



Your ref: SSI-50831979

Our ref: DOC24/861598

Drew Anderson
Senior Planning Officer
Department of Planning, Housing and Infrastructure- NSW Planning Group
Via Major Projects Portal: PAE-77444464

Dear Drew

Subject: Billabong Creek Environmental Water Regulators (SSI-50831979)

Thank you for your email dated 31 October 2024 seeking advice from the Biodiversity, Conservation and Science Group (BCS) of the NSW Department of Climate Change, Energy, the Environment and Water about the Environmental Impact Statement (EIS).

We have reviewed the exhibited EIS against the Secretary's Environmental Assessment Requirements (SEARs) issued to the proponent on 8 December 2022.

BCS considers that the EIS does not currently meet the Secretary's requirements for biodiversity and flood risk management.

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 the revised BDAR is complete, the biodiversity credit liability may not be correct.

In summary, our key issues are:

- Further detail is required to determine the avoidance and impact to the Serious and Irreversible Impact (SAII) entity - Plains-wanderer (*Pedionomus torquatus*). The BDAR and GIS data package must be amended to include Important Habitat Map (IHM) areas for Plains-wanderer.
- Further information is required to determine if species polygons created for species detected on site comply with Box 2 of the BAM. If BAM requirements have not been met, species polygons will need to be revised and the credit liability may be subject to change.
- Further information is required to determine if threatened species surveys are adequate. If requirements have not been met, additional surveys or a report from a species expert, or assumed presence are required.
- Further information on the mitigation measures is required in the BDAR. The proponent needs to provide specific detail and terms that would allow BCS to assess if the proposed mitigation measures will be effective in managing residual impacts in line with the BAM.
- Additional survey and details are required to determine prescribed impacts to native vegetation, threatened entities and their habitat within and beyond the subject land.

A summary of our assessment, advice and, where appropriate, recommended conditions of approval is provided in **Attachment A**. Detailed advice in **Attachment B**.

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

If you have any questions about this advice, please contact Giorginna Xu, Senior Conservation Planning Officer via planning.southwest@environment.nsw.gov.au or (02) 4927 3185.

Yours sincerely



Adam Vey

28 November 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 Billabong Creek Environmental Water Regulators Environmental Impact Statement (SSI-50831979).

ATTACHMENT B – Detailed advice for Billabong Creek Environmental Water Regulators Environmental Impact Statement (SSI-50831979).

ATTACHMENT A BCS Assessment Summary for Billabong Creek Environmental Water Regulators Environmental Impact Statement (SSI-50831979)

In preparing this advice BCS have reviewed the following documents:

- Appendix H – Flood Impact Assessment, prepared by 3Rivers Joint venture, September 2024.
- *Appendix L - Terrestrial flora and fauna – Biodiversity Development Assessment Report* prepared by GHD dated October 2024.
- Section 7 and 11 – Billabong Creek Regulators, Environmental Impact Statement. October 2024.

Key Issues

The following issues and recommendation are to be resolved prior to determination.

Flooding

1. The BCS SEARs specifically required hydraulic categorisation (floodways and flood storage areas) of the floodplain (Ref 8c) to be mapped and to determine the compatibility of the proposed development with these hydraulic functions (Ref 12e). The EIS does not include these elements.

- 1.1. Complete pre and post development flood function assessments and mapping for both the Hartwood and Wanganella Regulator sites for the 5% AEP (1 in 20 yr), 1% AEP (1 in 100 yr) and Probable Maximum Flood (PMF) events consistent with the Flood Risk Management Manual (2023) and the Flood Function guideline (FM02).
- 1.2. Complete a detailed assessment of the impacts of the proposed developments on flood function for all design events listed above.
- 2.1. Confirm the correct flood level impacts for the 20% AEP (1 in 5yr) and 5% AEP (1 in 20yr) flood flow scenarios at Wanganella and correct the reports as required.

Biodiversity

Further information is required to determine Serious and Irreversible Impacts (SAIL) to Plains-wanderer

- 3.1. Amend the BDAR and GIS data package to include a map displaying IHM for Plains-wanderer in relation to the subject land.

The candidate lists of threatened species, survey effort, suitable habitat and species polygons require review as some have not been prepared in accordance with the BAM and contain omissions that may affect the credit obligation

- 5.1. Additional information should be provided to confirm threatened species surveys were conducted in accordance with relevant guidelines and TBDC. If additional information cannot be provided, additional surveys may be required.
- 6.1. Amend the Table 5.5 of the BDAR to describe any microhabitats associated with Slender Darling Pea and any information used to create the species polygon.
- 6.2. The species polygons for Southern Myotis and Southern Bell Frog should be reviewed and amended to be consistent with relevant guidelines and the TBDC.

- 6.3. Justification should be provided for whether breeding habitat was absent for White-bellied Sea Eagle.

PCT, TEC and vegetation zone identification and mapping need to be revised as they have inaccuracies that can affect the biodiversity credit calculation

- 7.1. Revise the areas mapped as non-native vegetation associated with Plot JR14.
- 7.2. Provide evidence for all areas mapped as non-native vegetation associated with plots JR10 and JR11. Revise the assessment to include any areas that do not have evidence-based justification.
- 8.1. Revise vegetation zones to accurately reflect the results of the vegetation integrity scores

Mitigation measures lack specific detail and to be effective in managing impacts and need to include explicit terms

- 9.1. Update Table 8.9 of the BDAR to include mitigation measures that follow the SMART principles and address the identified impacts.
- 9.2. Use explicit terms in Table 8.9.
- 9.3. Revise Table 8.9 to detail auditable mitigation and management measures to be implemented through post-approval plans.

Further consideration and assessment are required for impacts (indirect and prescribed)

- 10.1. Amend Table 8.4 to be consistent with the format recommended in Table 2 of the BAM Ops - Stage 2.
- 10.2. Update Table 8.4 to address the indirect impacts listed in Section 8.2(2) of the BAM.
- 11.1. Amend Table 8.5 to clearly describe the characteristics for each prescribed impact in accordance with Section 4.3 of the BAM Ops – Stage 2.
- 11.2. Targeted roost surveys should be undertaken to determine presence or absence of roosting habitat for Southern Myotis within the man-made structures on the subject land.
- 11.3. Amend Table 8.5 of the BDAR to provide evidence-based justification for impact prediction and discuss any limitations to the data and assumptions made.
- 11.4. Revise the BDAR to include figures displaying corridors for different guilds (arboreal, terrestrial, aquatic, etc) to demonstrate that movement will not be impaired.

ATTACHMENT B Detailed advice for Billabong Creek Environmental Water Regulators Environmental Impact Statement (SSI-50831979)

Flooding

BCS has reviewed the flood risk management component in Section 7 of the EIS (and Appendix H).

The EIS does not address the Secretary's requirements for flooding.

- 1. The BCS SEARs specifically required hydraulic categorisation (floodways and flood storage areas) of the floodplain (Ref 8c) to be mapped and to determine the compatibility of the proposed development with these hydraulic functions (Ref 12e). The EIS does not include these elements.**

Hydraulic categorisation (or flood function) mapping is important as it identifies sections of the floodplain that perform various important functions. Floodways generally convey a significant portion of the flow during floods and are particularly sensitive to changes that impact flow conveyance. Flood storage areas are generally areas that store a significant proportion of the volume of water and flood fringe areas are the remaining portions of the flood extent that are generally not sensitive to flow conveyance or storage.

The EIS concluded that the proposed developments will not fundamentally change the flood characteristics and hence concluded that the hydraulic functions of flow conveyance in floodways and flood storage would not change significantly.

However, it is still important to map these elements to ensure the development does not create additional floodways and reduce the flood storage capacity of the floodplain.

Conceivably, the addition of the Wanganella flood relief channel will create an additional floodway in the 1% Annual Exceedance Probability (AEP) (1 in 100 yr) flood event (and larger) that needs to be defined and assessed.

Recommendations:

- 1.1. Complete pre and post development flood function assessments and mapping for both the Hartwood and Wanganella Regulator sites for the 5% AEP (1 in 20 yr), 1% AEP (1 in 100 yr) and Probable Maximum Flood (PMF) events consistent with the Flood Risk Management Manual (2023) and the Flood Function guideline (FM02).
 - 1.2. Complete a detailed assessment of the impacts of the proposed developments on flood function for all design events listed above.

- 2. There is uncertainty concerning the 20% AEP (1 in 5yr) and 5% AEP (1 in 20yr) flood level impacts at Wanganella.**

The 20% AEP (1 in 5yr) flood level at Wanganella is reported to increase:

- 86mm (as per Section 4.2.2 in Appendix H); or
- 860mm (as per Section 7.3.2 in the EIS).

The 5% AEP (1 in 20yr) flood level at Wanganella is reported to increase:

- 21mm (as per Section 4.2.2 in Appendix H); or
- 210mm (as per Section 7.3.2 in the EIS).

Recommendation:

- 2.1. Confirm the correct flood level impacts for the 20% AEP (1 in 5yr) and 5% AEP (1 in 20yr) flood flow scenarios at Wanganella and correct the reports as required.

[Biodiversity](#)

The Biodiversity Development Assessment Report (BDAR) at Appendix L does not meet the Secretary's requirements for biodiversity.

Specific advice on the BDAR and related sections in the EIS are:

[Further information is required to determine Serious and Irreversible Impacts \(SII\) to Plains-wanderer](#)

3. The BDAR and GIS package does not include Important Habitat Mapping (IHM) areas for Plains-wanderer

The BDAR must provide information for any species at risk of an SII, including the action and measures taken to avoid the direct and indirect impact to the species at risk of a SII. Table 5.5 of the BDAR states IHM for Plains-wanderer occurs in the proposal footprint. However, IHM has not been displayed or provided within the BDAR or GIS data package. IHM is required for BCS to determine the degree of direct impact to this SII species, and the level of avoidance undertaken by the proponent. This information is required to assist the consent authority with the SII determination.

The BDAR should be amended to display areas of IHM for this species in relation to the subject land, and the GIS data provided to BCS.

Recommendations:

- 3.1. Amend the BDAR and GIS data package to include a map displaying IHM for Plains-wanderer in relation to the subject land.

[The candidate lists of threatened species, survey effort, suitable habitat and species polygons require review as some have not been prepared in accordance with the BAM and contain omissions that may affect the credit obligation](#)

4. Flora threatened species target surveys should be conducted in accordance with relevant guideline and Threatened Biodiversity Database Collection (TBDC)

Table 5.3 of the BDAR states that systematic threatened flora traverses were undertaken for target flora species in September 2022, September and December 2023 with surveys consisting of 5-10 metre spaced traverses.

Threatened species surveys must be conducted as per section 5.3 of the BAM, which requires surveys to comply with the Department's threatened species survey guides and the TBDC. Section 4.2 of the *Surveying threatened plants and their habitats: NSW survey guide for the Biodiversity Assessment Method* outlines the maximum distance between parallel field traverses per life form and vegetation density. The guideline states that the maximum distance between traverses for herbs and forbs within open vegetation is 10m. The spatial data package presents distances wider than the recommended maximum distance (see Figure 1). Any variation from the recommended maximum distance should be documented and justified in the BDAR. If adequate justification cannot be provided, additional surveys or a report from a species expert, or assumed presence may be required.

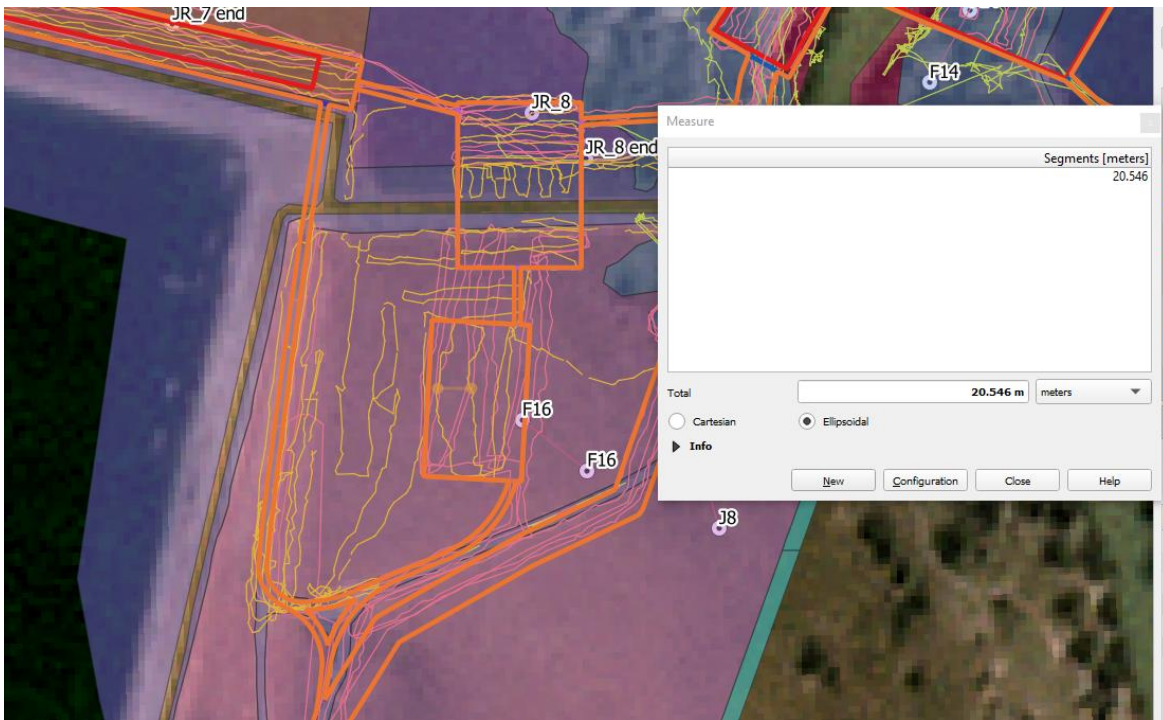


Figure 1 Example of distance between parallel field traverse greater than the recommended 10 metres. The orange polygon represents the development footprint. The orange lines represent the September 2023 threatened flora transects. The pink lines represent the September 2022 threatened flora transects.

5. Additional information is required to demonstrate fauna threatened species target survey requirements have been met

Threatened species surveys must be conducted as per section 5.3 of the BAM, which requires surveys to comply with the Department’s threatened species survey guides and the TBDC. The objective of the species survey is to determine, with a high level of confidence, the presence of the species on the subject land and, if present, the number of individuals or area of known habitat. Section 4.4.4(1) of the *Biodiversity Assessment Method Operational Manual – Stage 1* (BAM Ops – Stage 1) requires that the assessor must undertake a targeted threatened species survey using a scientifically robust, fit-for-purpose and repeatable method.

Sufficient evidence should be provided within the BDAR to demonstrate compliance with the relevant guideline and the TBDC, including comprehensive GPS coordinates and tracks, dates, timing, person hours, weather conditions and photographs.

Additional survey effort information is required for the following fauna species and guilds:

- Australian Bustard (*Ardeotis australis*)
- Raptors
- Pink Cockatoo (breeding) (*Lophochroa leadbeateri*)
- Superb Parrot (*Polytelis swainsonii*)
- Koala (*Phascolarctos cinereus*)

The BDAR is unclear of timing and specific methods for Australian Bustard, Pink Cockatoo and Superb Parrot targeted surveys. The BDAR should be amended to include a breakdown of survey effort timing, how many locations were surveyed, and whether the effort was repeated. The BDAR should also provide evidence that surveys were fit-for-purpose i.e. how each survey was specific to each targeted species. Evidence may include reference to peer-reviewed literature or guidelines applicable to the species. Additionally, Pink Cockatoo was recorded within the subject land - the

BDAR includes minimal justification to exclude breeding for this species. The BDAR should include a method that confidently determines presence or absence of breeding Pink Cockatoo.

Raptors: Table 5.3 of the BDAR states that '*nest tree census*' were conducted throughout the site. The GIS data package does not include a GIS file for raptor transects. This should be provided to BCS for review. Further to the above, the BDAR should provide the specific method used for surveys including the time of surveys and whether surveys were repeated. It is important to note that BCS does not consider threatened flora traverses to be 'fit-for-purpose' when conducting nest tree surveys. Nest tree surveys should be standalone surveys and within the timing outlined in the TBDC.

Koala: Further information is required to confirm that the targeted surveys for Koala were undertaken in accordance with the *Koala (Phascolarctos cinereus): Biodiversity Assessment Method Survey Guide*. The BDAR should be amended to include the required information outlined in Appendix F of the Koala guideline, specifically the Spot Assessment Technique and spotlighting.

Recommendations:

- 5.1. Additional information should be provided to confirm threatened species surveys were conducted in accordance with relevant guidelines and TBDC. If additional information cannot be provided, additional surveys may be required.

6. Species polygons require review and additional information is needed to demonstrate BAM requirements.

A species polygon must be prepared in accordance with Box 2 of the BAM for each species credit species if:

- a. a survey, expert report or important habitat map confirms that the species is present or is likely to use suitable habitat on the subject land

Table 5.5 of the BDAR states that '*Species polygons* [for Slender Darling Pea (*Swainsona Murrayana*)] were mapped according to the BAM and threatened flora survey guidelines (DPIE 2020a) based on the GHD accredited assessor's assessment of the area of occupied, suitable microhabitat surrounding the identified population.' However, the BDAR does not provide a description of the 'suitable microhabitat' or detail what the accredited assessors assessment concluded. The BDAR should be amended to include this detail, with evidence such as published literature to support the microhabitats listed.

The '*Species credit*' threatened bats and their habitats - NSW survey guide for the Biodiversity Assessment Method, outlines that '*All habitat on the subject land where the subject land is within 200m of a waterbody with pools/ stretches 3m or wider including rivers, creeks, billabongs, lagoons, dams and other waterbodies on the subject land*' should be included in the species polygon for the Southern Myotis (*Myotis macropus*). However, the polygons provided in the BDAR only partially include the habitat to be impacted. Table 5.5 of the BDAR states that PCTs 7, 10 and 13 are associated with Southern Myotis. However, the species polygons only include 'moderate' vegetation zones. Per the guideline, the polygon should include all proposed areas of impact surrounding the 200m buffer.

Similarly, the polygons provided for Southern Bell Frog (*Litoria raniformis*) only partially include the habitat to be impacted for this species. The NSW Survey Guide for Threatened Frogs: A guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method (Frog Guideline) requires the species polygon boundary for Southern Bell Frog to '*align with aquatic habitats linked directly to the record and a buffer, incorporating the PCTs with which the species is associated, of 200 metres radius from the top of bank. Where relevant this should include minimum 50-metre-wide corridors of native and non-native vegetated areas linking the available waterbodies species polygons for Southern Bell Frog*'. Polygons should be revised per the Frog Guideline to include aquatic habitats linked to the record and buffer, and the BAM-C amended accordingly.

The GIS data package includes records of White-bellied Sea Eagle (*Haliaeetus leucogaster*). However, little information has been provided to determine whether breeding habitat has been considered for this species. As discussed in Recommendation 5, further detail is required for the 'nest tree census'. If additional information cannot be provided, additional surveys or a species polygon may be required.

The BDAR should explain why a species polygon was not created for this species.

Recommendations:

- 6.1. Amend the Table 5.5 of the BDAR to describe any microhabitats associated with Slender Darling Pea and any information used to create the species polygon.
- 6.2. The species polygons for Southern Myotis and Southern Bell Frog should be reviewed and amended to be consistent with relevant guidelines and the TBDC.
- 6.3. Justification should be provided for whether breeding habitat was absent for White-bellied Sea Eagle.

PCT, TEC and vegetation zone identification and mapping need to be revised as they have inaccuracies that can affect the biodiversity credit calculation

7. Areas of non-native vegetation must be consistent with the BAM

Section 4.1 of the BDAR states '*Guidance provided by NSW DCCEEW (2024c), defines areas that are comprised of less than 15% native vegetation are to be mapped as 100% exotic and excluded from the calculation of native vegetation extent.*' However, the guidance refers to the SPRAT Register of Critical Habitat and does not support this statement.

Section 9.3 of the BDAR states that 4.04 hectares and 0.95 hectares of vegetation '*does not require assessment for biodiversity credits as per BAM Section 9.3(1-2)*'. However, the BAM plot data for Plot JR14 includes native species such as *Alternanthera denticulata*, *Salsola australis*, *Chloris truncata*, *Paspalidium jubiflorum*, *Euchiton sphaericus*, *Rumex brownii*, *Carex inversa* and *Sida trichopoda*. Section 4.1.2 of the BAM outlines that areas considered not native vegetation do not contain native vegetation, and that justification as to why these areas do not support any native vegetation must be provided in the BAR.

Therefore, the area associated with Plot JR14 does not comply with the BAM requirements to consider this area as 'non-native'. Additionally, the BDAR must include justification as to why areas associated with plots JR10 and JR11 do not support any native vegetation.

Recommendations:

- 7.1. Revise the areas mapped as non-native vegetation associated with Plot JR14.
- 7.2. Provide evidence for all areas mapped as non-native vegetation associated with plots JR10 and JR11. Revise the assessment to include any areas that do not have evidence-based justification.

8. Condition classes for vegetation zones should more accurately reflect vegetation integrity

To ensure mitigation commitments to avoiding high condition vegetation or micro-siting into low condition are effective, BCS expects vegetation zones are labelled with accurate identifiers. In Table 4.3 and vegetation zones with a VI score above 70 and up to 97.3 have been labelled as 'moderate' instead of 'high' or 'excellent'. The range of vegetation integrity for 'poor' condition vegetation zones have a VI score of 44.4.

- 8.1. Revise vegetation zones to accurately reflect the results of the vegetation integrity scores

Mitigation measures lack specific detail and to be effective in managing impacts and need to include explicit terms

9. Mitigation measures need more detail to meet requirements of the BAM

Section 8.4 (2) of the BAM outlines that the BDAR must:

- a. document mitigation measures proposed to manage impacts, including techniques,
- b. timing, frequency and responsibility for implementing each measure
- c. identify any measures for which there is risk of failure
- d. evaluate the risk and consequence of any impacts likely to remain after mitigation measures are applied

Table 8.9 of the BDAR states that management controls will be included in the Construction Environmental Management Plan (CEMP), Operational Environmental Management Plan (OEMP) or 'plans'. However, Table 8.9 currently lacks specific detail for some proposed mitigation and management measures, includes non-explicit terms and does not assess the risk and consequence of any residual impacts. All mitigation measures should follow the SMART principles (specific, measurable, achievable, relevant, and time-bound) and be detailed in the BDAR. This should not be deferred to post-approval management plans (such as the CEMP or Biodiversity Management Plan (BMP)).

Further to the above, Table 5.4 of the BDAR states that there were '*multiple observations of the species [Little Eagle (*Hieraaetus morphnoides*)] near large stick nest adjacent to the proposal footprint*'. Table 8.9 should be amended to include specific mitigation measures to ensure the nest will not be disturbed.

- 9.1. Update Table 8.9 of the BDAR to include mitigation measures that follow the SMART principles and address the identified impacts.
- 9.2. Use explicit terms in Table 8.9.
- 9.3. Revise Table 8.9 to detail auditable mitigation and management measures to be implemented through post-approval plans.

Further consideration and assessment are required for impacts (indirect and prescribed)

10. More detail is required to determine the indirect impacts associated with the proposal

Section 8.2 of the BAM outlines that a BDAR must describe the following:

(1)(a) *the nature, extent, frequency, duration and timing of indirect impacts of the proposal*

(b) *the consequences of indirect impacts on biodiversity values*

(3)(a) *describe the nature, extent and duration of short-term and long-term impacts*

(b) *identify the native vegetation, threatened species, TECs and their habitats likely to be affected and the type of indirect impact that is likely to occur*

Table 8.4 should be amended to clearly address the above. BCS recommends the format provided in Table 2 of the *Biodiversity Assessment Method Operational Manual – Stage 2* (BAM Ops - Stage 2). Additionally, Table 8.4 does not describe and assess all potential indirect impacts of the proposal such as disturbance to specialist breeding and foraging habitat for species such as Plains-wanderer, Southern Bell Frog and Southern Myotis. Amend the BDAR to address the list of potential indirect impacts outlined in Section 8.2(2) of the BAM.

Recommendations:

- 10.1. Amend Table 8.4 to be consistent with the format recommended in Table 2 of the BAM Ops - Stage 2.
- 10.2. Update Table 8.4 to address the indirect impacts listed in Section 8.2(2) of the BAM.

11. Prescribed impacts have not been adequately assessed

The assessment of human-made structures; connectivity; water quality, waterbodies and hydrological processes; and vehicle strike in Table 8.5 and 8.6 of the BDAR require review.

Human-made structures: Potential impacts to Southern Myotis have not been adequately assessed. Table 8.5 of the BDAR acknowledges that the bridge and pump-house may contain roosting habitat for this species. However, adequate survey has not been conducted to determine presence or absence of roosting. To understand the impacts of removing these structures, surveys should be completed to determine presence or absence of roosting habitat for Southern Myotis. BCS does not support delaying microbat roost searches until pre-clearance surveys. Furthermore, Table 8.5 of the BDAR states *'There is no evidence to suggest that human made structures within the proposal footprint would have particular value to local populations of threatened microbats'* and that there are *'alternative habitat resources in the surrounding area'*. However, the BDAR includes minimal justification to support this statement. Predictions must be justified with surveys, relevant literature and other published sources of information, or advice from experts per section 8.3.2(1)(c) of the BAM.

Connectivity: Table 8.5 of the BDAR does not adequately predict the consequences of impacts for the persistence of the threatened entities identified within the subject land. The BDAR should take into consideration mobility, abundance, range and other relevant life history factors specific to species known or considered likely to occupy the subject land. Additionally, Table 12 of the BAM Ops - Stage 1 requires a map (and associated GIS files) displaying the location of all prescribed impact features.

Water quality, waterbodies and hydrological processes: Table 8.5 of the BDAR states that *'increases in the extent, depth and duration of inundation upstream of each regulator'*. However, the BDAR does not describe or predict the impact of these changes to surrounding vegetation and the threatened species which utilise these areas. For each prescribed impact, the following characteristics must be described:

- impacted entities
- nature of the impact
- extent
- frequency
- duration
- timing; and
- consequences

Table 8.5 of the BDAR should be amended to include a figure displaying the extent of areas that are considered likely to experience localised effects on hydrology. The BDAR should include a list of the entities within the impact area (including PCTs which rely on water requirements to maintain their communities of plants, ecological processes and ecosystems services) and predict the consequences to the threatened species identified. Predictions must be justified with appropriate modelling (if available), relevant literature and other published sources of information, or consultation with species experts.

Vehicle Strike: Table 8.6 of the BDAR states that due to the location of the proposal being within a *'rural area'*, and the *'low density of populations'* that the consequence of vehicle strike is *'unlikely to substantially impact'* Southern Bell Frog, Raptors, Bush Stone-curlew or Plains-wanderer. However, minimal justification is provided to support this statement. The BDAR should estimate vehicle strike rates with supporting data or literature where available.

- 11.1. Amend Table 8.5 to clearly describe the characteristics for each prescribed impact in accordance with Section 4.3 of the BAM Ops – Stage 2.
- 11.2. Targeted roost surveys should be undertaken to determine presence or absence of roosting habitat for Southern Myotis within the man-made structures on the subject land.

- 11.3. Amend Table 8.5 of the BDAR to provide evidence-based justification for impact prediction and discuss any limitations to the data and assumptions made.
- 11.4. Revise the BDAR to include figures displaying corridors for different guilds (arboreal, terrestrial, aquatic, etc) to demonstrate that movement will not be impaired.