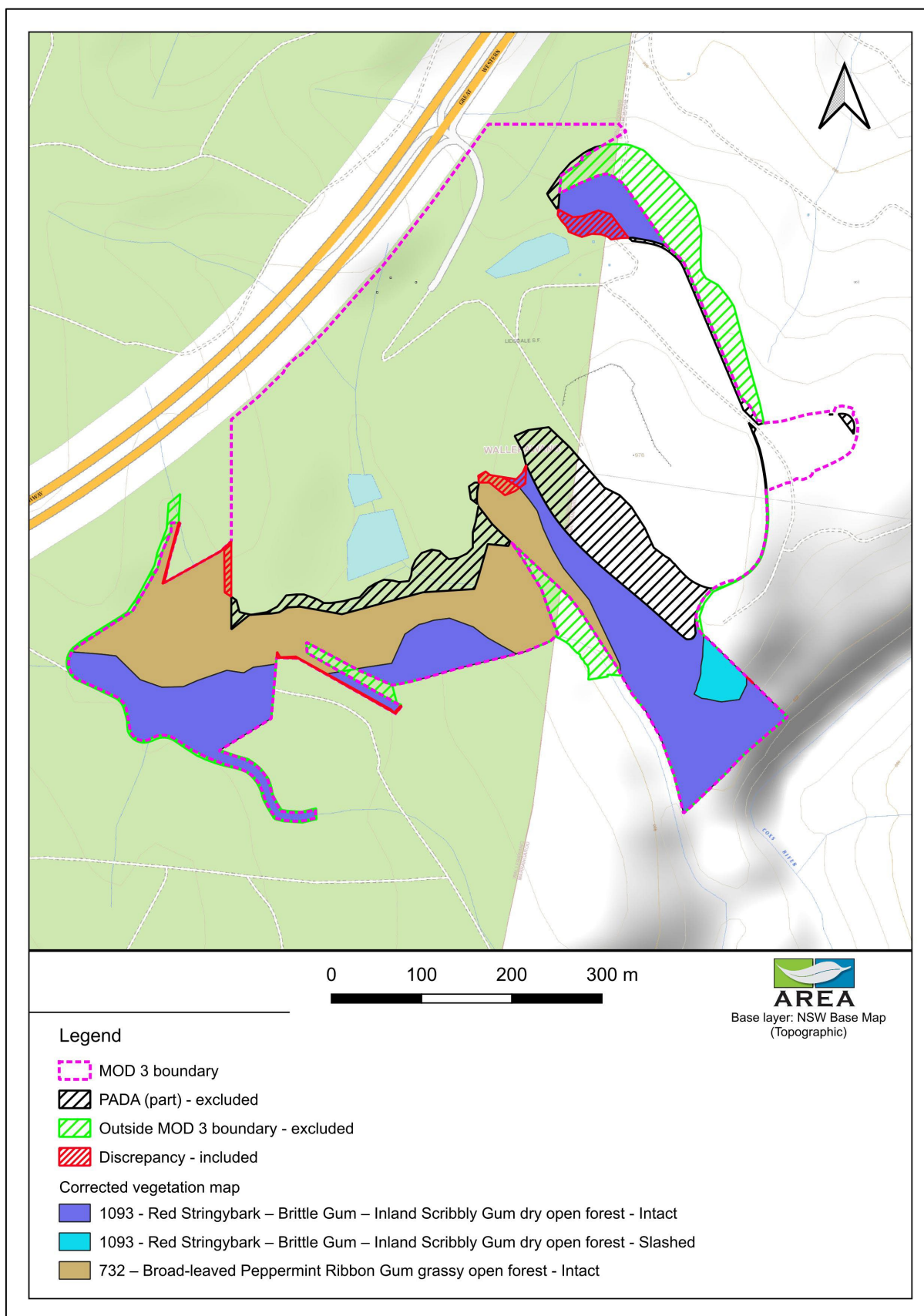


Figure 2-5: Corrected MOD 3 areas



3 METHODOLOGY TO DETERMINE CREDITS PER COMPONENT

Components are listed and described in the previous chapter of this letter. AREA used credits per hectare per vegetation zone method to determine the number of credits allocated to each of the components described on the previous page.

1. Determine how credits are distributed in accordance with the 2019 BDAR

Credits per hectare for each vegetation zone was calculated by dividing the total credits per vegetation zone by the area of each zone. For this calculation, both factors were as per the 2019 BDAR (**Table 3-1**). The resulting 'credits per hectare' is used to determine the credits applicable to other areas within each vegetation zone.

Table 3-1: Credits per hectare (from 2019 BDAR)

PCT ID	Condition	Total credits as determined in the 2019 BDAR	Total hectares as per the 2019 BDAR	Credits per hectare (to the nearest whole credit)	Credits per hectare (decimal number used in calculations)
732	Intact	214	5.54	39	38.6281588447653
1093	Intact	268	8.27	32	32.4062877871826
1093	Slashed	5	0.25	20	20.0000000000000
	Total	487	14.05 ¹		

2. Determine the area (in hectares) of each vegetation zone within each component

Based on the mapping presented in **Figures 2-1 to 2-5** (GIS supplied), the areas for MOD 3 boundary, BDAR vegetation map, discrepancy area, PADA (part) and areas outside the MOD 3 boundary were calculated by scrutinising the intersection between these areas and the BDAR vegetation map prepared for the 2019 BDAR (**Table 3-2**).

Table 3-2: Areas of each component

PCT ID	Vegetation zone	BDAR (ha)	Mod 3 boundary (ha)	BDAR vegetation map (ha)	Discrepancy (ha)	PADA (part) (ha)	Outside the MOD 3 boundary
732	Intact	5.54	4.39	5.53	0.11	0.71	0.55
1093	Intact	8.27	5.25	8.26	0.18	1.79	1.41
1093	Slashed	0.25	0.25	0.25	0	0	0
		14.05 ¹	9.89	14.04	0.29	2.50	1.96

¹ The 2019 BDAR notes "rounding errors may apply"

The corrected areas of each vegetation zone for the MOD 3 boundary were calculated based on the formula below.

$$\text{MOD 3 boundary} = \text{BDAR vegetation map} + \text{Discrepancy} - \text{PADA (part)} - \text{Outside MOD 3 boundary}$$

The 0.01 ha discrepancy is noted with reference to the 2019 BDAR which notes “rounding errors may apply”.

3. **Determine the number of credits actually required for MOD 3** by multiplying the credits per hectare per vegetation zone (step 1 above) by the correct areas within the MOD 3 boundary (step 2 above).
4. **Determine the number of credits which would be associated with each of the other components** including Discrepancy, PADA (part) and area outside MOD 3 boundary (**Table 3-3**).

Table 3-3: Credits of each component

PCT ID	Vegetation zone	BDAR	Mod 3 boundary	BDAR vegetation map	Discrepancy	PADA (part)	Outside the MOD 3 boundary
732	Intact	214	170	214	4	27	22
1093	Intact	268	170	268	6	58	46
1093	Slashed	5	5	5	0	0	0
		487	345	487	10	85	68

4 METHODOLOGY TO DETERMINE CREDITS PER NEW STAGES

Walker Quarries seeks to divide the approved disturbance area into ten stages, increasing from the original four stages identified in the MOD 3 consent, as illustrated in **Figure 4-1**. All stages occur within the approved limit of disturbance (MOD 3 boundary).

The choice of stage boundaries has been chosen based on one of two operational rationales.

- Topographic contours which provide for the progressive clearing and development of the extraction area at 10m vertical intervals (Stages A1-B3).
- Easily definable and distinct components of the MOD 3 disturbance footprint (Water discharge point – Stage B4), Southern Stockpile Area (Stages B5 and B6), Western Stockpile Area Extension (Stage C) and Extraction Stage D (Stage D)

Further the proposed stages seek to provide a logical pathway to rectify credit allocation errors identified in the application for MOD 3. Thirty-nine credits have already been acquitted and would be allocated to fill the complete PCT 1093 credit requirement for proposed stages A1 and A2.

- Determine the area of each vegetation zone within each proposed stage** by intersecting the proposed stages with the PCT map for the correct areas within the MOD 3 boundary (**Figure 2-5** and **Figure 4-1**). The breakdown of the area of each PCT/Vegetation Zone per stage is shown in **Table 4-1** below.

Table 4-1: Proposed stages impact areas (hectares)

Three decimal places used to show rounding for total stage areas

Stage as per DA 344-11-2001	Proposed stage	Area (ha) 3dp	Area (ha) 2dp	Area PCT 732 (intact) (ha)	Area PCT 1093 (intact) (ha)	Area PCT 1093 (slashed) (ha)
A	A1	0.575	0.58	0.053	0.415	0.107
	A2	1.060	1.06	0.334	0.586	0.140
B	B1	0.731	0.73	0.225	0.501	0.005
	B2	0.489	0.49	0.034	0.455	0
	B3	0.493	0.49	0	0.493	0
	B4	0.293	0.29	0.206	0.087	0
	B5	1.655	1.66	1.029	0.626	0
	B6	0.650	0.65	0.650	0	0
C	C	3.382	3.38	1.857	1.525	0
D	D	0.557	0.56	0	0.557	0
	Total	9.885	9.89	4.39	5.26	0.25

2. **Determine the credits per vegetation zone per stage** by multiplying the credits per hectare in each vegetation zone (as per Step 1 in Chapter 2) by the area of each vegetation zone in each stage (Step 1 above) (**Table 4-2**).

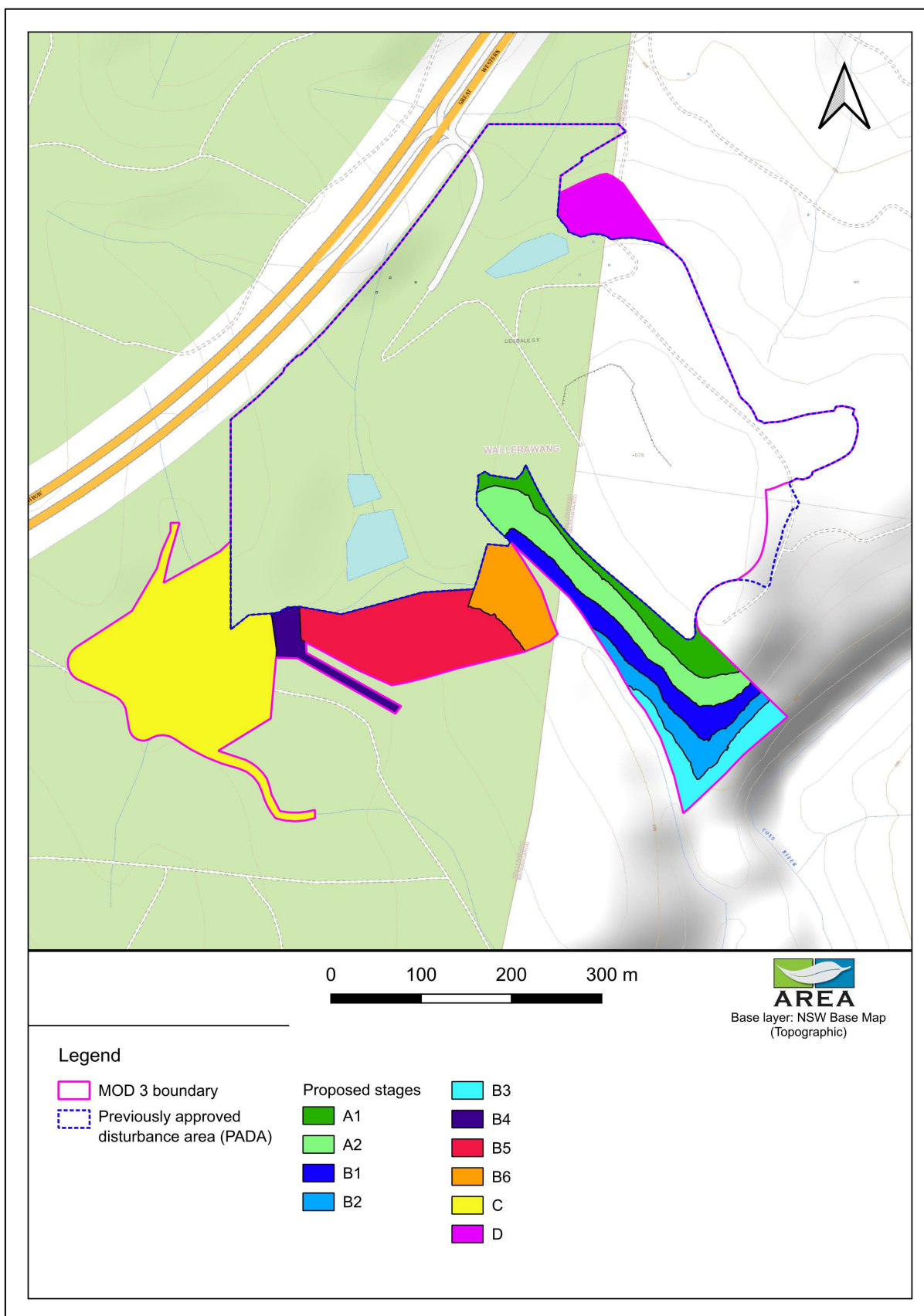
Table 4-2: Number of credits per vegetation zone per stage

Stage	Credits for PCT 732 (intact)	Credits for PCT 1093 (impact)	Credits for PCT 1093 (slashed)	Total credits
A1	2	14 ²	2 ²	18
A2	13	19 ²	3 ²	35
B1	9	16	0	25
B2	1	15	0	16
B3	0	16	0	16
B4	8	3	0	11
B5	40	20	0	60
B6	25	0	0	25
C	72	49	0	121
D	0	18	0	18
Total	170	170	5	345

3. **Cross check** the total number of credits calculated in each zone add to equal the total number of credits calculated within the MOD 3 boundary (Chapter 2).

² Acquitted by Section 6.30 Certificate BCF109

Figure 4-1: Proposed stages



5 ALLOCATION OF ACQUITTED CREDIT BURDEN

Following approval of MOD 3, the Operator (Walker Quarries) paid directly to the NSW Government to acquit 39 credits for PCT 1093. These credits were paid in accordance with Stage 1 (as nominated in the 2019 BDAR) which forms part of Stage A of Condition 28A of DA 344-11-2001³. The Biodiversity Conservation Trust (BCT) receipt for S6.30 certificate 109 is provided with this letter.

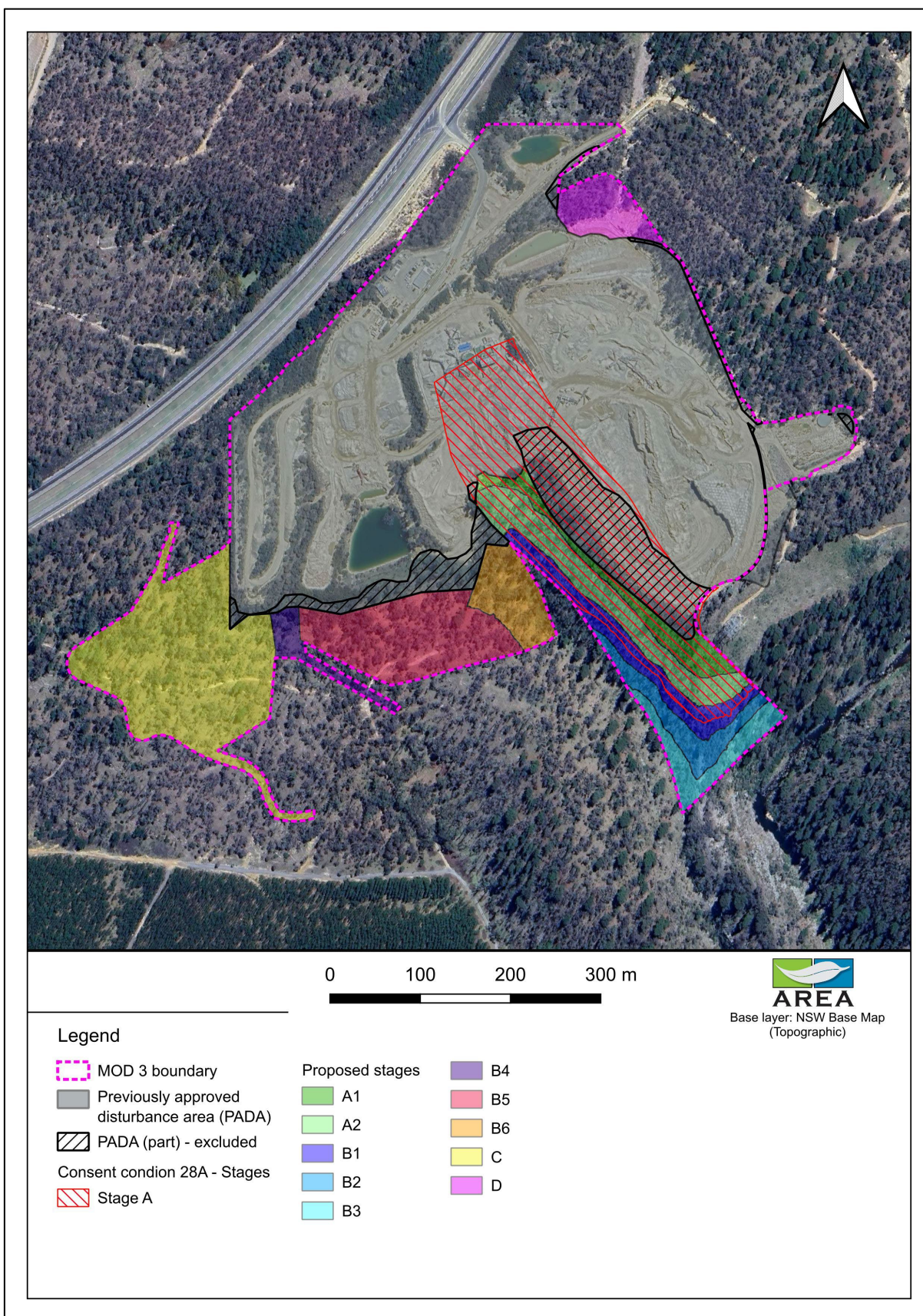
Where quarry activity has cleared native vegetation within Stage A (as per the MOD 3 consent) it is entirely within the PADA (**Figure 5-1**). **Figure 5-1** also shows Stage A (consent) includes PADA and currently undisturbed land. The currently undisturbed land is associated with proposed stages A1, A2 and B1.

Hereafter, these 39 credits would be applied to Stage A1, A2 and B1. Further, prior to commencing clearing in accordance with the corrected MOD 3 boundary, the Applicant recognises the requirement to retire credits for PCT 732 as identified in this letter (section 4).

No clearing has occurred within the corrected MOD 3 boundary, where PADA does not occur.

³ The Department of Planning and Environment combined 2019 BDAR Stages 1 and 3 to create Stage A.

Figure 5-1: Stage A cleared area lies only within PADA



6 SUMMARY AND CONCLUSION

This letter reviews and provides the requested clarification and additional information relating to the recalculation of biodiversity credit requirements requested as MOD 4 to DA 344-11-2001.

The letter confirms the key component areas relevant to the development of the Wallerawang Quarry (as approved by DA 344-11-2001) and addresses the errors in the 2019 BDAR resulting in inaccurate calculation of biodiversity credits for the Wallerawang Quarry. **Table 6-1** compares the area assessed by the 2019 BDAR in calculation and allocation of biodiversity credits against the corrected area (based on the methodology presented in Chapters 3 and 4).

Table 6-1: Summary table

PCT ID	Total hectares as per the 2019 BDAR	Total hectare confirmed within MOD 3	Total credits as determined in the 2019 BDAR	Total credits confirmed within MOD 3	Change in credit requirement
732	5.54	4.39	214	170	44
1093	8.52	5.25	273	170	98
	14.05*	9.89	487	345	142

Critically, this letter confirms no additional direct or indirect impact is proposed outside the approved disturbance boundary. This amendment to credit requirements remains consistent with the approved disturbance area associated with DA 344-11-2001 and will ensure clarity when implementing stages and retiring the required credits. It will also avoid confusion and provide clarity in the event of future modifications to disturbance boundaries, e.g. for a future expansion of the extraction area, at the quarry which require credit requirements to be reassessed.

With reference to the recommendations of CPHR (identified in Chapter 1), **Table 6-2** provides a summarised response.

Table 6-2: Review of CPHR Recommendations

Recommendation		Response
1.1	Justify the methodology used to generate the credit obligation for Table 4.1 of Appendix 4 of the Modification Report	Chapter 2 identifies the key component areas with reference to the 2019 BDAR, application of the NSW Biodiversity Offsets Scheme and approved disturbance footprint of DA 344-11-2001. Chapters 3 and 4 identify how the applicable areas for offsetting were reviewed and corrected along with the methodology for allocation of credits to these revised areas based on the application of the established credit/ha ratio for the three vegetation zones.
1.2	Prepare a summary table which clearly delineates proposed changes to the credit obligations for each PCT within the PADA and the areas outside of the Mod 3 boundary for	Table 4-1 and Table 4-2 clearly identify the reallocated areas and credit obligations against the revised offset stages. The acquittal of 39 credits (for PCT 1093) against disturbance completed within the PADA (and for which the NSW BOS does

Recommendation		Response
	development. The table should include details on whether the credits have been partially or completely retired, and whether any credits are still outstanding	not apply) has been identified. Based on reallocated staging and credit obligations, application to acquit the credits accounted for by S6.30 Certificate BCF109 against Stages A1 and A2 will be made following determination of MOD 4.
1.3	Provide spatial data and any other supporting information, including BAM-C cases and BCT receipts, for each stage of the original approval and subsequent modifications to assist CPHR in verifying the credit obligation.	Spatial data as defined by the component areas of Figure 2-1 Figure 2-5 is supplied with this letter. BCT receipt for S6.30 certificate 109 is provided. The BAM case was not accessible at the time of preparing this letter. Data which would be provided by the BAM-C has been presented in the 2019 BDAR. The 2019 BDAR was referenced in the preparation of this letter. The BAM-C case used for the 2019 BDAR is 00011653/BAAS17057/19/00011654
2.1	Provide a BAM-C case and supporting spatial data for each of the proposed stages	Further analysis within the BAM-C is unlikely to provide useful information in this case based on the following considerations: • The proposal (MOD 3) has been determined. • The BAM-C has been updated several times following this analysis, and re-opening, or re-stating the BAM-C case is likely to provide a different credit yield. • Based on review of the 2019 BDAR, it is evident separate BAMC-C cases were not generated for each stage. Instead, the BDAR has determined the distribution of credits based on <i>the area of vegetation clearing for each stage</i> (EcoPlanning 2019). Hence, using the credits per hectare approach ensures a fair distribution of credits across the included and excluded components and the proposed stages. • Implementation of project stages on other project as shown that analysing stages in separate cases is likely to change the credit requirement. This letter seeks to respect the allocation of credits as determined in the 2019 BDAR. The BAM-C case used for the 2019 BDAR is 00011653/BAAS17057/19/00011654

If you have any questions about the content or calculations in this letter, please do not hesitate to contact me.

Regards,



Addy Watson | Manager | Senior Consultant

B Env Sc., NSW Biodiversity Assessment Method (BAAS19066)

Biodiversity | Heritage | Landscape Design | Compliance

a: "The Old Macquarie Brewery" c1876, 72 Brisbane Street, Dubbo NSW 2830

p: 0425 270 585



AREA Environmental & Heritage Consultants Pty Ltd

ABN: 29 616 529 867

We acknowledge Traditional Custodians and their ancestors.

7 REFERENCES

Ecoplanning (2019) *Biodiversity Development Assessment Report* – Wallerawang Quarry, Great Western Highway, Wallerawang, NSW. Version: Final 1.2

NSW Government- Department of Planning and Environment (2004 and as updated 2018 and 2020)
Development Consent DA No. 344-11-2021

ATTACHED

- Spatial Data (GIS layers supporting AREA Response Letter)
- Statement confirming payment into the Biodiversity Conservation Fund for an offset obligation (BCF109)



Statement confirming payment into the Biodiversity Conservation Fund for an offset obligation

Pursuant to section 6.33 of the *Biodiversity Conservation Act 2016*, the NSW Biodiversity Conservation Trust confirms that the following payments have been made into the Biodiversity Conservation Fund under section 6.30(1) of the Act to satisfy an obligation to retire biodiversity credits.

Payment made by:		Walker Quarries Pty Limited			
Date received:		20/5/2020			
NSW statutory obligation reference ¹		DA No. 344-11-2001			
Commonwealth EPBC Act controlled action reference (if applicable) ²					
BCT Reference		BCF109			
Biodiversity credit retirement obligations satisfied by payment to the Biodiversity Conservation Fund:					
Biodiversity credit type (Credit ID and name)	Offset trading group	EPBC Act Controlled Action offset obligation (Y / N)	Number of credits	Cost per credit (Exc. GST)	Total payment per credit type (Exc. GST)
1093 -Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion	Southern Tableland Dry Sclerophyll Forests greater than or equal to 50% and less than 70% cleared	no	39	\$4,634.13	\$180,731.21
Total (Exc. GST)					\$180,731.21
GST					\$18,073.12
Total (Inc. GST)					\$198,804.33

Paul Elton

Chief Executive Officer

Date: 26 May 2020

¹This refers to either; a development application number for a development consent under Part 4 of the *Environmental Planning and Assessment Act 1979 (EP&A Act)*, a State significant infrastructure approval under the previous Part 5.1 (now Part 5, Division 5.2) of the EP&A Act, a decision of a determining authority to carry out or approve the carrying out of an activity under Part 5 of the EP&A Act, or a biobank statement number or biodiversity certification number.

² This refers to a controlled action under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* for which a biodiversity offset obligation has been met through payment into the BCF.