



Your ref: SSD-65146459
Our ref: DOC24/971300-18

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By email: ben.harrington@ghd.com

Dear Mr Harrington

Thank you for your email regarding the updated survey methods for the Marulan Quarry Biodiversity Development Assessment Report (BDAR). Conservation Programs, Heritage and Regulation (CPHR) have reviewed the supplied report detailing the updated survey methods. We note that the following issues have been adequately addressed:

- the use of data older than 5 years and within a severe drought period for Biodiversity Assessment Method (BAM) plots
- the use of data older than five years for flora and fauna surveys
- incorrect BAM plot locations within ecotones.

However, the koala surveys do not meet the minimum survey effort outlined in the [Koala \(Phascolarctos cinereus\): Biodiversity Assessment Method Survey Guide](#) which states that two standard survey methods are to be used. While the spotlighting surveys were adequate, the Spot Assessment Technique (SAT) surveys do not meet the guidelines which state that SAT surveys are not to be undertaken within three days of rain. However Table 3.5 *Daily weather observations during the survey period (BOM 2025)* in the draft report, shows that rain occurred within three days of the surveys and light rain occurred at the time of survey (15 and 16 August 2024). The use of SAT surveys over other survey methods listed in the guidelines has also not been justified in the BDAR. The need for justification on the use of SAT surveys is listed in the guidelines. Further details on this matter are provided in Attachment A.

Koalas have been recorded within the subject land of the proposed development. Koala records are also known from the projects general location including a BioNet record under 3 km from the subject land as recent as December 2024, which shows koalas are still present in the area. Adequate surveys need to be conducted, or the species assumed present in the associated vegetation zones within the development footprint (called 'proposal site' in the BDAR). If Koalas are to be excluded, strong justification of why they are believed to no longer inhabit the subject land, with evidence provided, would be needed to support this claim.

If you have any further questions about this issue, please contact Ms Allison Treweek, Senior Team Leader Planning, South East, at rog.southeast@environment.nsw.gov.au.

Yours sincerely

26/05/2025

Michael Saxon
Director South East
Regional Delivery

Conservation Programs, Heritage and Regulation Group

Attachment A

Koala survey information and known records within the subject land

CPHR provides the following advice in regards to recommended survey effort following the methods set out in the [Koala \(*Phascolarctos cinereus*\): Biodiversity Assessment Method Survey Guide](#).

A	The use of two standard survey methods. Section 3.5 Survey Effort <i>The minimum survey effort to detect koala presence on the subject land requires the total effort for two standard survey methods to be met. A scat detection method, which may indicate past occupancy, must be paired with a non-scat detection method as follows:</i> 1. <i>Spot Assessment Technique (SAT) (Section 4.1) or detection dogs (Section 4.2), and</i> 2. <i>spotlighting (Section 4.3) or passive acoustic (Section 4.4) or drones (Section 4.5).</i> <i>Survey effort is detailed for each method in Chapter 4. Where areas of suitable habitat are discontinuous, survey effort must be applied to each, independently. The two survey methods may be undertaken in any order, or concurrently where the timing requirements of each method can be met.</i> The survey effort for Marulan Quarry koala surveys does not meet the minimum survey effort listed in the section above. While the spotlighting effort is adequate, the SAT surveys were not conducted in line with the guidelines. The use of SAT surveys for this project was not justified in the BDAR as required. This is discussed in section B. Further surveys will be required to meet the minimum survey requirements.
B	SAT surveys 4.1.1 Limitations <i>Given scat deposition varies spatially and temporally (Ellis et al. 1998; Phillips & Callaghan 2011) the use of conservation detection dogs is preferred in low quality koala habitat. The use of SAT must be justified in the BAR with reference to the vegetation condition and quality of habitat for koalas.</i> <i>This method is less effective for sites with dense ground cover, as this will strongly influence the probability of scat detection (Cristescu et al. 2012; Jiang et al. 2020).</i> <i>As heightened insect activity during wet conditions increases scat decomposition rates, SAT surveys should not be undertaken within three days of rainfall (Cristescu et al. 2012; Melzer et al. 1994; Rhodes et al. 2011).</i> The SAT surveys were conducted under unsuitable conditions. As stated in section 4.1.1 of the guidelines, SAT surveys should not be undertaken within three days of rain. As shown in table 3.5 of the draft report supplied to CPHR the surveys took place when there had been over 24mm of rain in the preceding two days with a further 0.4 and 0.2mm recorded on the days the surveys took place. Section 5.8 of the Marulan Quarry BDAR, states regarding koala presence in the project's location '<i>The habitat containing these previous records of the Koala is associated with Yellow Box - Blakely's Red Gum grassy woodland (PCT 1330) which is likely to comprise higher quality habitat for the species than the vegetation in the proposal site. The habitat</i>

	<i>associated with the wildlife community survey recordings is more fertile, well-watered and productive landscape positions with taller, more productive open forest and woodland containing higher cover of primary Koala food trees such as Blakely's Red Gum (Eucalyptus blakelyi), Yellow Box (E. melliodora) and Ribbon gum (E. viminalis).'</i> indicating that the vegetation within the proposal site is of lower quality. The guidelines recommend the use of conservation detection dog surveys in the place of SAT surveys in lower quality habitat. When SAT surveys are used, justification is to be provided in the BDAR with reference to the vegetation condition and its quality being of a level high enough to justify the use of SAT surveys. No such justification has been provided in the BDAR suggesting that it is not quality koala habitat, therefore SAT surveys are unlikely to be appropriate for this project. If SAT surveys are used to fulfill the required survey requirements justification of their use over conservation detection dog surveys will need to be provided in the revised BDAR.
C	Known koala records within the subject land and surrounding areas From Marulan Quarry BDAR section 5.8 <i>'The closest record occurs adjacent to the proposal site in woodland next to Narambulla Creek recorded as part of a wildlife community survey'</i> <i>'The habitat associated with the wildlife community survey recordings is more fertile, well-watered and productive landscape positions with taller, more productive open forest and woodland containing higher cover of primary Koala food trees such as Blakely's Red Gum (Eucalyptus blakelyi), Yellow Box (E. melliodora) and Ribbon gum (E. viminalis).'</i> The koala record referenced in the report and shown in figure 1 is said to be in higher quality koala habitat however, the koala record is in a patch of vegetation that has the majority of its area within the proposal site. This patch is also listed as being the same vegetation zone and condition as sections of PCT 731 that will be impacted by the development as shown in figure 2. With approximately 20 meters of poor quality PCT 731 (as mapped by GHD) separating the vegetation patches there are no barriers stopping koala movement between these areas. It is unclear why the justification of it being higher quality koala habitat is used. BAM operational manual stage 1, section 4.4.4 states <i>'If there are existing records of a species on the subject land, and the current survey does not detect the species (or the population has changed), then evidence to justify the change should be provided in the BAR.'</i> The justification provided in the BDAR does not adequately address this and does not provide sufficient evidence. The justification in the BDAR to say koalas have a moderate likelihood of occurrence is not adequate considering the known record in the subject land and the surrounding areas that have high connectivity.

Figure
1

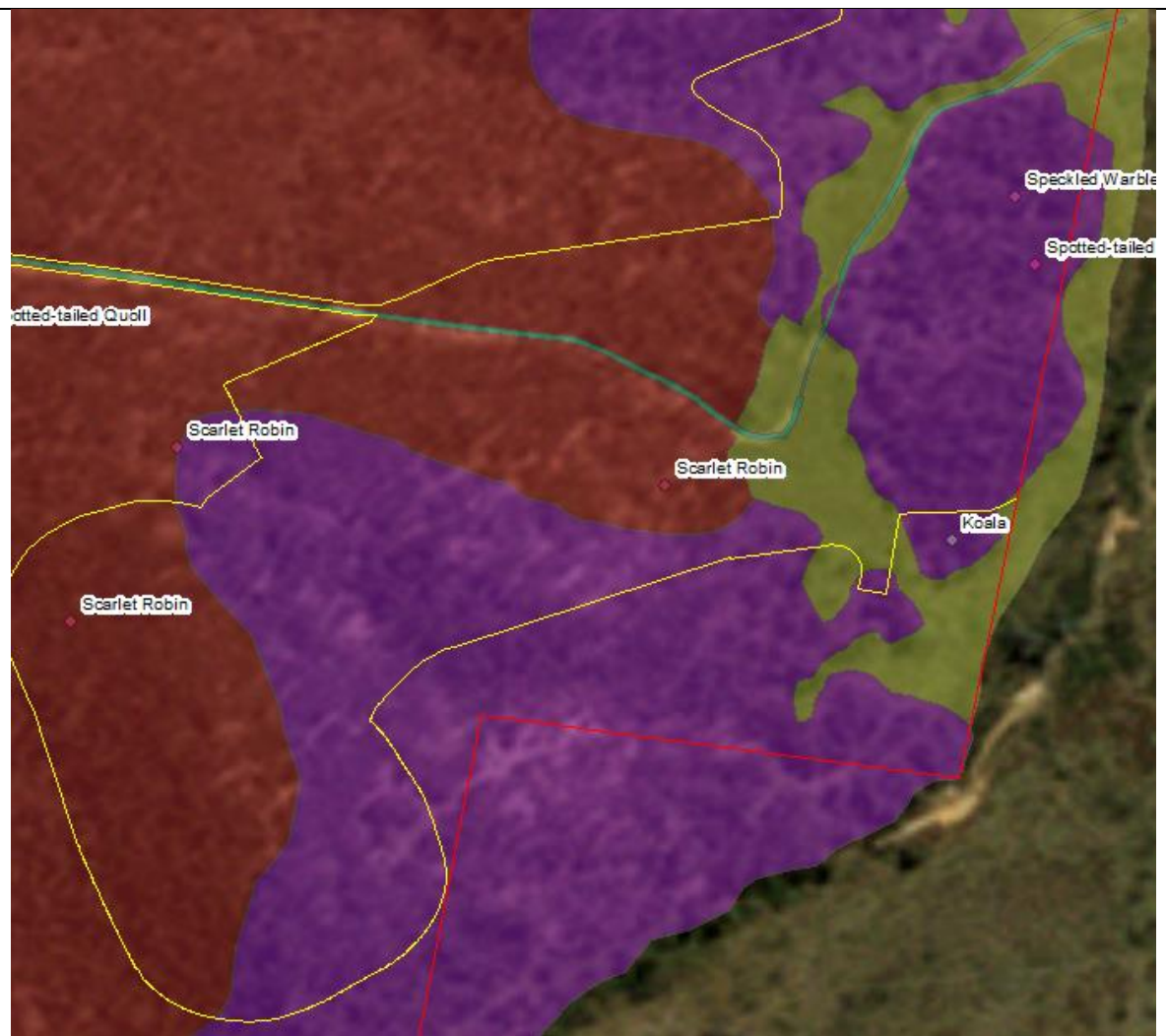


Figure
2

