



Planning and Assessment Group  
Department of Planning and Environment  
Locked Bag 5022  
PARRAMATTA NSW 2124

Attention: Mr Iwan Davies

Dear Mr Davies

**RE: Winterbourne Wind Farm Environmental Impact Statement (SSD-10471)**

Thank you for your e-mail dated 14 November 2022 about the Environmental Impact Statement (EIS) for the proposed wind farm at Winterbourne seeking comments from the Biodiversity and Conservation Division (BCD) of the Biodiversity, Conservation and Science Directorate in the Environment and Heritage Group of the Department of Planning and Environment. I appreciate the opportunity to provide input.

The BCD and National Parks and Wildlife Service (NPWS) have reviewed the documents supplied, including the EIS, Biodiversity Development Assessment Report, Detailed Maps, Noise and Vibration Assessment, Landscape and Visual Impact Assessment, Aviation Impact Assessment, Bushfire Risk Assessment, Telecommunications EMI Study, World Heritage Assessment and Rapid Flood Assessment.

Based on this review and on the inspection of the site undertaken by BCD officers from 7 – 9 December 2022 we advise that several issues are apparent with the assessments for biodiversity and NPWS matters. Our detailed comments on these issues are provided in **Attachment 1** to this letter.

For biodiversity, the land category assessment is incomplete and has not considered critically endangered ecological communities and flora, avoidance and minimisation of impacts on biodiversity values is insufficient, vegetation mapping and vegetation zones are inaccurate, vegetation integrity scores may have been reduced by surveys undertaken during inappropriate seasonal conditions, the extent of impacts on serious and irreversible impact (SAII) entities is unacceptable, bird and bat utilisation data are insufficient to inform the assessment of impacts on these species, threatened fauna and flora surveys for some threatened species do not accord with the Biodiversity Assessment Method (BAM) 2020, fauna species polygons for some threatened species are incorrect, the assessments for koala and greater glider have not considered the current listing status of these threatened species, prescribed and indirect impacts have not been offset, and impacts arising from the haul route have not been assessed or offset.

For NPWS estate, the assessment of the impacts on aerial firefighting and park operations has not addressed the issues raised by NPWS during consultation with the proponent, in its current form the proposal will impede NPWS firefighting capabilities and operations, the bushfire assessment has not sufficiently addressed the impacts on NPWS estate, the landscape and visual assessment is incorrect and does not sufficiently identify or avoid visual impacts on the declared wilderness, the noise assessment does not consider noise impacts on camping in the wilderness and does not sufficiently identify or avoid noise impacts on the declared wilderness, the impacts on habitat

connectivity with NPWS estate have not been sufficiently mitigated, and electromagnetic interference with NPWS communications has not been sufficiently mitigated.

Most of the biodiversity issues identified in this response have already been discussed with the consultants NGH during our site inspection from 7-9 December 2022.

The BCD and NPWS recommend that:

#### *BCD Recommendations*

1. The land category assessment for the development site must be amended in accordance with the mapping and advice provided by the BCD.
2. Further avoidance and minimisation measures are required for the proposal and documented in the BDAR to reduce impacts on biodiversity, particularly impacts on existing native vegetation in good condition, threatened and SAIL entities, and the NPWS estate.
3. The vegetation mapping must be refined to represent the native vegetation extent, composition and condition on the site more accurately, reassign Plant Community Types where required, and partition the vegetation into vegetation zones, to satisfy the requirements of the BAM 2020.
4. Further justification and analysis are required to ensure seasonal variability and survey timing are considered when determining final Vegetation Integrity scores for the vegetation zones.
5. The current impacts to SAIL entities are at an unacceptable level and further avoidance of these areas is required.
6. The bird and bat risk assessment must be updated by including consideration of survey data collected for the project and analysis of the relative likely strike risk of individual turbines for birds and bats.
7. Further assessment of turbine barrier effects on fauna is required.
8. Further bird utilisation survey effort must be undertaken in consultation with the BCD.
9. Further surveys to identify raptor nesting sites within the project area are required.
10. Further work must be undertaken to map glossy black-cockatoo habitat, identify known or likely flight paths for the species and apply turbine-free buffers to habitat and flight paths to reduce the risk of strike impacts.
11. Further bat utilisation survey effort must be undertaken in consultation with the BCD, with surveys to include additional sites where data gaps are evident and the use of ultrasonic detectors at-height on wind masts.
12. Further micro-siting of the proposed turbine locations is required to minimise the risk of bat strike impacts and to achieve the 120m buffer required between rotor blade tips and treed areas.
13. Additional targeted surveys must be undertaken for target frog species, eastern pygmy possum, rufous bettong and little eagle to satisfy BAM 2020 requirements. Alternatively, the assessor may obtain expert reports or assume presence for species for which sufficient survey / habitat assessment has not been completed.
14. Additional habitat assessments must be undertaken for hollow-bearing trees and stick nests within the development site and buffer area.

15. The adequacy of the targeted threatened flora surveys should be reviewed with an updated land category map, with further targeted surveys undertaken as required by the BAM 2020 and further justification provided in the BDAR for excluding areas of exotic vegetation from such surveys.
16. Species polygons for the barking owl and glossy black-cockatoo must be revised to include all areas of potential breeding habitat.
17. Further detail and justification must be provided for the buffer distance used to exclude isolated patches of habitat from the greater glider species polygon.
18. The revised BDAR must include up-to-date listing status for threatened species and any additional assessment required based on that changed status.
19. A more detailed Bird and Bat Adaptive Management Plan framework should be prepared in consultation with the BCD and included with the revised BDAR.
20. Further information is required to address the full extent of indirect impacts associated with the proposal, including calculating biodiversity credits to offset the indirect impacts as described in the BAM Operational Manual Stage 2.
21. Detailed biodiversity surveys and assessment for the haulage route must be undertaken in accordance with the BAM 2020 and included in the BDAR prior to the proposal being determined.

*NPWS recommendations*

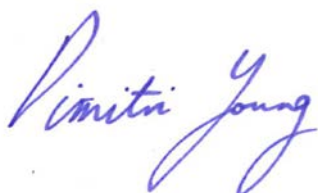
22. Further detailed assessment of the proposal's impacts on NPWS firefighting and park management operations is required, consistent with the SEARs, with explicit consideration of:
  - a. the impacts of the loss of any waterbodies on or near the development site that are currently available to support fire management in the national park as sources of water for helicopter bucketing
  - b. the extra distance and time taken for insertion/extraction of remote firefighters in the Winterbourne and Apsley Gorge sections of the national park, assuming flight paths from Armidale and Walcha
  - c. the loss of Westpac Life Saver Rescue Helicopter Service's assistance in search and rescue operations in the national park
  - d. implications for future use of Very Large Air Tankers and Large Air Tankers to suppress fires in the area.
23. The proposal should be referred to the Civil Aviation Safety Authority for a determination of the need for obstacle lighting for the turbines and towers.
24. Conditions of consent must be included to require engagement with local aerial firefighting and agricultural operators to develop procedures for such flight operations in the vicinity of the Project, for approval by the Secretary and subject to annual review and updates as required.
25. Further detailed assessment of the proposal's bush fire risks is required consistent with the SEARs.

26. The wind farm layout should be reconfigured so that no turbines are located within 600m of key water points and no other turbines are within at least 600m of the national park boundary.
27. Reassessment of the visual impacts in the wilderness must be undertaken using a 3-D Digital Elevation Model to identify those turbines that will intrude into the skyline when viewed from the wilderness areas of the national park – including the Green Gully walk and other points within the wilderness where there is currently no intrusion above the skyline – and all turbines having such impacts must be relocated/removed to eliminate those impacts.
28. Further noise assessment is required that considers anyone camping within the national park, including in areas remote from designated campgrounds, as highly sensitive receivers, and which assesses noise impact on those receivers using noise contours and attenuation relevant to those locations and uses.
29. Turbines that are audible within the national park must be removed.
30. Development infrastructure must be removed from proximity to the national park where it will have an adverse effect on any corridors of native vegetation that connect to the national park.
31. No turbines are to be located within at least 500m of the national park boundary (noting that, as recommended for safe fixed-wing aircraft operations, this buffer should be at least 600m).
32. Turbines B071 and B073 must be relocated out of the interference zone of the NPWS point-to-point link as recommended in Appendix N of the EIS.
33. Conditions of consent must be included that require rectification of any issues with multipoint communications encountered in the first five years of the wind farm's operation.

Due to the numerous changes required to the BDAR and the effect that mapping changes will have on Matter of National Environmental Significance (MNES), the BCD is currently unable to undertake a detailed review of the information provided in accordance with the assessments bilateral agreement with the Australian Government under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*. We will undertake our review under the assessments bilateral agreement after the updated BDAR has been prepared and submitted to the consent authority.

If you have any questions about this advice, please do not hesitate to contact Mr Krister Waern, Senior Operations Officer, at [krister.waern@environment.nsw.gov.au](mailto:krister.waern@environment.nsw.gov.au) or 6640 2503.

Yours sincerely



20 January 2023

**DIMITRI YOUNG**  
**Senior Team Leader Planning, North East Branch**  
**Biodiversity and Conservation**

Enclosure: Attachment 1 Detailed BCD and NPWS Comments – Winterbourne Wind Farm EIS

## **Attachment 1: Detailed BCD and NPWS Comments – Winterbourne Wind Farm EIS**

### **Biodiversity Matters**

#### **Introduction**

The Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment has reviewed the Environmental Impact Statement (EIS) including the Biodiversity Development Assessment Report (BDAR) for the Winterbourne Wind Farm prepared by NGH dated October 2022.

Officers from the BCD undertook an inspection of a small part of the wind farm corridor in the company of NGH from 7 to 9 December 2022. The locations we inspected were selected to review various aspects of the BDAR on site.

Following our review and inspection, due to the level of change required to the BDAR which will affect the final credit obligation, the Biodiversity Assessment Method (BAM) Calculator has not been thoroughly checked at this point.

Also, we note the BDAR (section 7.6) states the final biodiversity credit requirements will change as further targeted surveys are planned, and the final infrastructure layout has not yet been developed.

Based on the above, the submitted BDAR requires significant changes, and we look forward to receiving an updated version of the BDAR for review.

#### **Land Category Assessment**

The Native Vegetation Regulatory map (NVR map) designates land in NSW into several land management categories. A transitional NVR Map has been published, which does not include category 1-exempt land and only partly includes category 2-regulated land.

On 8 February 2022 the proponent's consultant, NGH, provided a draft land category assessment to the BCD for review. On 8 April 2022, the BCD provided GIS data to NGH. This data effectively provided all the NVR mapping for the site held by the Department including the category 1-exempt land.

Clearing native vegetation on category 1-exempt land does not require assessment for the purposes of calculating a credit obligation (BAM 2020, Subsection 1.5.1(d.)). In practice, impact assessment and offset calculations relating to vegetation integrity and habitat suitability are not required on category 1-exempt land. Areas of category 1-exempt land are not included for assessment in the BAM Calculator.

We note the Land Category Assessment report prepared by NGH dated April 2022 has been used to inform the BDAR. However, this report does not incorporate the land category assessment mapping provided by the BCD to NGH, which shows the current land category assessment prepared by the Department.

In addition, the BCD provided further advice to NGH on 15 September 2022 in relation to Critically Endangered Ecological Communities (CEECs) and the habitat of critically endangered plants. Our advice stated that, in areas which have the potential to contain CEECs or habitat for a Critically Endangered species of plant, land categorisation assessments must be supported by evidence from a site-based floristic assessment to demonstrate presence or absence of these features.

If any of these features are present, then these areas must be mapped as Category 2 Regulated Land. The identification of these areas on the site is an additional step required to finalise the land category mapping provided by the BCD.

During the site visit with NGH, the BCD inspected various locations in relation to the land category mapping. We observed several areas of the site that had not been mapped according to the data and further advice we had provided to NGH. When extrapolated across the project, these areas would cover significant parts of the wind farm impact area.

As discussed with NGH during the inspection, a site-based floristic assessment will need to be undertaken to demonstrate the presence or absence of CEEC's and habitat for critically endangered plants to be able to determine the category of land for deciding whether the BAM should be applied to that land.

It is imperative to have an accurate land category assessment for the site so the BDAR can be correctly applied to the land categories.

#### *BCD Recommendation*

1. The land category assessment for the development site must be amended in accordance with the mapping and advice provided by the BCD.

#### Avoid and Minimise

The BDAR states the design phase has preferentially located turbines in cleared areas as a key part of avoiding biodiversity impacts. The number of proposed wind turbines has also been reduced from 130 to 119.

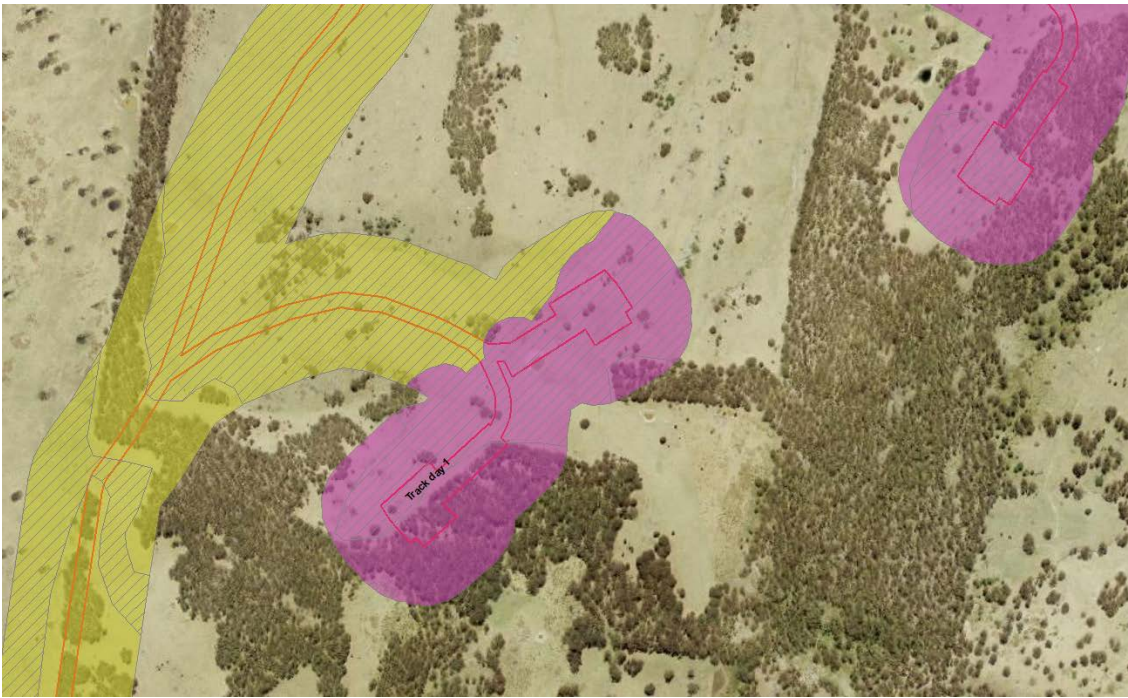
Whilst the BCD acknowledges the avoid and minimise measures provided to date, further avoidance and minimisation measures should be incorporated into the proposal to satisfy the requirements of the BAM 2020. The BDAR indicates that about 425ha of native vegetation will be impacted by the proposal which comprises about 205ha of woodland and 220ha of native grassland areas.

This is a very large biodiversity impact arising from the current proposal and further avoidance should be focused on:

- Removing proposed infrastructure that has a direct and/or indirect impact on areas of native vegetation, particularly areas with a moderate to high Vegetation Integrity (VI) score.
- Removing proposed infrastructure that will impact on known threatened species habitat.
- Removing proposed infrastructure from areas of CEEC, which will also reduce the potential Serious and Irreversible Impact (SAII) considerations for the proposed development.
- Removing proposed infrastructure from areas in proximity to the National Parks and Wildlife Service (NPWS) estate as detailed in the NPWS comments in Attachment 2.

Some example areas where further avoid and minimise could be considered are provided in Figures 1, 2 and 3 below.





**Figure 1: Site location B006, B007, and B176 inspected by the BCD on 7 December 2022 - further avoid should be considered for the proposed infrastructure of the wind turbine locations and the access track - the pink mapped areas are CEEC and SAI entities.**



**Figure 2: Site location B115, B116 and substation inspected by the BCD on 9 December 2022 - the proposed wind turbine B115 is less than 150m from the National Park boundary to the East - this location is also habitat for threatened fauna such as the koala. the proximity of wind turbines next to National Park needs to be reconsidered and biodiversity impacts of the infrastructure in this area should also be reduced.**





**Figure 3: Site location B064- B066 not inspected - the proposed infrastructure in this location appears to target the vegetation in the best condition which is also habitat for threatened flora and fauna - further consideration should be given to locating the proposed infrastructure in the cleared areas.**

#### *BCD Recommendation*

2. Further avoidance and minimisation measures are required for the proposal and documented in the BDAR to reduce impacts on biodiversity, particularly impacts on existing native vegetation in good condition, threatened and SAI entities, and the NPWS estate.

#### Vegetation Mapping

During our site inspection, the BCD checked the vegetation mapping in the BDAR at various points along the wind farm corridor. We found there were several inaccuracies in the extent of native vegetation mapping relating to the polygon shapes on the maps not reflecting the on-ground extent of native vegetation. We also observed that some boundaries of the vegetation mapping had long straight lines which did not reflect the on-ground extent of the native vegetation. This broad mapping style also created large polygons which contained more than one Plant Community Type (PCT) or vegetation condition state.

Further, there were several occasions where the PCT assigned to a mapped area was incorrect. This was most evident for the mapping of some CEEC areas. The BCD discussed this issue on site in detail with NGH and we sent a follow up e-mail to NGH on 15 December 2022 to further clarify this issue.

A more refined mapping procedure is required to reflect the on-site native vegetation extent, condition and composition more accurately.

We also note that all the identified PCTs were only divided into two condition states, either a woodland or a grassland. This is too simplistic to capture the range of condition states occurring on



site. We noted on several occasions that a mapped Derived Native Grassland (DNG) community sometimes contained scattered trees and occasionally areas of vegetation which should have been mapped into a woodland PCT rather than a DNG. As only two condition states were used for the whole site, it was clear that some areas had been lumped together as a ‘best fit’ rather than refining the mapping to include further condition states.

Overall, the vegetation mapping needs to be refined to better reflect the extent, composition and condition of the vegetation on the ground. During the site inspection we observed that a more refined vegetation map would likely further include some areas not currently mapped and potentially exclude other areas which are currently mapped. A refined vegetation map will change the biodiversity credit requirement, including the mapping of the species polygons. The current mapping is not of a standard that can accurately inform the BDAR.

#### *BCD Recommendation*

3. The vegetation mapping must be refined to represent the native vegetation extent, composition and condition on the site more accurately, reassign PCTs where required, and partition the vegetation into vegetation zones, to satisfy the requirements of the BAM 2020.

#### Vegetation Integrity Scores

We note that due to the large development site for this proposal, vegetation surveys and particularly the required BAM plots have been undertaken over the last couple of years and in different seasons. Section 3.2.4 of the BDAR identifies the limitations of the BAM plot surveys as being seasonal variability and survey timing.

The BDAR states, *‘It is recommended that VI plot data be collected during Autumn and Spring to maximise the cover and abundance of native flora. This was generally achieved through the survey program, though a small portion of VI plot data was collected during December 2020 and December 2021.’*

During our site inspection in December 2022, the BCD noted that some of the vegetation zones had significant annual weed growth. Calculating the VI score from BAM plots done during a time where exotic weeds are prolific will greatly reduce the VI score for these areas. This is an issue that would likely underrepresent the true biodiversity value of these vegetation zones and would reduce the biodiversity credit requirement for the associated vegetation zones and species polygons.

The updated BDAR should provide further analysis of seasonal variability of the VI scores and consider using the BAM plot data collected in seasons that would best represent the biodiversity values of the area.

#### *BCD Recommendation*

4. Further justification and analysis are required to ensure seasonal variability and survey timing are considered to determine final VI scores for the vegetation zones.

#### Serious and Irreversible Impacts (SAIL)

The vegetation mapping issues identified above and the incomplete land category assessment for the site will need to be addressed before an accurate assessment of SAIL can be considered.

Two threatened ecological communities listed as potential SAIL entities in the *Guidance to determine a serious and irreversible impact* would be impacted by the project:

- New England Peppermint (*Eucalyptus nova-anglica*) Woodland on Basalts and Sediments in the New England Tableland Bioregion; and

- White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions.

The BDAR identifies that, based on the existing vegetation mapping, 14.4ha (3.32ha grassland and 11.1ha woodland) of the New England Peppermint Woodland will be impacted and 148.98ha (106.08ha grassland and 42.91ha woodland) of the White Box Yellow Box Blakely’s Red Gum Grassy Woodland will be impacted.

The above impacts on SAI entities are high, particularly for the White Box Yellow Box Blakely’s Red Gum Grassy Woodland. Further refinement in the land category assessment and the vegetation mapping will change the above areas for each SAI entity. However, as we have identified above, further avoid and minimise considerations also need to be incorporated into the proposal and this may reduce these SAI impacts overall.

The large impact to the SAI entities is a concern to the BCD. We will await an updated BDAR before providing detailed advice on whether the proposal is likely to have a SAI on the two entities listed above.

Should the Minister, or their delegate, determine that the proposal is likely to have a SAI, they are required, as per Section 7.16(3)(a) of the BC Act, to take those impacts into consideration. The Minister is also required, as per Section 7.16(3)(b) to determine whether there are additional and appropriate measures that will minimise those impacts, should consent be granted.

#### *BCD Recommendation*

5. The current impacts to SAI entities are at an unacceptable level and further avoidance of these areas is required.

#### Bird and Bat Strike

##### *Bird and Bat Risk Assessment*

The Bird and Bat Risk Assessment (BDAR Appendix E) presents an assessment of the risk for each species likely to inhabit the wind farm corridor. The assessment does not include analysis of known or likely flight paths in relation to proposed turbine locations and does not evaluate the strike risk of each turbine location.

##### *Barrier effects*

The BDAR (Section 7.3.2) and Bird and Bat Risk Assessment (BDAR Appendix E) consider groups / rows of turbines can cause barrier effects to aerial species and provides generic information on these disturbance impacts. No further analysis of the proposed turbine layout in relation to these potential impacts and the local landscape and biodiversity features is provided. More detailed assessment of the potential barrier effects of the proposed turbines on species moving across the landscape is required. This information should feed into calculations of individual turbine risk ratings and predicted strike rates. The importance of this issue is heightened given the potential for such barriers to affect connectivity with the adjacent Oxley Wild Rivers National Park.

##### *Bird utilisation survey effort*

Bird Utilisation Surveys (BUS) (BDAR Appendix C) included eight fixed point locations and two reference sites. The number and distribution of these sites does not adequately cover the development site. For example, sites 5 and 6 are located only 600m apart and in similar habitats, while in other areas there are large distances (up to 10km) between survey sites and areas with many proposed turbines (such as the row of turbines 105-121 in the east) that were not covered by any surveys.

### *Wedge-tailed Eagle*

The BUS report (BDAR Appendix C) identifies “*the number of Wedge-tailed Eagles were exceptionally high compared with other wind farms with similar settings*” and recommends consideration should be given to identifying nesting sites to ensure buffers between nests and turbines are provided. The BUS surveys recorded behaviour commensurate with nesting in the area including stick carrying. Given the high number and observed behaviour of wedge-tailed eagles recorded it is likely breeding occurs within the project area. The Bird and Bat Risk Assessment (BDAR Appendix E) also recommended further survey to determine wedge-tailed eagle breeding locations. None of these surveys were undertaken or documented in the EIS.

### *Glossy Black-Cockatoo*

The BDAR indicates the species was recorded on three occasions and evidence of foraging was observed at a further eight locations during a targeted survey of potential habitat areas. The Bird and Bat Risk Assessment (BDAR Appendix E) identifies that strike impacts would be of high consequence for the species and recommends further work to determine how the glossy black-cockatoo is utilising the site. Based on the spatial data provided, several proposed turbines are near identified habitat areas for glossy black-cockatoo, and there is no evidence of further assessment of site usage by the species (such as identification of likely flight paths between habitat areas) or application of turbine-free buffers to these areas.

### *Bat utilisation survey effort*

The bat assessment (BDAR Appendix D) included surveys conducted at eight sites. All detectors were placed near ground level and no bat call data was recorded at-height from detectors set on wind masts. Therefore the bat utilisation assessment does not include any information on habitat utilisation in the rotor swept area where strike impacts are likely to occur.

Survey site 7 failed to record during the autumn survey, therefore an approximately 15km gap between sites 6 and 8 was not surveyed in Autumn, when higher bat activity was recorded across the project corridor. As such, a large proportion the site is represented by data from a single detector during a single survey. The survey effort conducted does not provide sufficient coverage of the site to appropriately inform the impact assessment for bats.

### *Micro-siting and buffers to forested areas for bats*

The Bat Survey Report (Nature Advisory) included as Appendix D of the BDAR states “*At a minimum it is proposed that 120 metres is established as a buffer between forested areas and the tips of wind turbine blades*”. The BDAR also references the 120m buffer distance of turbines to forested areas in Table 6-3 when describing measures undertaken to avoid and minimise prescribed impacts, stating all turbines are located at least 150m from protected areas. This 150m distance apparently refers to National Park areas only, and turbine locations across the project do not appear to have been selected or micro-sited to avoid forested areas or to implement the 120m buffer.

### *BCD Recommendations*

6. The bird and bat risk assessment must be updated by including consideration of survey data collected for the project and analysis of the relative likely strike risk of individual turbines for birds and bats.
7. Further assessment of turbine barrier effects on fauna is required.
8. Further bird utilisation survey effort must be undertaken in consultation with the BCD.
9. Further surveys to identify raptor nesting sites within the project area are required.
10. Further work must be undertaken to map glossy black-cockatoo habitat, identify known or likely flight paths for the species and apply turbine-free buffers to habitat and flight paths to reduce the risk of strike impacts.

11. Further bat utilisation survey effort must be undertaken in consultation with the BCD, with surveys to include additional sites where data gaps are evident and the use of ultrasonic detectors at-height on wind masts.
12. Further micro-siting of the proposed turbine locations is required to minimise the risk of bat strike impacts and to achieve the 120m buffer required between rotor blade tips and treed areas.

### Threatened Fauna Survey Effort

#### *Threatened frog species*

Targeted surveys were undertaken for several candidate frog species. Table 4-6 of the BDAR states surveys were repeated between one and four times at each of the twelve survey sites. The *NSW Survey Guide for Threatened Frogs (DPIE 2020)* requires surveys for each of the targeted species to be repeated four times at each site. Additional survey effort is required to meet the guidelines.

#### *Eastern Pygmy Possum and Rufous Bettong*

The executive summary of the BDAR indicates additional targeted surveys for the eastern pygmy possum and the rufous bettong are proposed to meet survey effort agreed with the BCD as presented in BDAR Appendix O. The survey effort completed does not meet the number of cameras, hair funnels or survey length/number of trap nights required.

#### *Little Eagle*

The executive summary of the BDAR indicates additional targeted survey for the little eagle during the breeding season is proposed. This indicates the assessor does not consider the survey effort completed to date is adequate to confirm the species does not breed at the site. The species was recorded in the study area and was recently known to breed near the site as detailed in Table 7-4 of the BDAR.

#### *Stick nests*

The BDAR states bird utilisation surveys and stick nest searches provide confidence that no threatened raptors are currently breeding within the development site. BCD officers observed several stick nests within the development footprint during the site inspection that were not recorded in the BDAR, and stick nests recorded in the Biodiversity Constraints Report (BDAR Appendix P) are also not mapped in the BDAR, indicating the stick nest survey is incomplete. The large distances between bird utilisation survey sites (e.g. 10km between sites 7 and 13) and incomplete stick nest survey are not sufficient to rule out breeding by threatened raptors at the site.

#### *Hollow-bearing trees*

BDAR section 7.1.3 states hollow-bearing tree survey was not exhaustive, however species polygons for some species were prepared based on buffers to all identified hollow-bearing trees. As the survey did not cover the entire site, additional hollow-bearing trees and therefore, species polygon areas for hollow dependent fauna are likely to be present. Furthermore, the identification of these habitat features should be used to avoid and minimise biodiversity impacts through micro-siting.

### *BCD Recommendations*

13. Additional targeted surveys must be undertaken for target frog species, eastern pygmy possum, rufous bettong and little eagle to satisfy BAM 2020 requirements. Alternatively, the assessor may obtain expert reports or assume presence for species for which sufficient survey / habitat assessment has not been completed.
14. Additional habitat assessments must be undertaken for hollow-bearing trees and stick nests within the development site and buffer area.



### Threatened Flora Survey Effort

The BDAR states the targeted threatened flora surveys were undertaken in accordance with the *Surveying threatened plants and their habitats NSW survey guide for the Biodiversity Assessment Method*. Accordingly, a grid spaced at 100m<sup>2</sup> nested within a 1km<sup>2</sup> grid from a topographic map image was overlaid onto the development site. However, any areas of exotic vegetation or areas categorised as Category 1 land (as shown in the land category assessment in Appendix A) were not surveyed for threatened flora.

As identified above, the land category mapping for the site is incomplete and as such the targeted threatened flora surveys may not have included all the Category 2 lands. Further, the BDAR states that areas of exotic vegetation were also excluded, however further justification should be provided to describe how these areas were identified.

#### *BCD Recommendation*

15. The adequacy of the targeted threatened flora surveys should be reviewed with an updated land category map, with further targeted surveys undertaken as required by the BAM, and further justification provided in the BDAR for excluding areas of exotic vegetation from such surveys.

### Species Polygons

Species polygons for the barking owl and glossy black-cockatoo were prepared using buffers to all identified hollow-bearing trees. As the hollow-bearing tree survey was not exhaustive (as identified in BDAR section 7.1.3), other areas currently not included in the species polygon may contain breeding habitat. All trees must be considered potential breeding habitat for the purpose of preparing the species polygon unless survey has confirmed no suitable breeding hollows are present. The species polygons must be prepared using hollow-bearing tree data, where available, or by assuming suitable breeding habitat is present in trees where no survey has been completed.

Section 4.2.5 of the BDAR describes the greater glider species polygon was prepared using all woodland zones and then excluding isolated patches “*that the species could not reasonably be expected to access*”. No further description of the buffer distance used for this exclusion or how this distance was calculated is provided. In accordance with the BAM section 5.2.5.8, the BDAR must include a description of the information used to prepare the species polygon.

#### *BCD Recommendations*

16. Species polygons for the barking owl and glossy black-cockatoo must be revised to include all areas of potential breeding habitat.
17. Further detail and justification must be provided for the buffer distance used to exclude isolated patches of habitat from the greater glider species polygon.

### Listing Status of Threatened Species

The listing status of the koala is not up to date in the BDAR. The BDAR lists the Koala as vulnerable in NSW. The koala was listed as endangered in NSW in May 2022. The BCD also notes the listing status of the greater glider changed from ‘not listed’ to endangered in NSW in November 2022.

#### *BCD Recommendation*

18. The revised BDAR must include up-to-date listing status for threatened species and any additional assessment required based on that changed status.

### Offsets for Prescribed Impacts of Wind Turbine Strike

Section 7.3.4 of the BDAR identifies that wind turbine strikes on protected and threatened species would be a residual prescribed impact of the proposed project.

Whilst the assessment of prescribed impacts does not result in the generation of biodiversity credits, the consent authority has the discretion to increase the number of biodiversity credits to be retired due to environmental, social and economic impacts of the proposed development, including for prescribed impacts. If mitigation measures or adaptive management do not adequately address the potential impacts and unavoidable residual prescribed impacts will occur i.e., bird and bat strikes, this should be offset via additional biodiversity credits (above the credit requirement generated by the BAM Calculator for direct impacts) and/or other listed conservation measures in accordance with Section 6.1.2(b) of the *Biodiversity Conservation Regulation 2017* (BC Regulation).

A bird and bat adaptive management plan (BBAMP) is to be prepared to help mitigate prescribed impacts. The proponent should consult with the BCD when preparing the BBAMP for the project. The BCD considers the BBAMP should include:

- A proposed monitoring methodology
- Offset quanta for each threatened bird and bat collision, fatality or injury, calculated annually over the operational life of the windfarm. The proposed credit quantum should be reviewed and fully justified. Credit quanta should be calculated according to the conservation status of individual species that may be struck and based upon extrapolations from carcass monitoring data
- For protected (non-threatened) species, the impact to the protected species should be offset where:
  - There are no effective and scientifically validated mitigation measures available to reduce the likelihood of future strikes of a protected (non-threatened) species; and
  - Continued turbine strike impacts are likely to have consequences for the local persistence of populations
- A trigger, action, response plan (TARP) with specific and measurable triggers. Triggers for corrective actions should be based on strike rate extrapolations when assessed annually.
- Trials of alternative deterrent technologies
- Mitigation implementation protocols (e.g. shutting down turbines during migration events).

Appendix M.3 of the BDAR provides a high-level, indicative BBAMP framework, however the detail is limited.

The BBAMP is an important tool for monitoring, mitigating and offsetting residual prescribed impacts resulting from turbine strikes. As such, a more comprehensive draft BBAMP framework should be included with the prescribed impact assessment and attached to the BDAR.

#### *BCD Recommendation*

19. A more detailed BBAMP framework should be prepared in consultation with the BCD and included with the revised BDAR.

### Indirect Impacts

We note the BDAR has identified the indirect impacts of the proposal in table 7-3. Whilst some of these indirect impacts may be partially addressed through a comprehensive Biodiversity Management Plan (BMP), it is unlikely that all indirect impacts will be able to be addressed. Specifically edge effects associated with clearing activities and the indirect impacts of the wind turbines on surrounding biodiversity values.

In accordance with the BAM Operational Manual Stage 2 any remaining indirect impacts associated with the proposal should be offset by retiring biodiversity credits. Section 2.4 of the operational

manual details how biodiversity credits can be used to offset indirect impacts. The example in the manual is particularly relevant to addressing edge effects associated with vegetation clearing.

Further to this, the indirect impacts of the wind turbines on the surrounding vegetation also need to be considered. This is also acknowledged in section 7.1.4 of the BDAR where it states, '*The main risk is mortality through collision with moving turbine blades (blade-strike), although alienation (behavioural avoidance of suitable habitat near infrastructure) is also an important issue to consider.*'

To account for the reduction in habitat availability surrounding the wind turbine, a circle must be drawn around each turbine pedestal with a radius no smaller than the length of one turbine blade, with the selected radius described and justified in the BDAR. This indirect impact zone must then be mapped for each turbine where the circle intersects native vegetation. This zone will only require a partial loss to recognise that most of the habitat values will remain, with the partial lost determined and justified in the BDAR.

The updated BDAR should detail and justify these two indirect impacts of the proposal and calculate credits for them as set out above.

#### *BCD Recommendation*

20. Further information is required to address the full extent of indirect impacts associated with the proposal, including calculating biodiversity credits to offset the indirect impacts as described in the BAM Operational Manual Stage 2.

#### Haul Route Biodiversity Risk Assessment

The Haul Route Biodiversity Risk Assessment report was prepared by NGH dated April 2022 and forms Appendix B of the BDAR.

The haulage of wind farm components during construction of the Winterbourne Wind Farm is proposed to comprise the following sections:

- Port of Newcastle to Tamworth (Section 1)
- Tamworth to Walcha (Section 2).
- Walcha to proposal site (Section 3).

The report indicates the final upgrades to the haulage network will be determined post approval in the detailed design stage by contractors appointed to the project.

The report states the risk to vegetation of conservation significance is considered very low, based on extent of impact and the highly modified context of the works locations. However, the report indicates that pre-clearing surveys will be undertaken to provide an opportunity to verify this assumption and if required, include additional polygons within the BDAR.

It is not clear how a post approval condition to undertake pre-clearing surveys could then trigger the requirement to update an already finalised BDAR for an approved project.

#### *BCD Recommendation*

21. Detailed biodiversity surveys and assessment for the haulage route must be undertaken in accordance with the BAM 2020 and included in the BDAR prior to the proposal being determined.

## **EPBC Act – Review under the Assessments Bilateral Agreement**

The Australian Government Department of Agriculture, Water and the Environment has determined the proposed Winterbourne Wind Farm is a controlled action in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Therefore, the BCD also has responsibility, in this instance, because of the effect of the Bilateral Agreement between the NSW and Australian Governments, to ensure the biodiversity assessment has considered the appropriate Matters of National Environmental Significance (MNES), as listed by the EPBC Act, that will be affected by the proposal and in accordance with the Environmental Assessment Requirements provided by the Australian Government.

The BDAR states the requirement to settle EPBC offset obligations will be undertaken in accordance with the NSW offset rules where applicable to do so, consistent with the endorsed bilateral agreement. The BDAR also states that an offset strategy addressing Federal requirements will be developed based on further investigations, prior to approval.

Due to the numerous changes required to the BDAR and the effect that mapping changes will have on MNES, the BCD is currently unable to undertake a detailed review of the information provided in accordance with the assessments bilateral agreement.

The BCD will review all MNES in accordance with the assessment bilateral agreement after the updated BDAR has been prepared and submitted to the consent authority.

## **Flooding Matters**

The BCD has reviewed the Rapid Flood Assessment report prepared by the proponent's consultant and is satisfied the assessment has adequately assessed the potential flood risks of the proposal.

The indicative flood extents provided in the assessment, whether due to riverine or overland flow, are sufficient to inform the appropriate siting of the project infrastructure.

No recommendations are provided for flooding matters.

## **NPWS Matters**

### **Introduction**

As the land manager of Oxley Wild Rivers National Park ('the park'), the NSW National Parks and Wildlife Service (NPWS) continues to have serious concerns regarding the proposal and its impacts. The park is environmentally sensitive land of State significance directly adjoining the development site and is valued for its scenery, wilderness, and natural and cultural values.

These values include threatened plant species, many of which are restricted to the park and the distinct microclimate near to the edge of the gorges. The global significance of the park's natural values is recognised through world heritage and national heritage listing. The section of park closest to the Project site has been declared an asset of intergenerational significance due to it providing key habitat for the critically endangered gorge rice-flower (*Pimelea cremnophila*).

A key value of the park is its extensive areas of wilderness. Wilderness is a scarce and diminishing resource which needs protecting to ensure it will be available for the benefit and enjoyment of future generations. Currently only 2.6% of NSW is declared wilderness. The NSW Government has a legislated obligation to protect and promote wilderness and its values.

NPWS has reviewed the exhibited EIS, including the Landscape and Visual Analysis, Detailed Maps, Noise and Vibration Assessment, Landscape and Visual Impact Assessment, Aviation Impact



Assessment, Bushfire Risk Assessment, Telecommunications EMI Study and World Heritage Assessment.

We alerted the applicant's consultants during the preparation of the EIS to many of the proposal's potential impacts to NPWS operations involved in managing the park as well as the park's values. It is disappointing to find that these have not been minimised or avoided through an appropriate design of the wind farm. Further, NPWS is surprised that these concerns have not even been appropriately acknowledged or documented in the EIS to allow their adequate consideration before the proposal is determined.

As such, NPWS is requesting additional assessment information. It is likely that, to avoid significant impacts to the park's values and NPWS management operations, the project's layout and the siting of turbines will need to change.

The following details our key concerns and related recommendations.

### Impacts on Aerial Firefighting and Park Operations

The SEARs required the EIS to:

- identify any potential impacts on the aerial fighting of bush fires
- consider the impact to aerial pest control and fire management operations in Oxley Wild Rivers National Park.

The EIS fails to comply with the SEARs on these points.

During the consultation conducted as part of the EIS's preparation, NPWS advised the proposal had the potential for serious negative consequences on the park's fire and pest management operations that rely on low-flying aircraft. As documented in Appendices K and L of the EIS, NPWS identified the following matters that needed specific consideration in the relevant studies:

- loss of access to dams and other water points on and near the development site that are currently used for helicopter-based water bucketing during firefighting operations
- effects on helicopter access to the park, given advice from certain operators (e.g. Fleet Helicopters) that they would be avoiding flying through the area due to safety concerns
- the impact on ferry times for fire or pest programs in adjacent areas of the park especially during conditions when cloud, fog or thick smoke limits available visual flight paths
- helicopter insertion and extraction times for remote firefighters working in the park.

There has been no consideration of these matters in Appendix K, Appendix L and in section 6.5.2.3 of the EIS. For example, only the ALAs have been mapped (e.g. in Appendix K, Figure 21, p.47), not the dams that helicopters have used during previous fire emergencies to fill their buckets. Despite its explicit request, NPWS use of these dams is not even acknowledged in Appendix L or the EIS's section 6.5.2.3. There is also no mention of the project's impacts on ferry times or insertion/extraction times for remote firefighters. This impact should be identified and assessed.

The concerns raised by the Westpac Life Saver Rescue Helicopter Service have also been ignored. Although listed as being 'consulted', their views and use of the area have not been seriously considered in the EIS. At best, there is a statement that their 'flights can plan to go around the wind farm, which may increase flight time, but should not impact safety' (Action proposed on p.38). Appendix K contains no calculation of this increased flight time and the change in area that can be safely flown by their helicopter. NPWS believes the current configuration of the wind farm may have implications for the Helicopter Service's ability to respond to and assist in rescue operations in adjacent areas of park. The Helicopter Service states that the location of the wind farm may hamper their ability to respond to incidents to the east of Tamworth, especially in winter. This is a potential impact of wide significance to the community that has been completely ignored in the EIS.

While these earlier comments relate only to helicopter-based operations, the EIS should have also considered the use of fixed-wing aircraft which are used in dog-baiting and firefighting operations. This would include but is not limited to the use of Very Large Air Tankers (VLATs) and Large Air Tankers (LATs). Smaller aircraft are generally used for dog baiting operations on the edge of the park.

The safety risk assessment in Appendix K has concluded that obstacle lighting for the turbines and towers is not required to 'maintain an acceptable level of safety to aircraft'. A key underlying assumption in this assessment is that all low-level flight operations are limited to times of the day when visibility is good and exceeds 5000 m in all directions. NPWS advises that this is not always the situation in this area during firefighting, or search and rescue operations, and that many objects claimed to be 'visible' are not always well seen during low-flight operations. Near misses frequently occur.

The detailed consideration of lighting the turbines and wind monitoring towers (in Tables 13 and 14, Appendix K) does not provide strong evidence in support of the conclusion that lighting is not required. The comments from Westpac Rescue Helicopter who were provided an early copy of this risk assessment clearly indicate they disagree with the conclusions of this assessment. The Helicopter Service specifically requests that lighting be installed on the turbines and towers to provide operators an opportunity to see these hazards. They comment that 'seeing an unlit structure in low light conditions may prove extremely difficult' (see p.38, Appendix K). NPWS believes it is unacceptable that the EIS dismisses a control measure which could save pilot and passenger lives and is explicitly being requested by those experienced in conducting low-level flights in this area. It is expected that this matter will be referred to CASA by DPE Planning and that referral may impose a need for obstacle lighting.

Appendix K only recommends that WWPL 'should consider' engaging with local aerial agricultural operators and aerial firefighting operators. NPWS is relieved that the EIS is firmer than this and identifies in section 6.5.1.5 that the proponent will engage with these local operators in developing procedures for aircraft operations in the vicinity of the Project. This must be a condition of consent, with those procedures subject to annual review with updates implemented as required to ensure control of the unacceptable risk of aircraft collision with any of the project's infrastructure.

#### *NPWS recommendations*

22. Further detailed assessment of the proposal's impacts on NPWS firefighting and park management operations is required, consistent with the SEARs, with explicit consideration of:
  - a. the impacts of the loss of any waterbodies on or near the development site that are currently available to support fire management in the national park as sources of water for helicopter bucketing
  - b. the extra distance and time taken for insertion/extraction of remote firefighters in the Winterbourne and Apsley Gorge sections of the national park, assuming flight paths from Armidale and Walcha
  - c. the loss of Westpac Life Saver Rescue Helicopter Service's assistance in search and rescue operations in the national park
  - d. implications for future use of Very Large Air Tankers (VLATs) and Large Air Tankers (LATs) to suppress fires in the area.
23. The proposal should be referred to the Civil Aviation Safety Authority for a determination of the need for obstacle lighting for the turbines and towers.

24. Conditions of consent must be included to require engagement with local aerial firefighting and agricultural operators to develop procedures for such flight operations in the vicinity of the Project, for approval by the Secretary and subject to annual review and updates as required.

### Fire Impacts in the National Park

The SEARs required the EIS to identify potential hazards and risks associated with bushfires / use of bushfire prone land, including the risks that a wind farm would cause bush fire, potential impacts on Oxley Wild Rivers National Park and identifying measures that may be required to assist fire management in the National Park.

The EIS and its supporting document (Appendix L) have not seriously addressed this requirement.

Appendix L refers to the *New England Bush Fire Risk Management Plan 2017*. This document is out of date and is currently under review. Importantly, it is not representative of the fire management zoning shown in the NPWS *Macleay Gorges Reserves Fire Management Strategy 2018* which is a relevant plan under sections 38(4) and 44(3) of the *Rural Fires Act 1997*. There is no Strategic Fire Advantage Zone (SFAZ) in the park adjacent to the Project area as claimed.

NPWS is currently developing detailed guidance for fire management in the section of park closest to the Project site aimed at maintaining an appropriate fire regime for the persistence of the gorge rice-flower. This will be integrated into future revisions of the New England Bush Fire Risk Management Plan.

As outlined above, NPWS disputes the statements in Appendix L that ‘the Project would not impact or restrict access to currently available water points’ (p.11) and that ‘the turbines would not limit aerial fire fighting capabilities ... in the surrounding area’ (p.30). The assumption that the pre-identified waterpoints indicated on the Macleay Gorges Reserves Fire Management Strategy are the only waterpoints used by NPWS is a fundamental flaw in this assessment.

NPWS advises that potential helicopter waterpoints are in the project area. For example, there is a long history of NPWS use of the dam at grid reference E 387330, N 6576290 (zone 56) on Lot 89 DP756474. This dam would essentially become unavailable to water bucketing helicopters due to the no-fly zone that Fleet Helicopters and other operators have indicated they will impose.

This will increase turnaround times for helicopters, resulting in either an increase in the cost of operations (as more helicopters will be required) or larger fires developing as heli-bucketing of running fire edges will be inefficient and ineffective. This impact should have been identified and considered in the EIS, consistent with the SEARs.

In terms of measures that may be required to assist fire management in the park, the EIS suggests that improving the road network within the Project area will benefit the park. NPWS advises that vehicle access is not currently a limiting factor to this part of the park and so this aspect of the Project should not be considered a benefit to the park’s fire management.

A key measure that could benefit fire management of the park is sufficient buffer between the wind farm and the park to ensure that low-flight firefighting operations would not be restricted in the park. As stated in section 3.6.1 of Appendix K, the flight rules for fixed-wing aircraft are that they must avoid flying within a radius of 600 metres of tall objects such as turbines and towers. As such, NPWS recommends that no turbines should be located within 600 metres from the park boundary. Otherwise, aerial firefighting in the park will be compromised.

The risk of a fire in the nacelle of a wind turbine after it has fallen over has not been considered as a potential fire risk to the park in the EIS. Turbine B116 poses a particular risk as it is located only about 160m from the park boundary. Failure of this turbine’s footings may lead to the turbine’s

nacelle ending up within metres of the park boundary. This should be considered as a potential source of fire in the park.

#### *NPWS recommendations*

25. Further detailed assessment of the proposal's bush fire risks is required consistent with the SEARs.
26. The wind farm layout should be reconfigured so that no turbines are located within 600m of key water points and no other turbines are within at least 600m of the national park boundary.

#### Landscape and Visual Impacts

The SEARs required a detailed assessment of the visual impacts of all components of the project, including detailed consideration of potential visual impacts on the amenity values of Oxley Wild Rivers National Park, and its world heritage and wilderness areas. Impacts on these areas of sensitive land use designations were to be minimised.

NPWS advises the visual impact assessment informing the EIS is inadequate to enable a consideration of whether the visual impacts of the project on the park and in particular the wilderness areas have been minimised.

NPWS believes that, due to the size and siting of turbines so close to the park, the Project will significantly change the local landscape, aesthetics and visual values from various locations within the park. There will be significant changes to the skyline when viewed from designated lookouts (e.g. McMillan Lookout, Apsley Falls). The statement that the turbines will not be visible from most of the park, apart from its edges, is misleading to those who do not know the area. NPWS advises that 99% of people visiting the park do so from the edges.

The changes to the skyline when viewed from the wilderness sections of the park is a particular concern. Most of the park is not 'densely wooded' or 'dense vegetation' as stated throughout the EIS and Appendix I – much of it is open grassy woodland. This would mean that views of the turbines would not be obstructed by vegetation. The statement in the description of views from Budds Mare (VP19 on p.34 in the Appendix I appendices) that 'characteristically dense native bushland that would have ... screened views out of the campground' is misleading – the epicormic post-fire growth is likely to provide the greatest level of screening from this site.

We note section 15.5 of Appendix I includes an assessment of the visual impacts of the World Heritage area using a 3-dimensional digital elevation model. A similar assessment of the visual impacts on the larger wilderness area is missing but was also required under the SEARs. NPWS advises that unobstructed views of the turbines will occur from many points of declared wilderness, which covers more of the park than just the world heritage areas.

Although focussed on the world heritage area, the mapping of the Zone of Visual Influence (ZVI) (page 76 of Appendix I) reveals there will be views of turbines from many parts of the wilderness, with very high levels of visual influence at Bayles Mountain and along Narrow Neck Ridge in the Macleay Gorges Wilderness (outside the World Heritage Area). NPWS disputes the conclusion on page 75 that these views are 'unlikely...[to] impact on the existing landscape character or immersive experience of hiking'. A unique attribute of the Macleay Gorges Wilderness is a skyline that is uncluttered by visual intrusions of modern infrastructure. Views of modern infrastructure, such as wind turbines, will greatly diminish park visitors' feelings of solitude and separation from modern development that are important wilderness values that will be lost if the project proceeds as planned.



Another location in the Macleay Gorges Wilderness affected by the visual impacts of the project is the Green Gully Track (GGT), which is a fee-based self-reliant wilderness walking experience in the park. NPWS has calculated that views of turbines will impact on walkers' feelings of solitude and experience of the wilderness setting on three of the four days of the walk. Thus, the development in its current form will have a significant adverse effect to the people on the GGT who have paid for a wilderness experience. This is likely to result in fewer people booking the experience and a decline in the educational opportunity to promote wilderness. This will also lead to an economic impact, with a decline in revenue for both local business and for NPWS and the loss of wilderness values

#### *NPWS recommendation*

27. Reassessment of the visual impacts in the wilderness must be undertaken using a 3-D Digital Elevation Model to identify those turbines that will intrude into the skyline when viewed from the wilderness areas of the national park – including the Green Gully walk and other points within the wilderness where there is currently no intrusion above the skyline – and all turbines having such impacts must be relocated/removed to eliminate those impacts.

#### Noise Impacts

The SEARs required the EIS to assess the noise impacts on amenity / recreational use of the Oxley Wild Rivers National Park (including – but not limited to – walking tracks, campgrounds and lookouts). The EIS has only considered noise impacts at these formal visitor nodes.

As a wilderness park, backpack camping can occur anywhere permitted under the park's plan of management, adopted in June 2005. This is any location in the park more than 200m from roads, public access vehicle trails, day use areas and car-based camping areas (such as Budds Mare Campground).

Backpack campers seeking a wilderness experience should be considered highly sensitive receivers in the noise assessment. Unlike residential dwellings, tents do not provide any attenuation of sound. Thus, the assessment that has treated park visitors as equivalent to rural residents, would not necessarily reflect the true level of impact that noise will have on campers' experience. It is suggested that predicted noise contours for 30dB(A) should have been depicted on the map on p.50 of Appendix H, or the park boundary shown on the EIS's Figure 6-8.

Even using the 35dB(A) contour, it is obvious some sections of park (~ 300 ha) will be subject to unacceptable noise impacts.

Any audible turbine noise will devalue the natural experience sought by visitors and will result in the loss of wilderness values. The level of justification given in the EIS about how background noise will drown out turbine noise is unacceptable, as there will be times of low to no background noise and, at these times, the camping experience will be affected, making it inconsistent with the values people expect in the park. Turbines that are audible from any part of the national park must be removed from the project.

#### *NPWS recommendations*

28. Further noise assessment is required that considers anyone camping within the national park, including in areas remote from designated campgrounds, as highly sensitive receivers, and which assesses noise impact on those receivers using noise contours and attenuation relevant to those locations and uses.
29. Turbines that are audible within the national park must be removed.

## Biodiversity Values

The SEARs require that development near the national park boundary should take a conservative approach to assessing potential impacts on biodiversity values. This would include consideration of connectivity across the landscape and the use of the development site by fauna located in the park.

Biodiversity values, and the presence of threatened and endemic species, are one of the key components underlying the park's world heritage and national heritage values.

The EIS states (in section 6.8.3.3, p.268) that the boundary of the Gondwana Rainforests primarily follows the deep gorge country of the Apsley River with the implication that world heritage values are restricted to this area. The current boundary of the world heritage property is an artefact of the boundaries of the park that existed in 1994 and is set to change.

The Winterbourne addition to the park (which occurred after 1994) is part of the proposed extensions to the Gondwana Rainforests of Australia World Heritage property, and has been identified as such through being incorporated on UNESCO's Tentative World Heritage List (reference: <https://whc.unesco.org/en/tentativelists/5541/>). The NSW Government agreed to the proposed extensions being placed on the Tentative List and have assured the Australian Government that no action should be taken to undermine the potential for a successful future nomination of these areas for inscription on the World Heritage List.

Hence, world heritage values should be assessed as present throughout the park. A key narrowly endemic flora species known to occur in proximity to the development is the gorge rice-flower.

The development layout has multiple turbines and a substation near the national park boundary. This will impact foraging habitat significant to large forest owls known to roost in the adjoining park. It will also impact vegetation along corridors that provide important linkages for migration/movement across the landscape by birdlife, bats and arboreal mammals that inhabit the park.

Based on the coordinates in Table 3-8 (p.57) and the mapping in Map F3-11, it appears that turbine B116 will be only about 160m from the park boundary. For a structure that will be 230 metres tall, this is an inadequate buffer between the turbine and the park. Failure of the turbine's footings, for example, may lead to significant lengths of its blades crashing into the park.

Further, there is the potential for blade throw events to occur and impact the park. The Risk Statement for section 6.5.3 of the EIS (p.217), acknowledges that a conservative estimate of a blade-throw event is 500 metres.

### *NPWS recommendations*

30. Development infrastructure must be removed from proximity to the national park where it will have an adverse effect on any corridors of native vegetation that connect to the national park.
31. No turbines are to be located within at least 500m of the national park boundary (noting that, as recommended for safe fixed-wing aircraft operations, this buffer should be at least 600m).

## Electromagnetic Interference

The assessment of potential electromagnetic interference on radio transmissions focusses on fixed transmitters, even for point to point. NPWS was consulted and Appendix N identifies that two turbines, (B071, B073), will interfere with our point-to-point link (see Table 6-40, p.227 of the EIS).

The proposed mitigation measure is to move these WTGs outside the 'diffraction exclusion zones' – see Table 6-41. It is unclear why, based on the assessment outlined in Appendix N, these turbines are not shown as being relocated in the application subject to the EIS. NPWS recommends the relocation of these turbines should be explicitly identified of the conditions of consent.

Further, if approved, the development consent should provide for the proponent to rectify any issues with emergency service multipoint communications should they arise. Any impacts in this regard will be a key safety issue for NPWS and emergency service personnel working in this remote area.

*NPWS recommendations*

32. Turbines B071 and B073 must be relocated out of the interference zone of the NPWS point-to-point link as recommended in Appendix N of the EIS.
  
33. Conditions of consent must be included that require rectification of any issues with multipoint communications encountered in the first five years of the wind farm's operation.