Your ref: SSD-50505215
Our ref: DOC24/699892

Lauren Clear
Senior Environmental Assessment Officer
Department of Planning, Housing and Infrastructure

Via Major Projects Portal: PAE-75002465

Dear Lauren

Subject: **Bullawah Wind Farm (SSD-50505215)**

Thank you for your email dated 21 August 2024 seeking advice from the Biodiversity, Conservation and Science Group (BCS) of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) on the Environmental Impact Statement (EIS).

BCS did not receive a complete spatial data package for the project until 6 September 2024, and therefore was not able to meet the statutory agency response deadline.

BCS has reviewed the exhibited EIS against the Secretary's Environmental Assessment Requirements (SEARs) issued on 12 December 2022, BCS SEARs input dated 25 November 2022 and the Supplementary SEARs – MNES (Bullawah Wind Farm (EPBC 2022/09423)).

The EIS is consistent with the Secretary's requirements for flood risk management (flooding), contingent on the applicant addressing issues 1 to 3 identified in Attachment A.

The EIS is not consistent with the Secretary's requirements for biodiversity.

BCS has identified that the Biodiversity Development Assessment Report (BDAR) is not currently consistent with the Biodiversity Assessment Method (BAM). There are several matters that the proponent will need to amend in a revised BDAR to meet the SEARs for biodiversity. Until an amended BDAR is complete, the biodiversity credit liability may not be correct.

BCS is available to meet with the proponent and their BAM accredited assessor during the Response to Submission (RTS) stage to help them address the recommendations identified in Attachment A and to help ensure the amended BDAR is consistent with the BAM and SEARs.

In summary, the key issues are:

- Bird and bat baseline surveys need to be conducted over a greater proportion of the site and flight paths need to be mapped to inform avoidance.
- There is no Bird and Bat Adaptive Management Plan (BBAMP), nor a detailed BBAMP framework, to demonstrate how impacts to birds and bats will be mitigated and managed.
- The proponent has not demonstrated how biodiversity impacts have been avoided, including impacts to species at risk of Serious and Irreversible Impacts (SAII) such as the critically endangered Plains-wanderer.
- Residual indirect and prescribed impacts are not fully known because the proponent has not specified the individual entities being impacted.
- Threatened Ecological Community (TEC) identification needs to be reviewed taking into consideration Threatened Species Scientific Committee (TSSC) listing advice.

- Further detail is required on proposed mitigation measures, including those that have been deferred to post approval plans.
- Specific and explicit details should be included in the mitigation measures to allow BCS to assess if the proposed measures will be effective in managing residual impacts, as required by the BAM.

A summary of the recommendations is provided in **Attachment A** and detailed comments are provided in **Attachment B**.

The project has been determined as a controlled action under the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and impacts to EPBC Act-listed entities will be assessed under the Assessment Bilateral Policy. This response includes comments on how MNES impacts have been assessed, and recommended actions the proponent should take to ensure that the assessment report that BCS prepares contains all relevant information. **Attachment C** details the information and data required for this assessment.

All plans required as a Condition of Approval that relate to flood risk management or biodiversity should be developed in consultation with BCS so all issues are adequately addressed.

If you have any questions about this advice, please contact Simon Maffei, Senior Project Officer Planning, via planning.southwest@environment.nsw.gov.au or 02 6022 0646.

Yours sincerely

Adam Vey
24 October 2024
Director, South West
Biodiversity, Conservation and Science Group
NSW Department of Climate Change, Energy, the Environment and Water

ATTACHMENT A – BCS Assessment Summary for Bullawah Wind Farm Environmental Impact Statement (SSD-50505215)
ATTACHMENT B – BCS detailed advice for Bullawah Wind Farm EIS
ATTACHMENT C – BCS Bilateral Assessment information and data requirements

ATTACHMENT A BCS Assessment Summary for Bullawah Wind Farm Environmental Impact Statement (SSD-50505215)

In preparing this advice BCS have reviewed the following documents:

- Bullawah Wind Farm Environmental Impact Statement prepared by Umwelt for Bullawah Wind Farm Pty Ltd, dated 30 July 2024.
- Bullawah Wind Farm Project Biodiversity Development Assessment Report (BDAR) Final prepared by Umwelt for Bullawah Wind Farm Pty Ltd, dated 4 July 2024 as Appendix 6.
- Bullawah Wind Farm Project Water Resources Impact Assessment prepared by WRM Water & Environment for Bullawah Wind Farm Pty Ltd, dated 27 June 2024 as Appendix 13

Key Assessment Issues

BCS requests that the following issues and recommendation be resolved prior to determination, unless otherwise specified.

Flood Risk Management (Flooding)

1. The Water Resources Impact Assessment needs to be revised to consider the impact of riverine flooding on the project site, in line with recent hydraulic modelling results.

1.1. During detailed design investigate the potential riverine flood risk posed to the project because of breakout flows originating from the Murrumbidgee River upstream from Darlington Point during the 1% AEP and extreme event scenarios.

2. The proponent should consult with the local councils and the NSW State Emergency Services (SES) on emergency management related flood impacts.

2.1. Actively engage with the local councils and the NSW SES on emergency management matters to inform a site-specific flood emergency response plan that includes actions the councils and NSW SES support.

3. The flood modelling and mapping needs to include more detail of the project infrastructure to adequately inform the flood behaviour and flood risk assessment.

3.1. Ensure future hydraulic models include the detailed design for the proposed project infrastructure to ensure the impact of the project on flood behaviour and the flood risks to critical infrastructure are adequately assessed.

Biodiversity

A BBAMP based on sufficient survey data and documenting commitments to monitor, mitigate and offset residual impacts to avifauna, is yet to be provided.

4.1. Provide a draft BBAMP as an Appendix to the BDAR as required by section 2.7 of the BAM Operational Manual Stage 2.

5.1. Establish a BBUS survey program with sufficient coverage of the site in line with best practice (i.e. 80 per cent of the project area).

5.2. Revise the collision risk assessment for all species.

The BDAR requires additional information to demonstrate that impacts have been avoided and minimised, including to SAII entities.

6.1. Revise maps and tables in Section 7.1 to clearly demonstrate how priority biodiversity constraints have been avoided, including Plains-wanderer important habitat, TECs and land managed for conservation.

6.2. Identify where and how breeding habitat for raptors has been avoided.

Plant Community Type (PCT), Threatened Ecological Communities (TEC), and vegetation zone identification and mapping needs to be revised and the biodiversity credit calculation updated.

7.1. Update all TEC justification tables to include all assessment criteria at the patch scale and outcomes for each vegetation zone assessed.

7.2. Clarify if the occurrence of the Weeping Myall TEC is consistent with vegetation zone 4 or 5 or both.

8.1. Provide the preceding 12 months of rainfall data for each VI plot survey period to support the use of either wet or dry benchmarks.

8.2. Create a separate vegetation zone for VI plots collected in May 2024 to account for average benchmarks instead of wet benchmarks.

9.1. Include a short list of PCTs considered for each PCT, why certain PCTs were discarded and why the final PCT is the best fit.

Targeted survey methods are to be correctly applied and species polygons correctly prepared to ensure the credit calculation is accurate.

10.1. Ensure any ecosystem or candidate species added to the BAM-C due to observations on site are then retained in at least one vegetation zone in the BAM-C habitat suitability: predicted tab.

10.2. Review vegetation zones for predicted species and retain all vegetation zones where suitable foraging and/or breeding habitat occurs in the BAM-C.

11.1. Retain Plains-wanderer as a candidate species in the BAM-C child cases even though the proponent has avoided important mapped habitat.

12.1. Provide further evidence about the specific drying mud conditions for Austral Pillwort to show that the survey conditions for the species were suitable in October and November 2023 or address the requirements set out in section 5.2.3 of the BAM

13.1. Provide further evidence addressing section 5.2.3 of the BAM to support flora species groupings where specific survey requirements or microhabitats do not overlap.

14.1. Provide additional evidence that threatened fauna species are absent or assume candidate fauna species to be present.

Direct, indirect and prescribed impacts need to be appropriately assessed.

15.1. Include specifications and location for perimeter fencing, fire breaks and APZs.

15.2. Revise the BDAR and impact assessment to include impacts to native vegetation and threatened species from perimeter fencing, fire breaks and APZs.

16.1. Review and revise the indirect impacts in Table 8.6 to ensure the likelihood of impact, likelihood of consequences and indirect impact levels are realistic.

16.2. Update Table 8.6 to list specific at-risk fauna species.

16.3. Map the conservation agreement area (CA0465) and the Local Land Services land management agreement areas and apply appropriate buffers.

17.1. Discuss the impacts of the proposal on connectivity and fragmentation for the existing Plains-wanderer conservation areas.

17.2. Discuss the potential for areas of Plains-wanderer important mapped habitat to be sterilised as they may be isolated by proposed infrastructure, in the context of maintaining movement crucial to the species life cycle.

17.3. Review the application of the SAII assessment criteria for Plains-wanderer to consider indirect impacts including fragmentation.

18.1. Map flight paths across the project site, discuss potential impacts on these and where avoidance or minimisation would be applied.

18.2. Update Figure 3.4 to map all connectivity features across the site.

19.1. Revise the assessment to include all additional species at risk of vehicle strike and update in Table 6.1 and include in a table similar to Tables 8.7 to 8.9.

19.2. Assess vehicle strike impacts for all roads and tracks constructed or used for the project.

19.3. Detail the nature, extent and timing of vehicle movement and include in the assessment of prescribed impacts.

20.1. Assess the risk of sedimentation (from construction and operation) on threatened species habitat for individual species during and after high rainfall events when water is moving through the landscape.

20.2. Revise Table 6.1 identify specific prescribed impact risks to individual entities.

20.3. Update Table 6.1 to list all threatened entities that may be dependent on or use the habitat features associated with each prescribed impact.

Proposed offsets for prescribed impacts need to be explained and agreed.

21.1. Review and update section 10.1.4.1 to include feasible conservation actions that are separate to those required for mitigation measures.

Mitigation measures need to include more detail to demonstrate that impacts will be successfully managed.

22.1. Update Section 9 of the BDAR (including Table 9.1) to detail auditable mitigation and management measures that follow the SMART principles.

Matters of National Environmental Significance

23.1. Review the Key Diagnostic Characteristics and Condition Thresholds in the Australian Government listing advice for the Natural Grasslands of the Murray Valley Plains TEC across the combined areas of PCT 44 and 46.

23.2. If required, calculate impacts to the Natural Grasslands of the Murray Valley Plains TEC and assess impacts.

24.1. Develop Spring 2024 survey methods for Plains-wanderer outside the important mapped areas in consultation with the species Accountable Officer and the Australian Government DCCEEW.

24.2. Use the outcomes of targeted surveys to apply additional avoidance of Plains-wanderer habitat.

24.3. Consult with the Australian Government DCCEEW on requirements for any additional offsets for Plains-wanderer.

25.1. Amend Appendix E of the BDAR and specifically address each of the bilateral assessment requirements as detailed in Attachment C to this response.

Other administrative matters

26.1. Update the spatial data, BDAR and BAM-C to ensure all areas entered for each stage, vegetation zone and species polygon match the spatial data.

27.1. Provide verification of all threatened flora from a herbarium.

ATTACHMENT B BCS detailed advice for Bullawah Wind Farm EIS

Flood Risk Management (Flooding)

BCS has reviewed the Water Resources component in Section 6.9 of the EIS and the Bullawah Wind Farm Project Water Resources Impact Assessment in Appendix 13.

BCS has found that the EIS addresses the Secretary's requirements for flooding, provided the applicant addresses the following issues:

1. The Water Resources Impact Assessment needs to be revised to consider the impact of riverine flooding on the project site, in line with recent hydraulic modelling results.

Hydraulic models presented in the exhibited EISs for The Plains Wind and Solar Farms (located approximately 10 km west of Bullawah Wind Farm) indicate that breakouts primarily originate from the Murrumbidgee River between Narrandera and Darlington Point during major flood events. The breakout area presented in The Plains Wind and Solar Farm EISs is located further upstream than the location of the breakout presented in the Bullawah Wind Farm assessment. Given this, the proponent needs to move the upstream boundary for this riverine modelling further upstream to capture these Murrumbidgee breakout flows.

Under the 1% Annual Exceedance Probability (AEP) and extreme event scenarios, these breakouts flow in a south-westerly direction and activate the Eurolie Creek, Nyangay Creek, Wargam Creek and Coleambally Outfall Drain systems, some of which traverse the project site. BCS considers the risk of riverine flooding on the project site to be relatively minor compared to the local catchment flood risks. However, BCS recommends that the proponent consider the impact of riverine flooding to inform the emergency management plans.

Recommendation:

1.1. During detailed design investigate the potential riverine flood risk posed to the project because of breakout flows originating from the Murrumbidgee River upstream from Darlington Point during the 1% AEP and extreme event scenarios.

2. The proponent should consult with the local councils and the NSW State Emergency Services (SES) on emergency management related flood impacts.

The EIS (Section 6.9) suggests that to manage flood risks at the site the proponent will develop flood emergency management measures and include these measures in applicable environmental and safety management documentation. However, the proponent has not demonstrated that it has consulted with the local councils and the NSW SES regarding the emergency management impacts in preparing the EIS.

BCS recommends that the proponent actively consult with local councils and the NSW SES on the emergency management matters to ensure all organisations responsible for flood response support the proposed emergency management approach. This consultation will be necessary to inform the site-specific flood emergency response plan that the proponent develops during detailed design.

Recommendation:

2.1. Actively engage with the local councils and the NSW SES on emergency management matters to inform a site-specific flood emergency response plan that includes actions the councils and NSW SES support.

3. The flood modelling and mapping needs to include more detail of the project infrastructure to adequately inform the flood behaviour and flood risk assessment.

The Bullawah Wind Farm Project Water Resources Impact Assessment provides low-resolution mapping in its overview of the project. The mapping provides limited detail of the proposed project infrastructure, including ancillary works, in the landscape. As such, BCS is not able to determine the impact of the entire project on flood behaviour and the flood risks to the project infrastructure.

The proponent needs to complete clear and detailed mapping of sensitive and hazardous infrastructure, such as the temporary workers' accommodation, battery storage and multiple substations to allow appropriate flood risk assessment to be completed. BCS recommends that future hydraulic modelling is based on the detailed design for the project infrastructure, which will include all aspects of development, to ensure the impact of the project on flood behaviour and the flood risks to critical project infrastructure are adequately assessed.

Recommendation:

3.1. Ensure future hydraulic models include the detailed design for the proposed project infrastructure to ensure the impact of the project on flood behaviour and the flood risks to critical infrastructure are adequately assessed.

Biodiversity

The BDAR at Appendix 6 does not meet the Secretary's requirements for biodiversity.

Specific advice on the BDAR and related sections in the EIS is as follows:

A BBAMP based on sufficient survey data and documenting commitments to monitor, mitigate and offset residual impacts to avifauna, is yet to be provided.

4. A draft Bird and Bat Management Plan needs to be to be prepared.

A draft BBAMP needs to be prepared and appended to the BDAR before project approval to demonstrate that the proponent has identified and can effectively manage and mitigate prescribed impacts associated with turbine strike. As the impact from turbine strike is uncertain, the BBAMP is necessary to manage impacts during operations that may not have been predicted in the BDAR. BCS recommends the proponent consult with BCS before preparing the BBAMP for the project.

Section 7.4.1 and Table 7.4 of the BDAR outlines some information that will be contained in the BBAMP, however there is no specific detail. The information in Appendix D of the BDAR should be used to inform the draft BBMAP.

The BBAMP is an important tool for monitoring, mitigating and offsetting residual prescribed impacts resulting from turbine strikes. Section 2.7 of the BAM Operational Manual Stage 2 requires a BBAMP to be included as an Appendix to the BDAR. BCS can provide guidance to the proponent on acceptable methods for monitoring, mitigation and offsetting strikes based on experience with other similar development types in western NSW.

Recommendation:

4.1. Provide a draft BBAMP as an Appendix to the BDAR as required by section 2.7 of the BAM Operational Manual Stage 2.

5. Additional Bird and Bat Utilisation Survey (BBUS) effort is needed to ensure that the BBUS can be used to reliably inform the draft BBAMP.

It is best practice to conduct baseline bird and bat surveys across 80 per cent of the project area. BCS recommends placing a 3 km by 3 km grid over the proposed development site using GIS and establishing a BBUS survey site within 80 per cent of the quadrants on which turbines would be located. Currently the BBUS only targets 13 bird utilisation survey locations and nine bat utilisation survey locations. This coverage needs to be expanded so that it is appropriate for the 143 turbines that would be constructed and operated. BBUS sites should be focused on proposed turbine locations, with all survey sites ideally occurring within 200 metres from a proposed turbine.

The proponent has not provided information to confirm that the line-of-sight required to effectively collect flight data of birds can be achieved for the sites located within the turbine arrays. A figure demonstrating the view from each vantage point would assist in determining whether the vantage points are appropriate. Flight path vantage points should be selected based on their ability to provide optimum views of birds whose flight paths may intersect with the blade swept area of turbines. The survey effort summarised above is below that required to ensure that the baseline data collected is fit for purpose, consistent with best practice and can adequately inform the collision risk assessment and risk rating for the project.

The proponent should refer to data, collision risk modelling and relevant literature or other published sources to support the BDAR's risk assessments and blade strike predictions. Section 8.2 of Appendix D of the BDAR, supported by the method in Section 8.1 of the same appendix, provides a risk assessment based on the:

- status of at-risk species in the project area
- geographic population concentration
- demographic resilience and
- population size.

BCS does not consider the BBUS to be sufficient in their current form to support the risk assessment in Section 8.2. The evidence provided does not support the likelihood of collision rating and the consequence of this collision. More data, obtained through survey across 80 per cent of the area, is required before the risk assessment can be reliably used to inform the 'status in project area'.

Based on the limited BBUS data and known collision risk, the predicted risk for several species may not reflect the actual risk (Table 8.1, Appendix D). For example:

- Blue-winged Parrot is a long-distance migrant that was recorded twice on site. This species flies at a considerable height and often migrates at night and so would be under-detected in standard BBUS surveys. While its movements are not well known on a local scale, most of the NSW population passes through South West NSW on migration twice a year. In the absence of information showing otherwise, it would be more appropriate to regard the species as Likelihood (moderate), Consequence (moderate) and Risk (moderate).
- The Little Eagle would be more appropriately rated as Likelihood (moderate), Consequence (moderate) and Risk (moderate). Current collision data from wind farms already in operation in NSW suggests that the species is less at risk of collision than Wedge-tailed Eagle and Black Falcon.
- Yellow-bellied Sheath-tailed Bat and Inland Forest Bat are rated as 'moderate risk'. These species are known to fly within the Rotor Swept Area (RSA) height and collisions have been reported several times at wind farms already in operation in NSW. This would suggest that a risk rating of 'high' may be more appropriate.

Recommendations:

5.1. Establish a BBUS survey program with sufficient coverage of the site in line with best practice (i.e. 80 per cent of the project area).

5.2. Revise the collision risk assessment for all species.

The BDAR requires additional information to demonstrate that impacts have been avoided and minimised, including to SAII entities.

6. The BDAR needs to be revised to include more detail to demonstrate that biodiversity impacts have been avoided or minimised.

Avoided biodiversity constraints are to be mapped against the original and revised development footprints to adequately demonstrate the steps the proponent has taken to avoid impacts. Section 7.1 identifies that the proponent has reduced the development footprint by a third from that proposed in the Scoping Report and that ecological values were prioritised in a 7-tier hierarchy where "*a) avoids Plains-wanderer important habitat*". BCS notes that Figure 7.2 and Table 7.2 show that proposed turbines on the western boundary of Oolambeyan National Park have been removed, along with a further two turbines that were removed. It also shows that 13 locations were altered due to their proximity to stick nests, Plains-wanderer habitat and Southern Bell Frog habitat. BCS is supportive of any avoidance that reduces biodiversity impacts and suggests the proponent revise the BDAR to more effectively show how biodiversity constraints have led to design iterations.

For example, Table 7.1 describes how the development corridor has avoided areas where conservation agreements and land management agreements have been established to conserve and maintain Plains-wanderer habitat. Section 7.1.3 refers to Figure 7.2 as demonstrating the "*biodiversity which have been avoided*", but only this map only includes the Plant Community Type (PCT) boundaries, not any of the specified high priority constraints. Figure 7.2 should also show the TECs within the previous and revised footprints. The Plains-wanderer important habitat mapping is shown in the SAII section on Figure 8.5.1, but it is not shown in relation to the original design. The BDAR also does not map the location of the conservation agreements. The BDAR should include tabulated avoidance data for each design iteration so that the reduction in biodiversity impacts can be quantified.

Given the high number of Black Falcon observations and the fact this species is vulnerable to the prescribed impact of turbine collision, it would be appropriate to be avoiding potential impact to this species and to identify this in the BDAR. It is likely that the species is breeding on site and that turbines situated near the areas of high record density will be high risk locations. The proponent has not attempted to map raptor stick nests and breeding locations for any raptors. The BDAR should explain how impacts to raptors will be minimised or mitigated.

Recommendations:

6.1. Revise maps and tables in Section 7.1 to clearly demonstrate how priority biodiversity constraints have been avoided, including Plains-wanderer important habitat, TECs and land managed for conservation.

6.2. Identify where and how breeding habitat for raptors has been avoided.

Plant Community Type (PCT), Threatened Ecological Communities (TEC), and vegetation zone identification and mapping needs to be revised and the biodiversity credit calculation updated.

7. The outcomes of the TEC assessment need to be clear, and all criteria are to be applied.

Section 4.5 of the BDAR justifies the occurrence of TECs against the assessment criteria, with most areas assessed in a table format against the listing criteria. However, each table and vegetation zone do not state whether the vegetation zone is part of the TEC or not. In addition, parts of the listing criteria (e.g. Weeping Myall woodland) are contained in the body text above the

table but are missing from the justification tables. This makes it hard to get see how each zone has been assessed against the assessment criteria and leaves uncertainty around the outcomes.

Some TEC assessment criteria are based on assessment at the patch scale and need to apply the assessment criteria the patch and not be restricted to just plot data.

Section 4.5.4 says that the Weeping Myall TEC only occurs in vegetation zone 5 (PCT26 derived native grassland) and not in vegetation zone 6 (PCT 26 moderate good) which is not consistent with the assessment in the justification table. Because there is no assessment outcome in Table 4.30, BCS is unsure if this is correct.

Recommendations:

7.1. Update all TEC justification tables to include all assessment criteria at the patch scale and outcomes for each vegetation zone assessed.

7.2. Clarify if the occurrence of the Weeping Myall TEC is consistent with vegetation zone 4 or 5 or both.

8. Wet benchmarks have been applied to all vegetation integrity (VI) survey periods which may affect the ecosystem credit liability.

The accredited assessor has applied wet benchmarks to all vegetation zones in both Stage 1 and Stage 2 of the project. Wet benchmarks can only be applied where the cumulative rainfall from the nearest weather station for the 12 months prior to survey is greater than the wet benchmark threshold for each PCT. The accredited assessor has used the cumulative rainfall data for 2022 for all survey periods. While the wet benchmarks meet the required thresholds for surveys conducted in 2023, they do not meet the cumulative rainfall total for VI plots completed in May 2024 (17 plots). The cumulative rainfall at Hay weather station for the 12 months prior to the May 2024 surveys is 376.6 mm which is within the average rainfall threshold for most PCTs in the subject land.

Recommendations:

8.1. Provide the preceding 12 months of rainfall data for each VI plot survey period to support the use of either wet or dry benchmarks.

8.2. Create a separate vegetation zone for VI plots collected in May 2024 to account for average benchmarks instead of wet benchmarks.

9. Additional information is needed to justify the PCT selection.

Section 4.3.2 of the BDAR details the profiles for each PCT selected for the vegetation zones. While the justifications provided for each PCT selection are generally appropriate, this section should be revised to refer to the abundance of dominant species. PCT selection should also include a short-list of candidate PCTs that the accredited assessor considered during the selection process, with a final justification describing why the selected PCT was deemed the best fit, as described in section 3.3.1 of the BAM Operational Manual – Stage 1.

Recommendation:

9.1. Include a short list of PCTs considered for each PCT, why certain PCTs were discarded and why the final PCT is the best fit.

Targeted survey methods are to be correctly applied and species polygons correctly prepared to ensure the credit calculation is accurate.

10. There needs to be a consistent approach to adding and removing predicted species in the BAM calculator (BAM-C).

BCS notes that the Flame Robin was observed in the project site south of wind turbine generator (WTG) 46 and the 330kV transmission line corridor. Although the accredited assessor added this species to Stage 1 and 2 in the BAM-C child cases, they then removed this species from all vegetation zones. BCS recognises that none of the PCTs in the child cases are associated PCTs for the species, however, the PCT in which it was recorded or the closest PCT should be retained in the vegetation zone drop down list in the Habitat suitability: predicted (tab 4).

The accredited assessor has removed some predicted species from some vegetation zones and retained them in others, with little justification. For example, the Black Falcon was removed from PCT 28 derived native grassland (DNG) when there are multiple records of this species immediately adjacent to this vegetation zone. It is highly likely that this species would use vegetation zone PCT 28 DNG for foraging.

Recommendations:

10.1. Ensure any ecosystem or candidate species added to the BAM-C due to observations on site are then retained in at least one vegetation zone in the BAM-C habitat suitability: predicted tab.

10.2. Review vegetation zones for predicted species and retain all vegetation zones where suitable foraging and/or breeding habitat occurs in the BAM-C.

11. Retain Plains-wanderer as a candidate species for survey.

BCS recognises that the project occurs within the important habitat map for Plains-wanderer and that the proponent has avoided direct impacts to these mapped areas. However, BCS do not agree that this means the species can be completely removed from the habitat suitability: candidate species tab in the BAM-C. Removing Plains-wanderer from the BAM-C as a candidate species implies that the project is not within the important mapped habitat area and makes no allowance for any project design changes that may require impacts to these areas to be considered.

BCS also notes that the accredited assessor is completing targeted Plains-wanderer surveys to satisfy Australian Government DCCEEW requirements for this species in PCTs that are atypical and not associated PCTs in the BAM-C for this species. Removing this species from the candidate tab is not consistent with the fact that suitable breeding habitat is known to occur in the project site.

Recommendations:

11.1. Retain Plains-wanderer as a candidate species in the BAM-C child cases even though the proponent has avoided important mapped habitat.

12. Survey conditions for Austral Pillwort are unknown.

Although rainfall and flood conditions prevailed across the site in spring of 2022, targeted surveys for Austral Pillwort were completed in October and November 2023. Table 5.11 and section 5.3.4.3 of the BDAR do not explain whether the specific survey conditions for this species were suitable during targeted surveys. In accordance with the Threatened Biodiversity Data Collection (TBDC) and the associated ‘species with specific survey requirements’ spreadsheet, this species is to be surveyed in drying mud after inundation. There is no evidence that surveys for this species included areas of drying mud during the October and November 2023 surveys which is 12 months after the 2022 flood event.

Further information including photographs of gilgai and wetland habitats should be included to provided certainty that drying mud conditions were available at the time of survey for Austral Pillwort.

Where surveys were not completed in suitable habitats with drying mud after inundation, the species is to be assumed present (unless appropriate supporting evidence is provided) and/or further survey effort completed when conditions are suitable. Consistent with section 5.2.3 of the BAM, an expert report may also be prepared.

Recommendation:

12.1. Provide further evidence about the specific drying mud conditions for Austral Pillwort to show that the survey conditions for the species were suitable in October and November 2023 or address the requirements set out in section 5.2.3 of the BAM

13. Species grouped together for targeted flora surveys should share the same or similar habitat requirements.

Table 5.7 groups flora species into survey groups. Survey group 3 includes six species with a similar suite of associated PCTs. However, some of these species also have very specific survey requirements. For example, Austral Pillwort and *Eleocharis obicis* require drying mud after inundation and waterlogged sites. Conversely, Moore's Burr-daisy and Mossgiel Daisy may respond to heavy rainfall, but do not require areas of inundation and waterlogging to complete surveys and are found in mix of both wet and dry plain soils.

Recommendation:

13.1. Provide further evidence addressing section 5.2.3 of the BAM to support flora species groupings where specific survey requirements or microhabitats do not overlap.

14. Additional survey is needed to demonstrate compliance with threatened fauna targeted survey requirements.

The accredited assessor has conducted minimal targeted surveys for most of the threatened fauna candidate species. It is not appropriate to rely on BBUS surveys as the only targeted surveys for candidate species. This means that it is not appropriate for the BDAR to conclude there will be no impact on Pink Cockatoo, Superb Parrot, White-bellied Sea-eagle, Little Eagle and Square-tailed Kite. These species are dual credit species require targeted breeding habitat surveys. The effect of this is compounded by the fact raptor stick nests have not been recorded, both in terms of location and of species using them. Table 5.26 discusses survey effort in terms of hours of survey from vantage points. This is not targeted survey for candidate species. This is even more important given the small number of BBUS sites used for the BDAR.

Survey for Bush Stone-curlew appears to have been limited to opportunistic flushing while conducting flora transects. This is not an acceptable level of survey for this species and the BDAR needs to provide further evidence to demonstrate Bush Stone-curlew are absent. If the accredited assessor cannot provide further evidence, then the species will need to be assumed present in areas of associated PCTs.

Recommendation:

14.1. Provide additional evidence that threatened fauna species are absent or assume candidate fauna species to be present.

Direct, indirect and prescribed impacts need to be appropriately assessed.

15. Perimeter fencing and firebreaks need to be included in the impact assessment.

To meet the SEARs, all ancillary infrastructure needs to be assessed for biodiversity impacts. Mitigation measures BIO33 and BIO34 in Table 9.1 introduce permanent Asset Protection Zones (APZs) and a permanent perimeter firebreak. However, the accredited assessor has not assessed impacts associated with perimeter security fencing (if proposed) and installing a firebreak based on impact areas mapped in Figure 8.1.1.

The dimensions, location and materials for any fencing should be specified, along with the location and requirements of associated asset protection measures, such as firebreaks. Potential impacts include (but are not limited to) clearing native vegetation (including mowing), introducing and spreading weeds from soil disturbance during construction, creating collision risk from security fencing with barbed/razor wire, and fragmenting habitat.

Recommendations:

15.1. Include specifications and location for perimeter fencing, fire breaks and APZs.

15.2. Revise the BDAR and impact assessment to include impacts to native vegetation and threatened species from perimeter fencing, fire breaks and APZs.

16. The indirect impact assessment at Table 8.6 needs to be revised.

The Impacted Biodiversity column in Table 8.6 captures the impacted fauna generally and does not specifically list the impacted fauna. While BCS understands that listing all species individually would result in a large table, we expect to see some fauna species listed, such as those at highest risk of impact or those at risk of SAII.

It appears the accredited assessor has underestimated the likelihood of most indirect impacts. They also have not considered all potential consequences. For example, the rubbish dumping assessment, and the summary of potential impacts does not link increased rubbish/food scraps to the potential for increased predators. In turn, predatory and pest animals assessment has determined low and very low levels of impacts based on the likelihood of consequences being assessed as minor. BCS does not agree that the consequences of increased predators and pests would be minor, particularly on species such as the Plains-wanderer.

Another example is the indirect impact assessment for transporting weeds. During the construction phase, the accredited assessor has assessed this to be likely with a minor consequence, resulting in a low level of impact. The low level of impact finding is not consistent with the risk matrix presented in Table 8.5 which suggests it should be medium. Regardless, BCS expects the likelihood of transporting weeds to site would be higher than likely, particularly based on the traffic figures presented in the Traffic Impact Assessment at Appendix 12 which states that the project is "expected to generate up to 31 heavy vehicle trips and 35 light vehicles trips per hour in the road network peak periods and up to 292 heavy vehicles and 70 light vehicles daily".

Section 8.2.2 discusses applying a buffer to large intact patches of woody vegetation and Oolambeyan National Park but the BDAR does not discuss indirect impacts on the areas covered by the Biodiversity Conservation Trust (BCT) conservation agreement (CA0465) or the areas covered by land management agreements made with the Local Land Services. Additionally, the areas covered by the land management agreements have not been mapped in the EIS.

Recommendations:

16.1. Review and revise the indirect impacts in Table 8.6 to ensure the likelihood of impact, likelihood of consequences and indirect impact levels are realistic.

16.2. Update Table 8.6 to list specific at-risk fauna species.

16.3. Map the conservation agreement area (CA0465) and the Local Land Services land management agreement areas and apply appropriate buffers.

17. The indirect and prescribed impact assessment for Plains-wanderer needs revision.

Tables 6.1 and 8.8 note that the project may impact Plains-wanderer and Southern Bell Frog movements across the site. For Plains-wanderer, the discussion in Table 8.8 focuses on the impacts on connectivity between areas of mapped important habitat, but it has not considered the impacts on connectivity between conservation areas. Table 7.1 specifically notes that conservation areas have been established in the project area and that the purpose of the agreements "is to conserve and maintain existing primary habitat for the Plains-wanderer". The impacts of connectivity on these conservation areas is to be considered.

BCS recognises that the proponent has avoided direct impacts to important mapped areas of Plains-wanderer habitat. However, the accredited assessor has stated there would be no indirect impacts and SAII indirect impacts including fragmentation. Some areas of avoided important mapped habitat will exist as islands between turbines and associated infrastructure. Table 6.1 should identify that areas of Plains-wanderer important habitat map are likely to be fragmented or isolated by proposed new and upgraded tracks and cable trenches.

For example, Figure 1 below replicates BDAR Figure 8.5.1 and shows the location of habitat for SAII entities. BCS have identified (red squares) the areas of mapped Plains-wanderer important habitat that will be surrounded by new or upgraded roads, turbines, turbine pads and cable infrastructure. In line with the requirements set out in section 6.1.3b of the BAM, the BDAR needs to describe the importance of connectivity between these areas of habitat with surrounding mapped habitat (including within Oolambeyan National Park and BCT Plains-wanderer Conservation Agreements) for maintaining movement that is crucial to the species life cycle. The assessment should include the potential impact of these areas being sterilised due to lack of connectivity.

The Plains-wanderer SAII assessment has not considered potential fragmentation impacts "as no important habitat would be removed". Because indirect impacts to Plains-wanderer have not been addressed in section 8.2 of the BDAR, the consent authority cannot rely on the SAII assessment outcomes in section 8.4 of the BDAR to make an informed decision about potential SAII to this species.

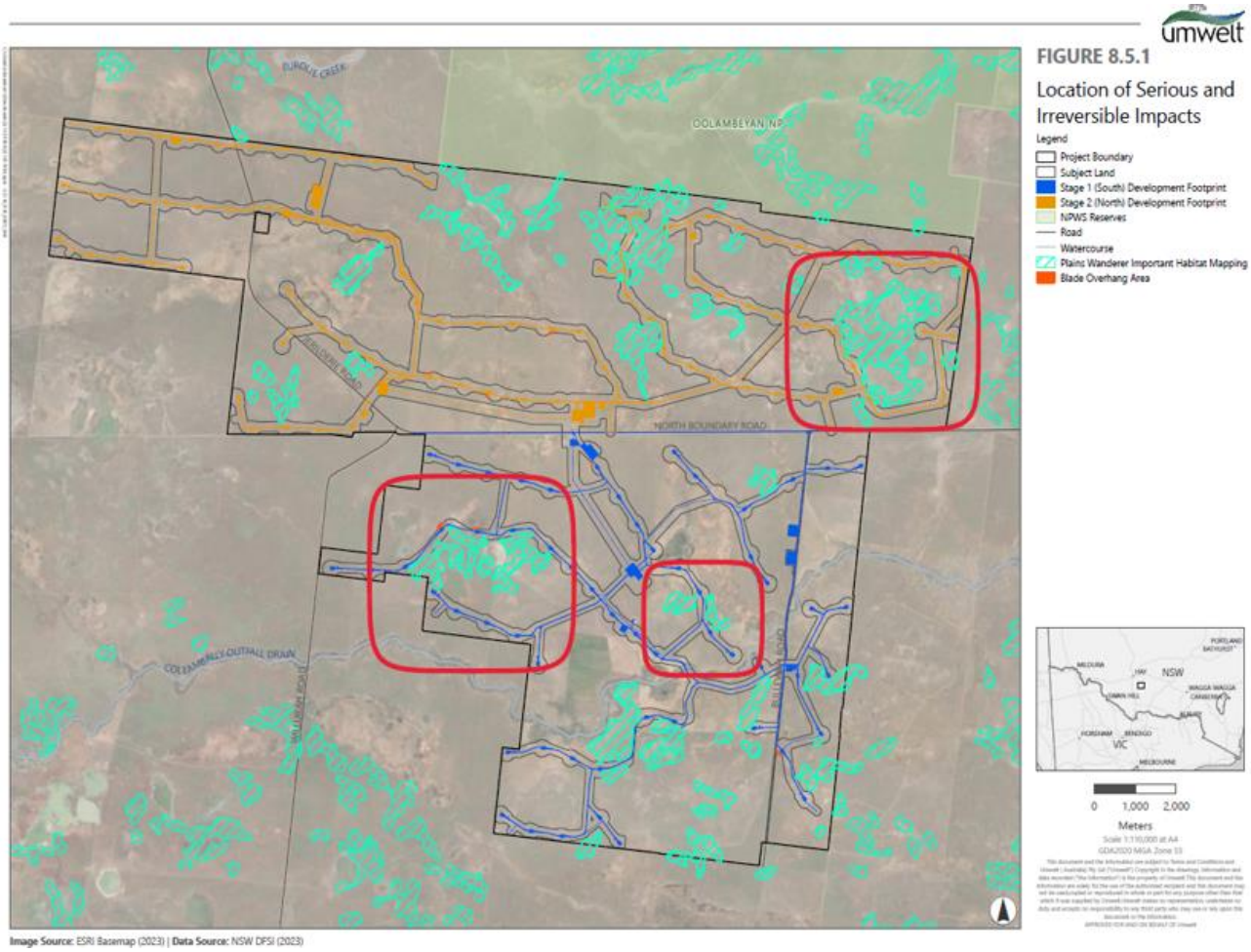

Figure 1: Screenshot of Figure 8.5.1 from the BDAR showing areas of Plains-wanderer important habitat mapping circled in red that are likely to be fragmented and isolated by construction/upgrade of tracks and cable trenches.

Recommendations:

17.1. Discuss the impacts of the proposal on connectivity and fragmentation for the existing Plains-wanderer conservation areas.

17.2. Discuss the potential for areas of Plains-wanderer important mapped habitat to be sterilised as they may be isolated by proposed infrastructure, in the context of maintaining movement crucial to the species life cycle.

17.3. Review the application of the SAII assessment criteria for Plains-wanderer to consider indirect impacts including fragmentation.

18. Revise the prescribed impact assessment to adequately consider flight paths and connectivity.

The presence and location of wind turbines can affect flying vertebrate populations in different ways, including disturbing or severing migration or commuting routes (Rodrigues et al. 2008[1];

[1] Rodrigues L, Bach L, Duborg-Savage MJ, Goodwin J, Harbusch C (2008) Guidelines for consideration of bats in wind farm projects. EUROBATS Publication Series No. 3 (English version). UNEP/EUROBATS Secretariat, Bonn, Germany

Jones et al. 2009b[2]; Cryan 2011[3]). The assessment does not contain map flight paths, nor detail potential impacts to flight paths and how this could impact connectivity. The BDAR should be revised to include maps and consider the predicted flight paths of protected species (not only threatened species) including resident raptor species and nomadic or migratory species whose flight paths are likely to cross the subject land (BAM Subsection 6.1.5 (1.a.–c.)).

The BDAR states that the only significant source of habitat connectivity occurs in the treed vegetation and Figure 3.4 maps woody vegetation formations as the only connectivity concern. Connectivity across the site and broader landscape is not restricted to woody vegetation formations. Wetland shrublands and grasslands, such as PCT 17 Lignum shrubland wetland, PCT 160 Nitre Goosefoot shrubland wetland, and PCT 24 Canegrass swamp tall grassland wetland provide foraging and breeding habitat for threatened fauna, and grassland connectivity is important for another suite of threatened species such Plains-wanderer (see Issue 17).

Table 8.8 of the BDAR does not identify and describe impacts to connectivity for avifauna. Section 8.3.2 of the BDAR should be amended to include impacts to avifauna as well as terrestrial fauna.

Recommendations:

18.1. Map flight paths across the project site, discuss potential impacts on these and where avoidance or minimisation would be applied.

18.2. Update Figure 3.4 to map all connectivity features across the site.

19. The prescribed impact assessment for vehicle strike requires revision and needs to consider all vehicle strike impacts.

The vehicle strike assessment is inconsistent and needs revision. Table 6.1 indicates that vehicle strikes is not a prescribed impact for the project as a low-speed limit would be enforced. However, it also says there is a chance of vehicle strike to Southern Bell Frog and Plains-wanderer. Table 7.3 states that vehicle strikes are a potential impact and Table 8.14 lists vehicle strike as an impact for Blue-winged Parrot, Plains-wanderer, Southern Whiteface, Southern Bell Frog and Diamond Firetail.

As the BDAR did not include the route for transporting turbine components and blades, the BDAR does not consider the impact of vehicle strike along this route, including the implications of travel timing. The vehicle strike assessment needs to include all threatened fauna at risk across all roads and access tracks being used for the project, including the impacts from transporting turbine components and blades.

Recommendations:

19.1. Revise the assessment to include all additional species at risk of vehicle strike and update in Table 6.1 and include in a table similar to Tables 8.7 to 8.9.

19.2. Assess vehicle strike impacts for all roads and tracks constructed or used for the project.

19.3. Detail the nature, extent and timing of vehicle movement and include in the assessment of prescribed impacts.

[2] Jones G, Jacobs DS, Thomas HK, Willing MR, Racey PA (2009a) Carpe Noctem: the importance of bats as bioindicators. Endanger Species Res 8:93–115

[3] Cryan PM (2011) Wind turbines as landscape impediments to the migratory connectivity of bats. Environ Law 41(2):355–370

20. Prescribed impacts need to be assessed for each impacted entity.

The prescribed impact assessment identifies general impacts to some flora and fauna but requires some revision. For example, Table 8.9 of the BDAR states that:

> "Approximately 4.02 hectares of ephemeral wetlands will be permanently removed during construction…However, given the extent of similar habitat throughout the bioregion the removal is unlikely to impact on the local and bioregional persistence of threatened entities".

As per section 8.3.4 (1) (d) of the BAM, all predicted impacts need to be justified with appropriate modelling (if relevant), relevant literature and other published sources of information, or consultation with species experts. The BDAR should be amended to include evidence-based justification for the predicted impacts to water quality, water bodies and hydrological processes that sustain threatened entities.

Additionally, while Table 8.9 discusses the impacts of the development on water quality, water bodies and hydrological process for species such as Southern Bell Frog, it does not consider impacts such as sedimentation on wetlands and farm dams. With the earthworks required for the proposed developments, including for tracks and tower pads, it is highly likely that sediment will be mobilised in high rainfall events which could lead to sedimentation of aquatic and wetland habitats.

The prescribed impacts section should be revised to identify and assess specific risks to individual entities. For example, the potential habitat values of two bridges along the Coleambally Outfall Drain for Southern Myotis is discussed in section 5.3.3.4 and 5. However, Southern Myotis and the outcomes of the targeted survey (section 5.3.5.14 and Table 5.28) are not referred to when identifying prescribed impacts in Table 6.1.

While section 6 and Table 6.1 broadly identify the prescribed impacts associated with the development, they do not provide all the necessary information. For example, Table 6.1 does not list all the threatened entities that may be dependent on or use the habitat features associated with each prescribed impact. While Table 6.1, section 8 and Appendix D list some of the threatened entities, there is no comprehensive list for each prescribed impact, and in some instances broad groups have been listed such as woodland birds, amphibians, reptiles, raptors, etc.

Recommendations:

20.1. Assess the risk of sedimentation (from construction and operation) on threatened species habitat for individual species during and after high rainfall events when water is moving through the landscape.

20.2. Revise Table 6.1 identify specific prescribed impact risks to individual entities.

20.3. Update Table 6.1 to list all threatened entities that may be dependent on or use the habitat features associated with each prescribed impact.

Proposed offsets for prescribed impacts need to be explained and agreed.

21. Offsets for prescribed impacts needs to be fully explored.

Section 10.1.4.1 indicates that offsets are proposed for the prescribed impact of turbine strike. However, the way in which this will be done is unclear and relies on consultation with the BAM policy team.

Examples of biodiversity conservation actions presented in section 10.1.4.1 include actions that BCS does not consider to be an offset. Measures such as funding implementation and monitoring operational mitigation measures are not an additional measure because this is required as part of the proponent's obligation to mitigate impacts to biodiversity.

Recommendation:

21.1. Review and update section 10.1.4.1 to include feasible conservation actions that are separate to those required for mitigation measures.

Mitigation measures need to include more detail to demonstrate that impacts will be successfully managed.

22. Mitigation measures are to be detailed in the BDAR to demonstrate impacts will be effectively effective managed and to give confidence that the offset liability is adequate.

BAM section 8.4 requires that all measures to mitigate and manage impacts are documented in detail in the BDAR. Table 9.1 of the BDAR lacks specific detail for some proposed mitigation and management measures and includes language that does not include clear commitments. For example, BIO12 lists measures to mitigate the impacts associated with construction activities on retained native vegetation and habitat, including "where possible, trim vegetation rather than clear or removal whole plants", "retain tree roots where possible" and "retain dead trees and tree trunks where practical". Terminology such as 'where possible' and 'where practical' does not explicitly commit the proponent to implementing these actions.

All mitigation measures should follow the SMART principles (specific, measurable, achievable, relevant, and time-bound) and be detailed in the BDAR. In line with section 8.4 of the BAM, the proponent should detail measures upfront in the BDAR and not defer this step until they prepare post-approval management plans (such as the BMP). Table 9.1 needs to demonstrate how each proposed measure will be effective and provide evidence these measures have been successfully implemented in similar environments.

Recommendation:

22.1. Update Section 9 of the BDAR (including Table 9.1) to detail auditable mitigation and management measures that follow the SMART principles.

Matters of National Environmental Significance

23. Areas of EPBC Act listed Natural Grasslands of the Murray Valley Plains TEC may be underestimated because it has not been assessed at the patch scale.

Table 4.5 in Appendix E of the BDAR provides the assessment against the Australian Government listing advice for the Natural Grasslands of the Murray Valley Plains. The justification lacks the detail required to provide confidence in the assessmet. The occurrence of PCT 44 and 46 vegetation zones should considered against the assessment criteria at the patch sale rather than separate zones. As separate zones these areas may not meet minimum thresholds but when considered as one patch, they may meet the listing criteria for this community. Further justification and detailed evidence against each step in section 5 (Key Diagnostic Characteristics and Condition Thresholds) of the listing advice should be provided to determine if the community occurs in the subject land. The assessment also does not recognise the Plains-wanderer occurrence as a key fauna indicator species.

Recommendations:

23.1. Review the Key Diagnostic Characteristics and Condition Thresholds in the Australian Government listing advice for the Natural Grasslands of the Murray Valley Plains TEC across the combined areas of PCT 44 and 46.

23.2. If required, calculate impacts to the Natural Grasslands of the Murray Valley Plains TEC and assess impacts.

24. Impacts and potential offsets to Plains-wanderer habitat outside the important mapped areas is unknown.

BCS recognises that targeted Plains-wanderer survey effort is being completed in Spring 2024 during the RTS phase of the project to identify habitats outside the important mapped areas that support this species. This survey is being completed in consultation with the Australian Government DCCEEW to address project specific risks outlined in the project assessment notes and Supplementary SEARs. The BDAR identifies an additional 505 hectares of PCT 44 and 46 that will be directly impacted by the project as potential habitat for the Plains-wanderer. The Spring 2024 surveys should include these areas and be developed in consultation with the Plains-wanderer Accountable Officer and the Australian Government DCCEEW. Outcomes of these surveys should be used to further implement avoid and minimise measures and consider any additional offsets that may be required by the Australian Government DCCEEW.

Recommendations:

24.1. Develop Spring 2024 survey methods for Plains-wanderer outside the important mapped areas in consultation with the species Accountable Officer and the Australian Government DCCEEW.

24.2. Use the outcomes of targeted surveys to apply additional avoidance of Plains-wanderer habitat.

24.3. Consult with the Australian Government DCCEEW on requirements for any additional offsets for Plains-wanderer.

25. A complete MNES assessment should be provided to address the Assessment Bilateral requirements.

The MNES report in Appendix E of the BDAR is well prepared and provides most information required to complete the Australian Government DCCEEW Bilateral Assessment.

Some additional information regarding MNES offsets is required to ensure that the Australian Government DCCEEW Bilateral Assessment can be completed in accordance with section 6 of Attachment C of this response. This should also include any updates as recommend for other issues identified in this response including indirect and prescribed impacts.

Recommendation:

25.1. Amend Appendix E of the BDAR and specifically address each of the bilateral assessment requirements as detailed in Attachment C to this response.

Other administrative matters

26. Vegetation zone and species polygon impact areas need to be consistent with the figures in the spatial data.

Some of the total area to be impacted and the stage areas in Tables 8.1, 10.1 and 10.2 do not match the spatial data provided for the project. These include:

- Total area to be impacted – vegetation zones 1, 7, 9 and 12 do not match the spatial data.
- Stage 1 (linear) area to be impacted – vegetation zones 1, 7, 9, 10, 11 and 12 do not match the spatial data.
- Stage 2 (linear) area to be impacted – vegetation zones 7, 9 and 11 do not match the spatial data.
- Species polygon impact areas in the spatial data do not match the BAM-C.

Recommendation:

26.1. Update the spatial data, BDAR and BAM-C to ensure all areas entered for each stage, vegetation zone and species polygon match the spatial data.

27. Any threatened flora records should be verified by a herbarium.

Any other threatened flora species identified during surveys should be sent to a herbarium for identification and the verification included as an Appendix to the BDAR.

Recommendation:

27.1. Provide verification of all threatened flora from a herbarium.

ATTACHMENT C BCS Bilateral Assessment information and data requirements

For BCS to complete the assessment of EPBC Act-listed threatened species and communities, the following information is required in the BDAR.

1. Background and description of action

The EIS/BDAR need to include:

1. Descriptions and maps of the operational and construction footprints of the project that relate to MNES.
2. Descriptions and maps of staging and timing of the action that may impact on MNES.
3. Maps of the subject land boundary showing the final proposal and disturbance footprint with regards to MNES.

Submit GIS shapefiles of all maps that relate to MNES.

2. Landscape context of the MNES

Ensure that the 'Establishing the site context' set out in section 3 of the BAM have been fully met in the BDAR in relation to MNES.

3. EPBC Act listed threatened species and communities

The EIS/BDAR need to:

1. Demonstrate that field-based survey effort meets BCS survey guidelines and, where available, Commonwealth survey guidelines.
2. Demonstrate supporting databases have been accessed and used (e.g. NSW BioNet Vegetation Classification, NSW BioNet Threatened Biodiversity Data Collection, NSW BioNet Atlas, Commonwealth Species Profile and Threats Database search results).
3. Demonstrate published peer-reviewed literature has been accessed and used.
4. Demonstrate local data has been accessed and used (if relevant).
5. Demonstrate all EPBC Act-listed threatened species and communities has been appropriately mapped in accordance with the relevant Commonwealth listing advice.
6. Demonstrate important populations and critical habitat, as defined in Approved Listing Advice, Approved Conservation Advice and Recovery Action Plans, has been considered.
7. A list of all EPBC Act listed threatened species and communities that occur on the subject land, or in the vicinity (including species that are 'ecosystem credits' in BAM).
8. Discuss, with reference to data and analysis, where any species and communities identified by DCCEEW referral documents have been ruled out as occurring on or near the subject site.

4. Avoidance, minimisation, mitigation, and management

The EIS/BDAR needs to:

1. Demonstrate all feasible alternatives and efforts to avoid and minimise impacts on EPBC Act listed threatened species and communities (including direct, indirect, and prescribed impacts) including an analysis of alternative:
    a. designs and engineering solutions
    b. modes or technologies
    c. routes and locations of facilities
    d. sites within the subject site

e. the identification of any other site constraints in determining the location and design of the proposal (such as bushfire protection requirements, flood planning levels, servicing constraints, etc).

2. Discuss and justify that all feasible measures have been taken to avoid, mitigate and/or manage impacts on EPBC Act listed threatened species and communities (including direct, indirect, and prescribed impacts) including:
    a. techniques, timing, frequency, and responsibility
    b. identify measures for which there is risk of failure
    c. evaluate the risk and consequence of any residual impacts
    d. any adaptive management strategy proposed to monitor and respond to impacts.

5. Impact assessment

The EIS/BDAR needs to:

1. Identify the residual adverse impacts likely to occur to each EPBC Act listed threatened species and/or community after the proposed avoidance and mitigation measures are considered.
2. Justify and provide evidence for the predicted level of impact, with reference to the Commonwealth's 'Significant Impact Guidelines 1.1 – Matters of National Environmental Significance'[4] and DPIE's 'Guidance to Assist a Decision- Maker to Determine a Serious and Irreversible Impact'[5].
3. Provide a summary table with the following information:

Name of EPBC Act listed entity	Nature & consequence of impact (direct & indirect)	Duration of impact (e.g. construction, operation, life of project)	Quantum of impact	Consequence of impact (local, state & national scales)	Impact requires offsetting? (significant or not)

4. Provide data and justification where any EPBC Act-listed threatened species or communities to be considered in the BDAR are considered to be at low risk of impact during the assessment.

6. Offsets

The EIS/BDAR needs to:

1. Identify any MNES that have not been offset using the BAM.
2. Detail how impacts requiring offset correlate to the MNES impacts.
3. Detail the PCTs that require offsetting and the number and type of ecosystem credits required for impacts to MNES.

[4] https://www.dcceew.gov.au/environment/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance#:~:text=This%20Significant%20impact%20guidelines%20provide,and%20Biodiversity%20Conservation%20Act%201999.

[5] https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/guidance-decision-makers-determine-serious-irreversible-impact-190511.pdf

4. Provide detail on threatened species requiring offset and the number of species credits required for impacts to MNES.
5. Demonstrate the BAM (and BAM-C) has been correctly used to identify the number and class of biodiversity credits that need to be offset to achieve a standard of 'no net loss' of biodiversity.
6. Provide any details of ecological rehabilitation and/or biodiversity conservation actions proposed for offsetting.
7. Identify any other offsetting approach proposed, such as land-based offsets, retiring credits by payment into the Biodiversity Conservation Fund and/or through supplementary measures.
8. Provide a summary table with the following information:

Threatened Species / Community listed under EPBC Act	PCTs associated with the ecosystem credit species / ecological community (if applicable)	Area of Impact (ha)	Credits Required	Offsetting Approach	Reference (EIS/BDAR)
TOTAL					

7. Other considerations

The EIS/BDAR needs to:

1. Consider all relevant Commonwealth guidelines and policy statements that are appliable to the action and listed threatened species and/or communities, including but not limited to:
    a. International environmental obligations
    b. Recovery Plans
    c. Approved Conservation Advice
    d. Threat Abatement Plans
2. Provide an assessment for each EPBC Act listed threatened species and/or community, that has been adequately informed by applicable Commonwealth guidelines and/or policy statements. For example, the interaction between the proposed action and important populations or critical habitat identified in policy documents and/or the interaction between the proposed action and threatening processes or recommended conservation actions outlined in Commonwealth policies and plans.