

West Mount Cotton Quarry Expansion (EPBC 2018/8340)

To whom it may concern,

I refer to your EPBC referral 2018/8340 and the invitation for public comment. I have, as far as practically feasible in the limited timeframe provided, reviewed the Preliminary Documentation. Attached to this cover letter is a brief analysis of the material submitted highlighting what I believe are contentious or erroneous points. I summarise the main points below.

- The Offset Proposal does not comply with the Qld Environmental Policy v1.4 July 2017 or the Guide to determining terrestrial habitat quality v1.3 February 2020:
 - No conservation outcome is achieved through any of the offset sites.
 - The two offset sites located in the Koala Coast (Offset Site 1 and 2) do not have sufficient carrying capacity of non juvenile koala habitat trees to offset significant residual impacts on the Koala.
 - The third offset site at Tarome, is not located in the Koala Coast and is therefore inappropriate for offsetting the significant residual impact on the Koala.
- The Offset Proposal contains inconsistent analysis:
 - The impact area has received habitat quality ratings ranging between 6.95 and 9 points out of 10. This rating is vital to determining sufficiency of the proposal.
 - 13 ha of previously required offset at Offset Site 1 is being proposed again.
 - Significant offset areas of already environmentally protected habitat is being proposed.
 - Habitat improvement in these protected areas is marginal and serves only to 'plump up' the proposal with no effective conservation outcome.

Finally, the impact area contains unquantifiable attributes which cannot be offset with any other site due to its pre-existing habitat quality, location in a broad area of habitat and proximity to surrounding conservation areas.

Regards,

[Name and address of person making submission]

1. Summary

The Offset Package outlined in the Preliminary Documentation for EPBC Referral 2018-8340 is insufficient to mitigate the numerous significant residual impacts associated with the project, refer to Table 1 for a summary of the analysis performed.

Table 1: Summary of Offsets

	Proposed Area (ha)	Revised Area (ha)	Habitat Improvement +2 met	Habitat Quality +1 over Impact Area	Compliant Area (ha)	Non Juvenile Koala Habitat Trees
Impact Area	51.52	45.23				31,930
Offset Site 1	48.81	15.27	Yes	No	0	11,117
Offset Site 2	45.64	21.07	Yes	No	0	18,465
Total	94.45	36.34			0	29,582
Requirement					180.92	95,790
Deficit					180.92	66,208

Note: Offset Site 3 is not considered as it is not located in the Redland City Council LGA or the Koala Coast.

The report and information contains numerous errors and miscalculations as well as significant oversights in the land offered as offsets:

- 13ha of offset previously required is being offered again as part of this offset plan.
- The addition of already sufficiently protected areas of vegetation which serves only to improve the summary data without achieving any actual conservation outcome.
- No comparison of the proposed offset package with any type of sufficiency benchmarking.

Even disregarding the additional analysis provided, and the notable discrepancies of the habitat quality rating of the impact area, the habitat improvement and qualities of all offset sites are insufficient to achieve a conservation outcome.

Furthermore, the context of the impact site plays an important part in determining sufficiency of the proposal. None of the offset sites are equal to the habitat quality and location of the proposed quarry expansion. The habitat has been rated as high as 9/10 (Section 7.4.6 P116 of the PD) and described as habitat critical to the survival of the koala. This habitat quality in conjunction with direct connection of the impact zone to the surrounding conservation areas and national parks mean that it is unlikely that any amount of environmental offset could fully replace this habitat.

2. Sufficiency Criteria

The federal Department of Agriculture, Water and the Environment (DAWE) have specified that the published Preliminary Documentation “*should be prepared in a way that enables interested stakeholders and the Minister (or delegate) to understand the information sufficiently and ensure that any conclusions reached can be independently assessed*”.

The conclusion required is that the Environmental Offsets package is sufficient or insufficient, however there is no criteria mentioned to determine sufficiency of the package. The information provided in the Preliminary Documentation is suitability criteria, which demonstrates when the offset is suitable for consideration in the proposal. Examples of suitability criteria are:

- The offset site must be:
 - Of the same broad vegetation group as the impacted regional ecosystem.
 - Of the same regional ecosystem status
 - Within the same bioregion

The Queensland “Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy” has been referenced and used extensively in the Preliminary Documentation. Logically, then, sufficiency of the offset proposal can be determined using criteria published in the following documents:

- Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy v1.3 February 2020.
- Qld Environmental Offsets Policy v1.4 July 2017

Sufficiency criteria to be utilised in addition to the suitability criteria proposed in the Preliminary Documentation are referenced in these documents as:

- Qld Environmental Offsets Policy v1.4 July 2017
 - Section 1.3
 - Offsets must achieve a conservation outcome that achieves and equivalent environmental outcome.
 - Section 2.2.1
 - Environmental offsets delivered under this framework are to achieve a conservation outcome
 - Section 2.3.1.6 – Specific requirements for koala related offsets in South East Queensland
 - For proponent-driven offsets, this policy requires that the rehabilitation, establishment and protection of koala habitat is the only appropriate action for offset koala habitat within South East Queensland region.

- new koala habitat trees for every one non-juvenile koala habitat tree impacted; and
 - 3. The area required to establish the number of koala habitat trees that must be established as the offset.
 - Multiply the number of non-juvenile koala habitat trees to be impacted by three to determine the offset requirement. A conservation outcome can be achieved by planting new trees (e.g. tube stock) and managing these trees until they are established (i.e. become non-juvenile koala habitat trees), or by managing juvenile koala habitat trees that already exist on the offset site until they are established (i.e. become non-juvenile koala habitat trees).
 - The Queensland Environmental Offsets Policy requires that koala habitat trees must be established at densities that will produce a mature density reflective of the existing or pre-clearing regional ecosystem(s) at the offset site. You must therefore determine whether the proposed offset site is large enough to meet this requirement using the average stem density approach detailed in section 3.4.2.1 – 3.4.2.4 and 3.4.2.6 of this chapter.
- Section 3.2
 - To demonstrate that an offset has achieved a conservation outcome for koala habitat in SEQ, the offset must:
 - 1. establish the required number of non-juvenile koala habitat trees;
 - 2. establish trees that are native to the regional ecosystem at the offset site;
 - 3. establish trees at a mature density reflective of the regional ecosystem at the offset site; and
 - 4. contain or be capable of containing a self-sustaining population of koalas.

It is unclear from the Preliminary Documentation as to which sufficiency criteria is being utilized. In Section 4.8, page 36, the report references the recording of stem densities in the impact site and the theoretical carrying capacity of non juvenile koala habitat trees as part of the assessment method but no further reference is made in the main body of the report. All analysis undertaken below is solely for the significant residual impact on the Koala. There is not sufficient time provided to analyse the proposal for the impacts identified on the Greater Glider or the Grey Headed Flying Fox.

3. Simple Analysis of Provided Habitat Quality Assessments

A simple analysis of habitat quality assessments is summarized below:

Table 2: Conservation Outcome with Provided Habitat Ratings

Offset Site	Pre Offset Value (out of 10)	Post Offset Value (out of 10)	Improvement	Impact Area Benchmark (out of 10)
Offset Site 1	6.39	7.91	1.52	7.95
Offset Site 2	4.67	7.17	2.5	7.95
Offset Site 3	5.5	7.12	1.62	7.95

Applying the conservation outcome requirements, the improvement of the offset habitat must be greater than 2 points, and the final habitat rating must be 1 point higher than the impact area. Only Offset Site 2 meets the Habitat Improvement requirement and none of the sites exceed the impact quality rating by more than 1 point. Regardless of the discrepancies which will be highlighted below, the offset proposal is already insufficient.

4. Inconsistencies of Habitat Assessment Results and Offset Requirements at the Impact Site

Numerous instances of inconsistent calculation of habitat quality occur in the Preliminary Documentation making it difficult to reconcile values. For example, section 7.4.6 Page 116 references a previous habitat assessment score of 9, and then quotes an official assessment score of 7.3 for the impact site. Whilst Appendix C, which contains the calculations used, indicates a habitat score of 6.95. Other assessments undertaken and submitted in reports by the proponent have indicated a habitat quality range of 7-8 (EMM Report: West Mount Cotton Road Quarry Extension - Significant Impact Assessments & Environmental Offset Strategy Version 2).

Further, some of the Assessment Units used to calculate the total impact area and habitat quality score are not Essential Habitat and do not contain Matters of Environmental Significance, these include AU5, AU6, AU7 and AU8. Given this, they should be disregarded from offset requirements and habitat quality assessment.

Recalculating the habitat assessment score results in a total impact area requiring offset, shown in Table 3.

Table 3: Impact Area – Revised Habitat Ratings

Assessment Unit	Habitat Score (out of 10)	Area (ha)
AU1	7.14	31.09
AU2	6.95	7.08
AU3	7.38	6.74
AU4	7.76	0.32
Weighted Average Habitat Score	7.15	45.23

This value of 7.15 is still lower than the values quoted in Section 7.4.6 (scores of 7.3 and 9), but for the sake of transparency and consistency the score of 7.15 and the impact area of 45.23 will be utilised. To determine the stem density of these areas it is necessary to review Appendix B – Habitat Quality Assessment Field Data. However, the data reports for the 12 biocondition sites in the impact area cannot be differentiated due to incorrect labelling. It is assumed that they are in numerical order of biocondition site 1 through 12. Disregarding AU5, AU6, AU7 and AU8 leaves biocondition sites 1 to 7 to analyse for stem density.

Table 4: Impact Area - Revised Stem Density Analysis

Assessment Unit	Biocondition Site	Stem Density Non Juvenile per hectare
AU1	1	792
AU1	2	615
AU2	3	457
AU2	4	287
AU3	5	960
AU3	6	1185
AU4	7	610

The total number of impacted non juvenile habitat trees is shown in Table 5, below.

Table 5: Impact Area -Total Non Juvenile Koala Habitat Trees

Assessment Unit	Average Stem Density per hectare	Area (ha)	Number of Trees
AU1	703.5	31.09	21872
AU2	372	7.08	2634
AU3	1072.5	6.74	7229
AU4	610	0.32	195

Total number of non juvenile trees in the impact area is therefore 31,930. At an offset cost of 3 trees to 1, the offset requirement is for 95,790 koala habitat trees. This entire offset delivery must be located in the Redlands LGA as per the Qld Environmental Offsets Policy v1.4 July 2017.

Summarising the sufficiency criteria:

Under Section 2 of the Guide to determining terrestrial habitat quality v1.3 February 2020:

*Total Offset Required: 45.23 ha * multiplier (4) = 180.92 ha*

Location: Redlands LGA

Habitat Quality after 20 years: 7.15 + 1 = 8.15

Habitat Improvement of offset sites: +2 over non offset condition

Under Section 3 of the Guide to determining terrestrial habitat quality v1.3 February 2020:

Total Offset Required: Establish 95,790 Non Juvenile Koala Habitat Trees
Location: Redlands LGA

5. **Reassessment of Offset Site 1 – Pineapple Farm**

Offset Site 1 is described as a 54.2 ha site containing 48.81 ha of proposed offset. The site is broken into 3 Assessment Units and a 5.18 ha reserved living area. In the Qld Planning and Environment case 3788/11, the development application MC010623 (submitted to Redland City Council) was approved with stipulations on Environmental Rehabilitation at the Pineapple Farm, described in the Final Order, attachment 'A' page 4:

- Establish Koala habitat (as defined in the Karreman Quarries' Infrastructure Agreement) on the Pineapple Farm land described as Lot 1 on RP884860, being an area of 13 hectares, by 2014 or prior to the commencement of Stage C, whichever is the sooner.

Excluding this existing offset, and the reserved living area, leaves a possible offset of 36.02 ha – not 48.81 ha as proposed.

The existing 13 ha offset is included in the Assessment Unit 1. Subtracting the 13 ha that has already supposed to be delivered, the revised areas are shown in Table 6.

Table 6: Offset Site 1 - Revised Habitat Ratings

Assessment Unit	Area (ha)	Habitat Score (out of 10)
AU1	15.27	5.78
AU2	16.26	7.26
AU3	4.28	7.09

The revised overall site details are shown below (Table 7).

Table 7: Offset Site 1 - Original vs Revised Habitat Ratings

	Original Pre Offset	Revised Pre Offset	Revised Post Offset
Condition (out of 10)	6.39	6.6	7.92
Size (ha)	48.81	36.02	36.02

Under the sufficiency criteria outlined above, this offset site does not improve by +2 points and is therefore insufficient as it stands. However, analysing the details of the Assessment Units yields a further reduction in offset value, shown in Table 8.

Table 8: Offset Site 1 - Assessment Unit Habitat Ratings

Assessment Unit	Area (ha)	Pre Offset Habitat Score (out of 10)	Post Offset Habitat Score (out of 10)	Improvement
AU1	15.27	5.78	7.89	2.11
AU2	16.26	7.26	7.94	0.68
AU3	4.28	7.09	7.94	0.85

The bulk of the habitat improvement is being seen in AU1, whilst AU2 and AU3 see only marginal improvements. Considering each Assessment unit individually, AU2 and AU3 do not deliver a conservation outcome. Without reproducing the habitat condition ratings here, it is evident from the ratings provided in Appendix B of the PD for pre and post offset site conditions for AU2 and AU3, that the improvement is marginal. Some of the improvement – specifically the coarse woody debris, is likely to occur organically without any further environmental management.

In addition, AU2 and AU3 are already sufficiently protected by both Local and State instruments. On this basis they should be disregarded, leaving the value of the offset area and habitat improvement at Offset Site 1 as:

Total Offset Delivered: 15.27 ha
Location: Redlands LGA
Habitat Quality after 20 years: 7.89
Habitat Quality required after 20 years: 8.15
Habitat Improvement after 20 years: 2.11
Habitat Improvement required after 20 years: 2

Now, the habitat improvement of the offset site has increased to satisfy the requirement of +2 gain. However, the habitat quality after 20 years does not exceed the impact site by +1. This offset site is therefore insufficient.

Undertaking stem density analysis for Offset Site 1, supports the logical exclusion of AU2 and AU3 from the assessment. Average non juvenile koala habitat trees, taken from Appendix B of the Preliminary Documentation, in each of the AUs are (Table 9):

Table 9: Offset Site 1 - Stem Density Analysis

Assessment Unit	Non Juvenile Koala Habitat Trees per ha
AU1	129
AU2	898
AU3	622

AU2 and AU3 are comparable to the stem densities found on the impact site. Furthermore, section 2.3.1.6 of the Qld Environmental Offsets Policy states:

- Koala habitat trees to be established as an offset must be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems present on the site.

AU2 stem density already exceeds the average stem density of RE12.11.24, and the Preliminary Documentation does not contain average stem density for AU3 RE12.3.11a. However, the occurrence of large trees, both eucalypt and non-eucalypt, exceed benchmark values in biocondition sites 1 and 5 by factors of 300% and 207% respectively. It is likely then, that the possible new koala habitat trees is minimal over the existing stock. It is therefore assumed that there will be no additional trees in AU3. AU1 (RE12.11.24) can be dramatically improved to the average resulting in the following additional trees as offset (Table 10):

Table 10: Offset Site 1 - Non Juvenile Koala Habitat Tree Carrying Capacity

Assessment Unit	Additional Trees per ha	Area (ha)	Resultant Trees
AU1	728	15.27	11,117
AU2	-	16.26	-
AU3	-	4.28	-

Total additional trees likely to be planted, or existing juvenile trees to be nurtured, on offset site 1 is therefore 11,117 trees. This is against a requirement of 95,790. The deficit after Offset Site 1 is 84,673 under this sufficiency criteria.

6. Reassessment of Offset Site 2 – University Farm

The University Farm site consists of 4 lots totalling 100.65 ha. The offset proposal is only 45.64 ha of this total area. It is broken into 5 assessment units, shown in Table 11.

Table 11: Offset Site 2 - Assessment Unit Habitat Ratings

Assessment Unit	Area (ha)	Habitat Score Pre Offset (out of 10)	Habitat Score Post Offset (out of 10)
AU1	13.31	3.02	6.8
AU2	7.76	3.08	6.8
AU3	4.23	5.76	7.37
AU4	11.04	5.85	7.52
AU5	9.3	6.47	7.52

Note: AU4 area total in table 11.27 of the Preliminary Documentation says 7.6 ha, but the calculations in Appendix B of the PD use 11.04 ha. Using 11.04 ha reconciles the sum of individual areas with the total claimed area of 45.54 ha.

AU3, AU4 and AU5 are already protected under both state and local instruments and contain high numbers of Koala Habitat Trees. Habitat improvement in these AUs, appears to be primarily from the reduction in coarse woody debris and the introduction of diversity in undercanopy species. Each of these AUs exhibits a habitat quality gain individually of less than 2, equating to an insufficient conservation outcome. It appears that the primary outcome of including the zones such as AU3, AU4 and AU5 of offset site 2, and AU2 and AU3 of offset site 1 is to provide additional environmental protections to these areas. In these cases, however, the protection offered by the local and state instruments is sufficient to prevent any loss of habitat in these areas. Further, the offset management plan to improve habitat quality of these areas are insufficient to realise a conservation outcome. On this basis they should be disregarded, leaving the value of the offset area and habitat improvement at Offset Site 2 as:

Total Offset Delivered: 21.07 ha
Location: Redlands LGA
Habitat Quality after 20 years: 6.8
Habitat Quality required after 20 years: 8.15
Habitat Improvement after 20 years: 3.76
Habitat Improvement required after 20 years: 2

Habitat improvement on Offset site 2 is dramatic with an increase of 3.76, however the habitat quality after 20 years does not exceed the impact site by +1. This offset site is therefore insufficient.

Analysing Stem Density for Offset site 2 yields the pre offset values shown in Table 12.

Table 12: Offset Site 2 - Stem Density Analysis

Assessment Unit	Non Juvenile Koala Habitat Trees per ha	Benchmark
AU1	3	857
AU2	0	857
AU3	751	857
AU4	387	
AU5	922	728

In this case, AU4 does not have benchmark data for Koala Habitat Trees. However, the occurrence of large trees, both eucalypt and non-eucalypt, compare favourably to the benchmark values in AU4 by a factor of 107%. It is likely then, that the possible new koala habitat trees is minimal over the existing stock. It is therefore assumed that there will be no additional trees in AU4. AU5 provides no room for additional non juvenile koala habitat trees and AU3 provides marginal scope for improvement.

The likely additional non juvenile koala habitat trees are therefore (Table 13):

Table 13: Offset Site 2 - Non Juvenile Koala Habitat Tree Carrying Capacity

Assessment Unit	Additional Trees per ha	Area (ha)	Resultant Trees
AU1	854	13.31	11,367
AU2	857	7.76	6,650
AU3	106	4.23	448
AU4	-	11.04	-
AU5	-	9.3	-

The total number of additional trees that can be supported at Offset Site 2 is 18,465. The combination of supportable non juvenile koala habitat trees at offset site 1 and offset site 2 is 29,582. The deficit after Offset Site 1 and Offset Site 2 is 66,208 under this sufficiency criteria.

7. Offset Site 3 - Audale

Offset site 3 is located outside of the Redlands LGA, and outside of the Koala Coast. Based on this it is not compliant for Koala related offsets as per Section 2.3.1.6 – Specific requirements for koala related offsets in South East Queensland of the Qld Environmental Offsets Policy v1.4 July 2017. It may or may not be compliant for the other significant residual impacts to be offset in this package.

8. Interested Stakeholders

The EPBC Help on assessment and approval notifications website states the following for effective public comments:

- State clearly whether, and how, you believe the proposal would have a significant impact on matters protected by the EPBC Act. The Minister, or their delegate, can only take into account comments, concerns or issues relating to the specific matters of national environmental significance or matters protected under the EPBC Act. Be specific and state which aspects of the proposal would impact on matters. For example, a particular listed species or heritage value.
- If you believe the information in the referral is misleading or incorrect, you should state the reasons why and provide correct information, if available.
- Give the source of any key information used in reaching your conclusion.
- Provide clear contact details if the Department needs to get in touch with you to seek clarification.
- Provide comments by the due date. If your comments are going to be late, please contact us before the due date. Let us know of your intention to provide comment, and the date you will provide the comment. We will advise you if the comments can be accepted.

With only 10 business days and a report exceeding 1300 pages, it is not practically feasible to receive multiple submissions that meet this commentary recommendation. To recognise public support for this submission and to ensure appropriate environmental outcomes are achieved, an online petition has been created at <https://chnq.it/WtmqMdSW>