Your ref: Insert SSD 8911
Our ref: DOC23/688907-12

Energy Assessments
Department of Planning and Environment
Locked Bag 5022
Parramatta NSW 2124

Attention: Mr Andy Nixey

Dear Mr Nixey

RE: Sundown Solar Farm, Inverell Shire (SSD 8911)

Thank you for your e-mail dated 3 August 2023, about the proposed Sundown Solar Farm at Spring Mountain, seeking our comments. I appreciate the opportunity to provide input.

We have reviewed the documents supplied, with a focus on the Biodiversity Development Assessment Report (BDAR) prepared by EMM, dated June 2023 and completed a site inspection on 5 and 6 September 2023.

Several issues are apparent including a development footprint containing 'islands' not connected to other parts of the site, vegetation mapping issues including small patches of woodland and isolated trees within grassland vegetation zones, absence of targeted flora survey for a portion of the site, lack of detail regarding proposed mitigation measures, minor data inconsistencies, errors in the operation of the BAM-Calculator, and insufficient information to enable completion of the bilateral assessment.

It is noted that the project includes clearing of 2.48 ha of box gum woodland and 216.49 ha of box gum derived native grass land. This would impact the Critically Endangered Ecological Community (CEEC) Box Gum Woodland, which is a candidate Serious and Irreversible Impact (SAII) entity. We recommend the proposal be amended to reduce these impacts and to provide additional and appropriate measures to further compensate for any remaining impacts if consent is to be granted. There are opportunities to further avoid and minimise impacts to the CEEC in the project design.

We recommend the Department request a revised BDAR that addresses these issues and incorporates all the recommendations listed in Attachment 1. The updated BDAR should be provided with the Response to Submissions. BCD's recommendations are provided in **Attachment 1** and detailed comments are provided in **Attachment 2**.

If you have any questions about this advice, please do not hesitate to contact Mr Tom Schmidt, Senior Conservation Planning Officer, at tom.schmidt@environment.nsw.gov.au or 6659 8227.

Yours sincerely

MELISSA GIESE
A/Director, North East Branch
Biodiversity and Conservation

26/09/2023

Attachment 1 – BCD Recommendations - Sundown Solar Farm – Biodiversity Development Assessment Report

Attachment 2 – Detailed BCD comments - Sundown Solar Farm – Biodiversity Development Assessment Report

Attachment 1

BCD recommendations

Sundown Solar Farm – Biodiversity Development Assessment Report

BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method Calculator
BC Act	*Biodiversity Conservation Act 2016*
BCD	Biodiversity and Conservation Division
BDAR	Biodiversity Development Assessment Report
CEEC	Critically Endangered Ecological Community
DNG	Derived Native Grassland
EIS	Environmental Impact Statement
MNES	Matters of National Environmental Significance
PCT	Plant Community Type
SAII	Serious and Irreversible Impact
TBDC	Threatened Biodiversity Data Collection
TEC	Threatened Ecological Community

BCD recommendations

1.1 The proposed development footprint be revised to ensure all project areas and components are connected and include all connections in the assessment.

1.2 The proposed development footprint be revised to limit the creation of small, unviable 'islands' of retained habitat.

2.1 The consent authority note the proposal is likely to have a Serious and Irreversible Impact on the Box Gum Woodland CEEC.

2.2 The proposed development footprint be revised to further avoid and minimise impacts to woodland areas of the Box Gum Woodland CEEC.

2.3 The BDAR be revised to include additional and appropriate measures to minimise impacts on the Box Gum Woodland CEEC such as revegetation to improve connectivity between avoided areas and within riparian corridors.

3.1 The assessor revises the vegetation mapping to address scattered trees within DNG areas, and ensure all woodland areas are included in the appropriate vegetation zone.

3.2 Update Table 4.2 of the BDAR to include a new condition class for scattered trees in DNG areas that are not otherwise mapped as woodland, and a description of the DNG "very low" class.

4.1 Revise the BDAR to determine presence of candidate threatened flora species in all areas of suitable habitat either by undertaking targeted survey, assuming presence or by obtaining an expert report.

4.2 Review the species polygons for Bluegrass and Austral Toadflax after addressing recommendation 4.1.

5.1 Clarify the likely biodiversity impacts of the proposed access road upgrades and confirm whether any tree removal is required for the proposed road widening.

8.1 Revise the BDAR to include additional details on the proposed mitigation measures to accord with the BAM.

9.1 Review the data inconsistencies referenced in this response.

10.1 The proponent should provide additional information in relation to the assessment of impacts to Matters of National Environmental Significance as outlined in this letter to enable the Bilateral Assessment to be completed for this project.

11.1 The assessor revises the BAM-C for the assessment to account for EPBC Act threatened ecological communities.

12.1 The consent authority notes the above will result in duplication of credits for zones input into the BAM-C. Should development consent be granted, the conditions should only list the offset obligation for the EPBC Act TEC.

Detailed BCD comments

Sundown Solar Farm – Biodiversity Development Assessment Report

1. The development footprint requires revision to connect isolated project areas and avoid creating small, unviable retained areas

Several parts of the development footprint presented in the Biodiversity Development Assessment Report (BDAR) and Environmental Impact Statement (EIS) and identified as potential solar array areas are not connected to any other part of the footprint (**Figure 1**). To construct solar panels in these areas would require road and cable connections to other parts of the footprint. All development components that would result in loss of biodiversity values are to be included in the development footprint and calculated in the total direct impact of the project.

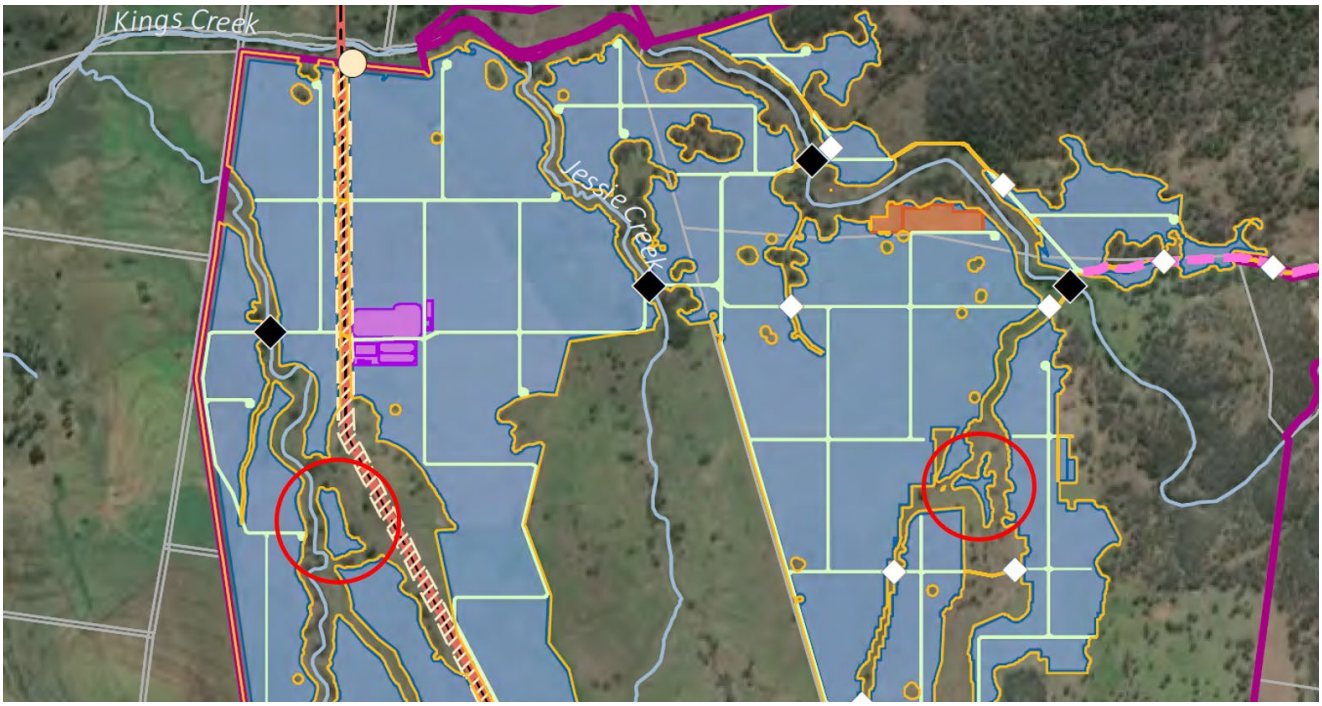

Figure 1: Screenshot of project components map from BDAR with selected examples (circled red) of proposed solar array areas with no connection.

The development footprint includes numerous small 'cut-outs' where isolated records of threatened flora species were identified and are proposed to be avoided (**Figure 2**). The BCD acknowledges this represents an effort to avoid and minimise impacts on threatened flora species. However, given their small area and proposed isolated locations surrounded by solar arrays and other infrastructure, we consider these retained areas are unlikely to provide viable habitat in the long-term. Therefore, unless the protection, management and long-term viability of these areas can be demonstrated, they should be included within the development footprint. We understand some other small areas proposed to be avoided have been excluded from the footprint to protect heritage values, however if biodiversity values are likely to be impacted these areas should be assessed as a loss in the BDAR.

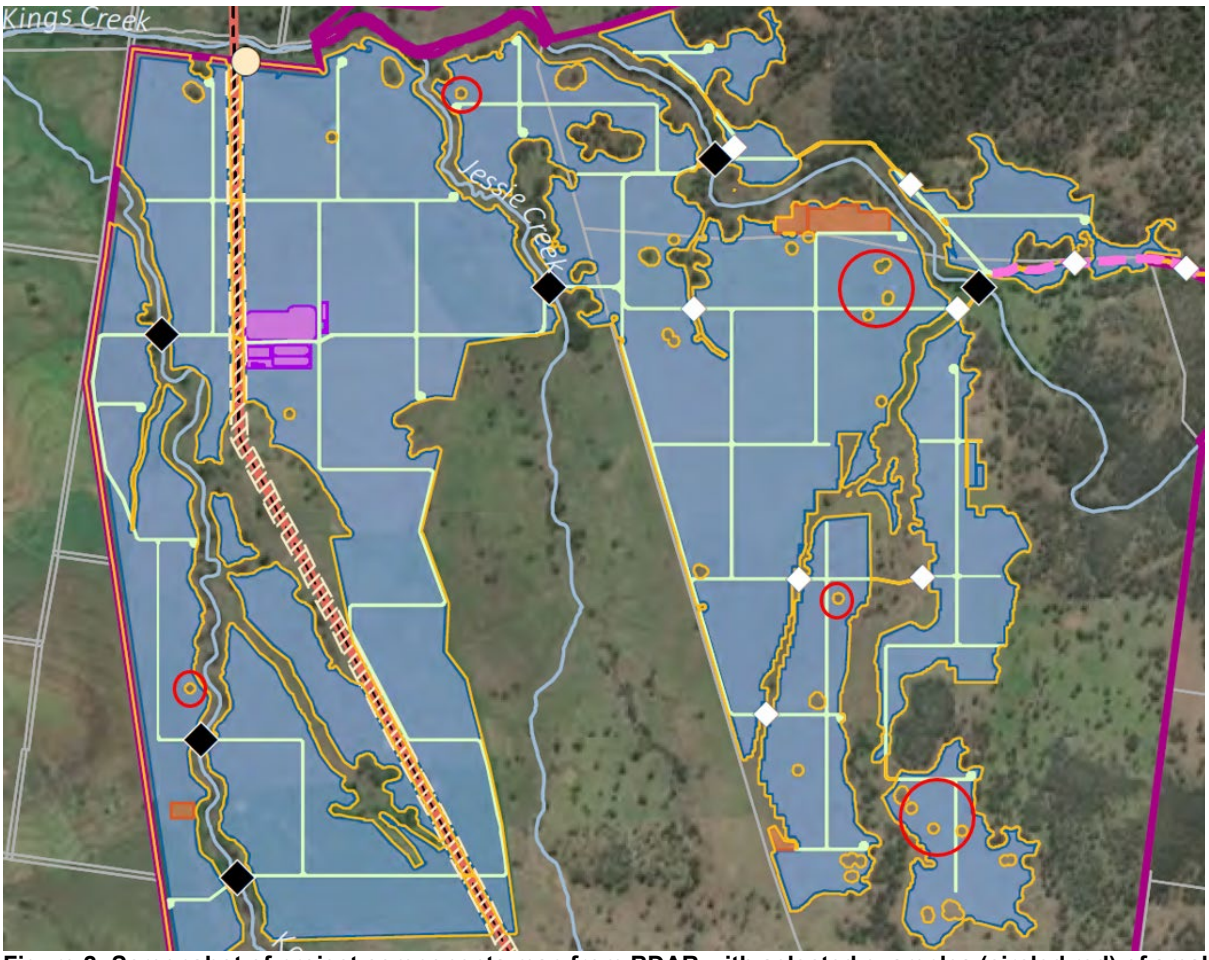

Figure 2: Screenshot of project components map from BDAR with selected examples (circled red) of small, isolated avoided areas unlikely to provide viable habitat in the long term.

Recommendations

1.1 The proposed development footprint be revised to ensure all project areas and components are connected and include all connections in the assessment.

1.2 The proposed development footprint be revised to limit the creation of small, unviable 'islands' of retained habitat.

2. The proposal requires revision to further avoid and minimise impacts to SAII Box Gum Woodland and to include additional and appropriate measures to minimise impacts on the SAII entity

The BDAR states the project would result in impacts to the Critically Endangered Ecological Community (CEEC) Box Gum Woodland, which is a candidate Serious and Irreversible Impact (SAII) entity, including the clearing of:

- 2.48 ha of Box Gum Woodland
- 216.49 ha of Box Gum Derived Native Grassland.

The Box Gum Woodland CEEC is listed as a candidate SAII entity under Principle 1 and Principle 2 in accordance with Section 6.7 of the *Biodiversity Conservation Regulation 2017*. These Principles state:

> *An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct because:*

- *Principle 1: it will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or*

- *Principle 2: it will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size.*

The Final Determination for this community lists the clearing of native vegetation as a key threating process for the CEEC. Given there is no minimum clearing threshold provided in the Final Determination or relevant databases to measure the significance of decline in this community, any incremental loss in extent could be seen as contributing to the principles above.

We consider these impacts are likely to be Serious and Irreversible. The proposal should be amended to reduce these impacts, noting there are opportunities to further avoid and minimise impacts to the CEEC in the project design, and to provide additional and appropriate measures to further compensate for any remaining impacts if consent is to be granted, in accordance with Section 7.16 of the *Biodiversity Conservation Act 2016.*

We acknowledge and commend the proponent's efforts to date on avoiding and minimising potential impacts to the SAII entity. We recognise some areas cannot be entirely avoided, such as derived native grasslands, scattered trees and small, isolated woodland patches, due to the nature of the development and functional layout requirements combined with the landscape position of the SAII entity.

However, based on our review of the BDAR and field observations, we have identified other potential opportunities to further avoid impacts on the SAII entity (**Figure 3**), which include:

- revising the development footprint to further avoid woodland areas and better connect avoided areas.

- regularising boundaries between avoided areas and the development footprint to reduce the perimeter, hence reducing edge effects and improving viability of avoided areas.

- modifying the location of a proposed internal access road to align with an existing track instead of traversing intact woodland.

These opportunities focus on woodland areas representing higher condition parts of the CEEC, and where ecological function can be maintained and improved in the long term.

The BCD considers additional and appropriate measures to compensate for remaining impacts to the CEEC could include land management activities such as revegetation to improve or create connectivity between avoided areas and along riparian corridors. This would increase the biodiversity values and protect the integrity of retained areas of the SAII entity at the site.

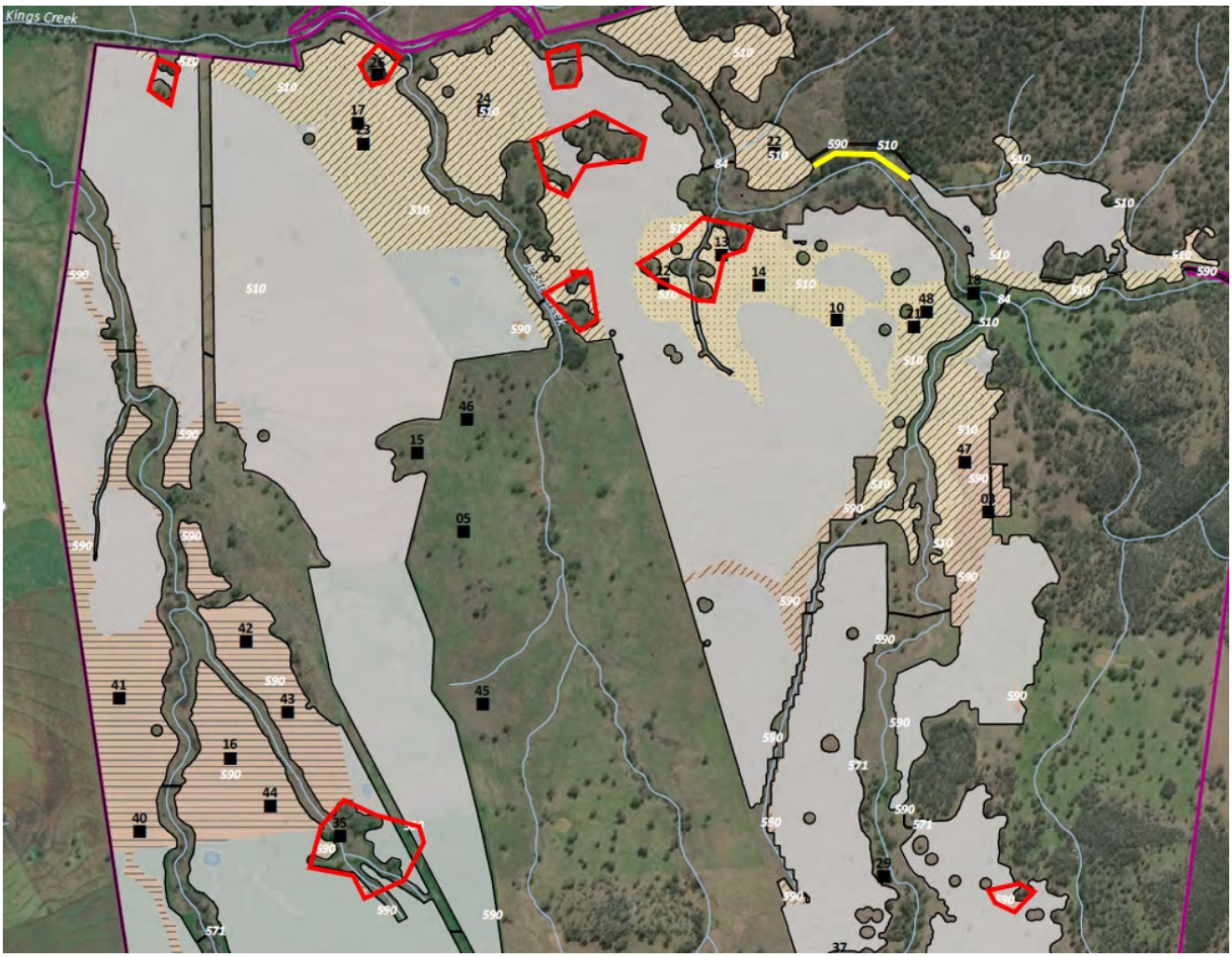

Figure 3: Some examples of indicative areas where opportunities exist to further avoid and minimise impacts to SAII Box Gum Woodland CEEC are shown in red. Yellow line indicates approximate location of an existing cleared track that should be used to minimise impacts to intact woodland.

Recommendations

2.1 The consent authority notes the proposal is likely to have a Serious and Irreversible Impact on the Box Gum Woodland CEEC.

2.2 The proposed development footprint be revised to further avoid and minimise impacts to woodland areas of the Box Gum Woodland CEEC.

2.3 The BDAR be revised to include additional and appropriate measures to minimise impacts on the Box Gum Woodland CEEC such as revegetation to improve connectivity between avoided areas and within riparian corridors.

3. The vegetation mapping in the BDAR requires revision to account for trees within mapped grassland areas and identify all woodland patches

The BAM requires the assessor to delineate areas of each PCT that are in the same broad condition state into separate vegetation zones. Disturbance to growth form groups for tree, shrub and ground cover or extent of exotic species (or combinations of these) can be used to identify areas of similar condition (BAM s4.3.1).

The assessor has delineated several derived native grassland (DNG) vegetation zones in the BDAR vegetation mapping with condition classes including “DNG_moderate” and “DNG_low”. Scattered trees and associated fallen logs and tree regeneration were observed within these zones during the site inspection. Section 4.2.6(v) of the BDAR describes that the assessor has edited the plot data in the BAM-C to add tree data for mapped grassland zones where no plots for the zone included trees.

The BCD does not support this approach, and we also note the added data does not include fallen logs or tree regeneration.

We consider the scattered trees and any surrounding regeneration occurring within DNG areas represent a different broad condition state and therefore a different vegetation zone. These areas also contain different biodiversity values to the grassland areas, commonly containing tree hollows and other habitat features not present in grassland areas. Revised mapping should include scattered trees and associated regeneration as a new zone for each PCT, and additional BAM plot sampling undertaken to assess the condition state. The assessor should ensure all functional attributes (such as fallen logs and tree regeneration) that occur within the zone are present within at least one plot.

During the site inspection, BCD officers also identified two small woodland patches occurring within mapped DNG zones, which had not been allocated to an appropriate woodland zone (**Figure 4**). Revision of the mapping is required to accurately map these areas, which should be avoided.

Table 4.2 of the BDAR presents descriptions of the broad condition states used for vegetation mapping. We note one zone mapped in the assessment (PCT590_DNG_very low) does not correspond with the condition states described in the table, i.e. “DNG_very low” was not listed in the table. The table should be updated to describe all mapped zones.

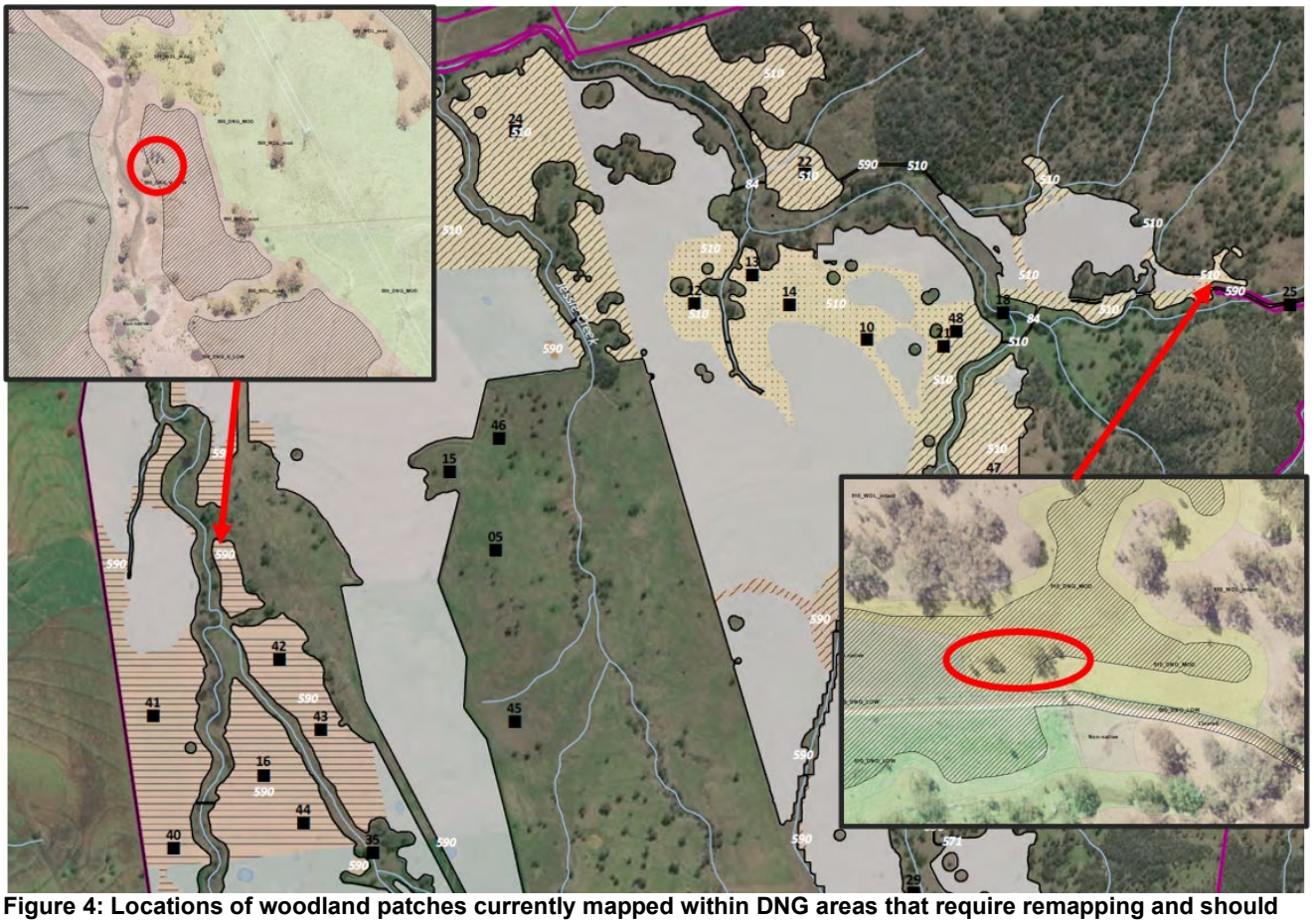

Figure 4: Locations of woodland patches currently mapped within DNG areas that require remapping and should be avoided.

Recommendations

3.1 The assessor revises the vegetation mapping to address scattered trees within DNG areas, and ensure all woodland areas are included in the appropriate vegetation zone.

3.2 Update Table 4.2 of the BDAR to include a new condition class for scattered trees in DNG areas that are not otherwise mapped as woodland, and a description of the DNG “very low” class.

4. Targeted flora survey effort has not covered all areas of suitable habitat for candidate species

Targeted threatened flora survey effort is presented in Figure 5.4 of the BDAR. Several areas of derived native grassland within the development footprint appear to have no survey. These areas represent suitable habitat for several candidate species, including Bluegrass and Austral Toadflax, which have been recorded in the same vegetation zones on the site. The assessor must determine whether each candidate species is present across all areas of suitable habitat in accordance with Section 5.2.4 of the BAM.

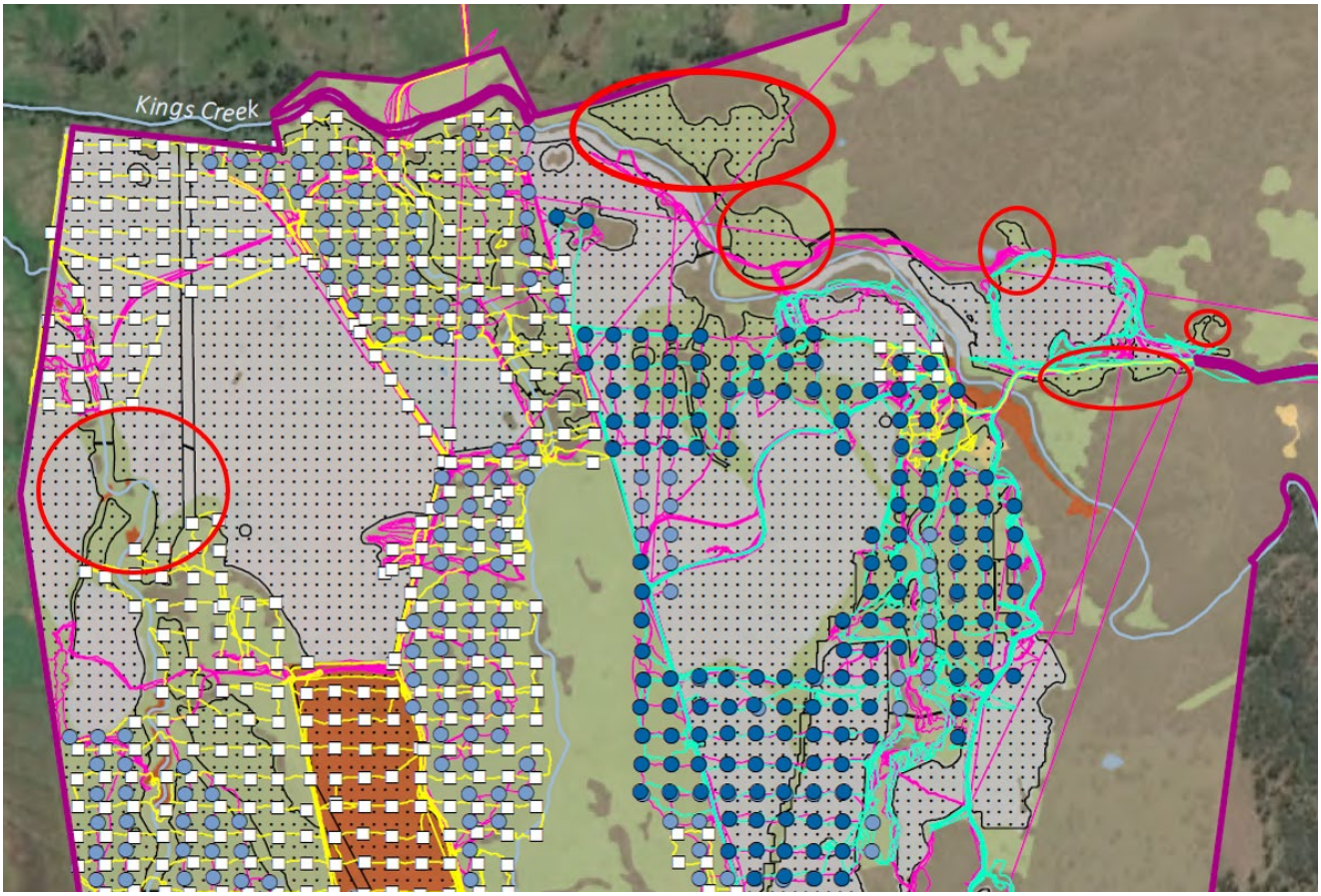

Figure 5: Extract from figure 5.4 of BDAR showing targeted flora survey effort with red circles added to indicate examples of unsurveyed suitable habitat for candidate threatened flora species.

Recommendations

4.1 Revise the BDAR to determine presence of candidate threatened flora species in all areas of suitable habitat either by undertaking targeted survey[1], assuming presence or by obtaining an expert report.

4.2 Review the species polygons for Bluegrass and Austral Toadflax after addressing recommendation 4.1.

5. The impacts of the proposed widening of Sturmans Road and Spring Mountain Road require clarification

The BDAR indicates the width of Sturmans Road and Spring Mountain Road would be upgraded from 4m to 8.7m to facilitate B-double truck access during construction. During our site inspection we noted the road appeared wider than 4m in some areas. The mapping shapefiles provided indicate the impact footprint for the road is 8.7m, hence no construction buffer has been applied.

[1] DPIE (2020). *Surveying threatened plants and their habitats NSW survey guide for the Biodiversity Assessment Method.* Department of Planning, Industry and Environment.

Some sections of road intersect areas of high-quality Box Gum Woodland CEEC and the locations of threatened flora species records. Avoidance and minimisation of impacts in these areas should be prioritised. It is also unclear from the BDAR how the likely impacts of the proposed road upgrade were determined and whether tree removal is required to facilitate the upgrade.

Recommendations

5.1 Clarify the likely biodiversity impacts of the proposed access road upgrades and confirm whether any tree removal is required for the proposed road widening.

6. The use of v1.1 vegetation integrity benchmarks has met the transitional arrangements

We note the assessor has used of v1.1 vegetation integrity benchmarks in the BAM-C. Version 1.2 benchmarks were released on 1 February 2023 and were subject to transitional arrangements which ended on the 2 August 2023. The BCD is satisfied the BDAR has met the transitional arrangements.

7. Outdated guidelines were used for some targeted fauna surveys

Section 5.3 of the BAM requires species surveys to comply with the Department's threatened species survey guides. The Department published new BAM survey guides for koala[2] and for threatened reptiles[3] in 2022.

Section 5.4.4 of the BDAR states that surveys for koala and pale-headed snake were undertaken in accordance with the *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities* (DEC, 2004). Koala surveys also included detection dog surveys which is a suitable survey method in the new guide.

All surveys completed after the publication of a new survey guide should be undertaken in accordance with the relevant guide. The BCD notes the surveys for koala and pale-headed snake were undertaken prior to the publication of the new 2022 survey guides. The BDAR has included an explanation of the timeline of these surveys and the new survey guide publications. The BCD accepts the survey effort undertaken in this instance, noting the surveys were undertaken using best-practice methods (at the time) that can be replicated for repeat surveys.

8. More detail of proposed mitigation measures is required to meet BAM requirements

Section 8.4 of the BAM requires the proponent to identify measures to mitigate and manage impacts. Table 6.3 of the BDAR details the proposed mitigation measures. The table does not include sufficient detail to meet the requirements of Section 8.4(2) of the BAM, such as identifying measures with a risk of failure and evaluating the risk and consequence of any impacts likely to remain after mitigation measures are applied.

Recommendations

8.1 The BDAR is revised to include additional details on the proposed mitigation measures to accord with the BAM.

9. Data inconsistencies should be reviewed

Table 8.8 on page 190 of the BDAR is titled "*Summary of ecosystem credits for scattered trees associated with Box Gum Woodland"* but presents data on species credits for Austral Toadflax and Bluegrass. The number of species credits listed in this table does not correspond to the total number of credits required for the project in the combined BAM-C cases or presented elsewhere in the report.

[2] DPE (2022). *Department of Planning and Environment Koala (Phascolarctos cinereus) Biodiversity Assessment Method Survey Guide.* Department of Planning and Environment.
[3] DPE (2022). *Department of Planning and Environment Threatened reptiles Biodiversity Assessment Method survey guide*. Department of Planning and Environment.

Recommendations

9.1 Review the data inconsistencies referenced in this response.

Matters of National Environmental Significance (MNES)

10. Additional information is required to enable the BCD to conduct the bilateral assessment for the project

The BCD has reviewed the BDAR, including Section 8 – Assessment of EPBC Act, and has identified additional information is required to allow the bilateral assessment to be completed. The following information is required:

- New maps that show the location/s of each impacted MNES entity in relation to the project's footprint.
- Further details of survey methodologies for impacted MNES species and how they are consistent with (or justification of divergence from) published Australian Government guidelines and policy statements.
- A table of MNES entities by relevant Commonwealth guidelines and policy statements in which applicable actions are stated. Describe how those applicable actions have been considered for each MNES entity for this project.

Recommendations

10.1 The proponent should provide additional information in relation to the assessment of impacts to MNES as outlined in this letter to enable the Bilateral Assessment to be completed for this project.

11. Operation of the BAM-C requires revision to account for vegetation zones that correspond to EPBC Act listed TECs

To meet the requirements of the bilateral agreement, the Threatened Biodiversity Data Collection (TBDC) and BAM-C have separate profiles for threatened ecological communities (TECs) listed under both the BC Act and the EPBC Act. This allows the consent authority to issue conditions of consent in accordance with the EPBC Act Condition-setting Policy (noting the Commonwealth remains the decision-maker for Controlled Action Approvals).

The BAM-C for the project has input vegetation zones that contain dual-listed TECs as the BC Act community only. These vegetation zones must be duplicated in the BAM-C and the EPBC Act listed community selected for the duplicated zone. This will result in duplication of credits for these zones. Any duplications in credits should not be counted towards the total credit requirement. The consent authority should select the credit requirement for the EPBC Act listed TECs instead of the BC Act entity for inclusion in any consent conditions if development consent is granted.

Recommendations

11.1 The assessor revises the BAM-C for the assessment to account for EPBC Act threatened ecological communities.

11.2 The consent authority notes the above will result in duplication of credits for zones input into the BAM-C. Should development consent be granted, the conditions should only list the offset obligation for the EPBC Act TEC.